

Date: 28.05.2026.

To,
The Regional officer
Integrated Regional Office {IRO}, Vijayawada,
Ministry of Environment, Forest and Climate Change,
Green House Complex, Gopalareddy Road,
Vijayawada-520010, Andhra Pradesh.

Sir,

Sub : Submission of Certified EC CFE CFO Half Yearly Compliance report for our project of Adani Gangavaram Port Limited, Gangavaram (V), Pedagantyada (M), Visakhapatnam District, Andhra Pradesh - Reg.

Ref : 1. EC File No. 10-3/2005-IA.III, Date: 11.03.2005.
2. EC& CRZ Clearance File No. 10-14/2009-IA.III, Dated 19.03. 2010.
3. EC & CRZ Clearance File No. 11-91/2010-IA-III, Dated 07.02.2012
4. EC & CRZ Clearance File No. 10/51/2021-IA.III, Dated 24/12/2021
5. EC Amendment File No. 10/51/2021-IA.III, Date: 19.11.2025
6. CFE Order No: APPCB/ VSP/ VSP/ 113/ CFE/ HO/ 2012 Date: 16/08/2022
7. CFE Order No: 113/APPCB/CTE/RO-VSP/HO/2026 Dt. 09-04-2026
8. CFO Order No: APPCB/VSP/113/CTO/HO/2009 Date. 22/08/2024

We wish to inform you that the Ministry of Environment, Forest and Climate Change, vide its File No: 10/51/2021-IA.III, Dated 24/12/2021 has accorded Environmental Clearance for our Adani Gangavaram Port Limited, Gangavaram Village, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh.

As per the conditions of issued Environmental Clearance, the Project Proponent has to submit a six monthly compliance report to Integrated Regional Office {IRO}, Vijayawada, Ministry of Environment, Forest and Climate Change. We here with submit six monthly compliance reports for the period of **01st October 2025 to 31st March 2026** for the said project for your kind perusal.

Thanks and Regards,

For Adani Gangavaram Port Limited


(Authorized Signatory)

Copy to: The Environmental Engineer, A.P Pollution Control Board Regional Office Visakhapatnam for kind information.

Adani Gangavaram Port Limited

(Formerly "Adani Gangavaram Port Private Limited")

Gangavaram Post, Pedagantyada,

Visakhapatnam, Andhra Pradesh, India - 530 044

CIN : U61100GJ2021PLC124091

Registered Office : Adani Corporate House, Shanthigram, Nr. Vaishno Devi Circle, S.G. Highway, Khodiyar, Ahmedabad-382421, Gujarat, India.

Tel + 91-891-2701177, 2889999

Fax +91-891-2703377

www.adaniports.com

COMPLIANCE REPORT OF ENVIRONMENTAL & CRZ CLEARANCE, CONSENT TO ESTABLISHMENT & CONSENT TO OPERATION

01ST OCTOBER 2025 TO 31ST MARCH 2026

SUBMITTED BY

ADANI GANGAVARAM PORT LIMITED,
Gangavaram Village, Pedagantyada Mandal, Visakhapatnam District
Andhra Pradesh

Submitted to

The Regional officer
Integrated Regional Office {IRO}, Vijayawada,
Ministry of Environment, Forest and Climate Change,
Green House Complex, Gopalareddy Road,
Vijayawada-520010, Andhra Pradesh.

PREPARED BY

M/s. SV ENVIRO LABS & RESEARCH PRIVATE LIMITED.

Formerly known as M/s. SV Enviro labs & Consultants
Environmental Engineers & Consultants in Pollution Control

H.O: Environ House, Block-B, B-1, IDA, Auto Nagar,
Visakhapatnam-530 012

Recognised by MoEF & NABL



CONTENTS

Sl. No	Name
1.0	Introduction
1.1	Location of the Project
	Environmental Clearance Order & Compliance Date: 11.03.2005
	Environmental Clearance Order & Compliance Date: 19.03.2010
	Environmental Clearance Order & Compliance Date: 07.02.2012
	Environmental Clearance & CRZ Clearance Order & Compliance Date: 07.02.2012
	Amendment in EC & CRZ Clearance Order & Compliance Date: 19.11.2025.
	Consent for Establishment Order & Compliances date: 16.08.2022
	Consent for Establishment Order & Compliances date: 09.04.2026.
	Consent To Operate & Hazardous Waste Authorisation Order & Compliance date: 22.08.2024.
	ENVIRONMENTAL CLEARANCE-ANNEXURES
Annexure-1	CSR Activity Details FY-2025-2026
Annexure-2	CRISIS Management Plan
Annexure-3	Environment monitoring measures adopted by AGPL are summarised
Annexure-4	Mechanized Operations Details
Annexure 5	Safety Mock drill Details
Annexure -6	Risk Assessment Report
Annexure -7	PLI Policy copy.
Annexure -8	E-Waste Generated & Disposed Details (Form-3)
Annexure -9	Hazardous Waste Annul Returns (Form-4)
Annexure -10	Environmental Statement (Form-5)
Annexure- 11	ISO-45001 Certificate
Annexure -12	TF PCB Submit copy-Apr-26
Annexure -13	Municipal solid waste GVMC Order
Annexure -14	Rain Water harvesting letter
Annexure -15	Environmental Monitoring reports
Annexure -16	Newspaper advertisement Copies
Annexure -17	Photographs
	NABL Certificate

1.0 Introduction:

Adani Gangavaram Port Limited – AGPL (formerly Gangavaram Port Limited) is located at Gangavaram (PO), Pedagantyada (M), Visakhapatnam District of Andhra Pradesh, India. AGPL has the unique distinction of being one of the few Greenfield port projects in India which has been implemented on schedule. Construction at the site commenced in December 2005 and the Port commenced trial operations in August 2008.

AGPL has been developed as an all-weather, multipurpose port with water depth up to 20.2 meters, making it the deepest and capable of handling fully laden Cape size vessels of up to 200,000 DWT, with its deep draft berths and efficient operations AGPL has become the gateway port for a hinterland spread over 8 states across Eastern, Western, Southern and Central India. Its ability to handle larger vessels efficiently has resulted in substantial savings for trade and port users. Adani Gangavaram Port Limited provides efficient cargo handling services for a variety of bulk and breakbulk cargo groups including Coal, Iron Ore, Fertilizer, Limestone, Bauxite, Raw Sugar, Project Cargo, Alumina, Steel products etc.

The Port, its related facilities and material handling system are among the most advanced in Asia and meet the highest standards in terms of pollution prevention and safety.

AGPL is presently operating with 9 berths and with consented cargo handling capacity of 40.95 MTPA for variety of Cargos of bulk and break bulk including coal, iron ore, Multi Cargo (Agri products, Slag, Lime stone, Steel products etc.), Fertilizer, Industrial Raw Materials such as Gypsum, Aluminum Ingots and their facilities includes berths, state-of-the-art cargo handling systems, mechanized storage facilities, railway sidings etc., The Port extended to 2800 acres, out of which Port development and operation is in 1800 acres only.

AGPL is an ISO 9001:2015, ISO 14001 2015, ISO 45001:2018 and ISO 50001:2018, ISO 14001-2015 Certified Port for providing Integrated Seaport Facilities and Related Services for Handling, Storage and Delivery of Cargo.

1.2 Project location:

Adani Gangavaram port is located at Gangavaram village, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh.

Cost of Project Proposals:	
Existing project cost	: 783689 Lakhs
Proposed Project Cost	: 4850 Lakhs
Plant and Machinery	: 4500 Lakhs
Building Cost	: 300 Lakhs
Land Cost	: 50 Lakhs
Project Cost after expansion	: 788539 Lakhs
Nature of the project	: Adani Gangavaram Port Limited.
Location of project	Sy.No.274 (New Sy. No.307), Gangavaram (PO), Pedagantyada (M), Visakhapatnam District, Andhra Pradesh
District & State	Visakhapatnam District, Andhra Pradesh State.
Mandal	Pedagantyada
Village	Gangavaram
Category of project:	Red category.
Latitude & longitude	17°38'51.10"E, 83°12'25.37"N
Maximum Temperature	42°C
Minimum Temperature	25°C
Annual average rain fall	1200 mm
Predominant wind direction	NE & SW
Nearest habitation	HB Colony at 1.0 km from the site area
Nearest Highway	Balacheruvu Road at a distance of 1.09 km
Nearest railway station	Duvvada Railway station at a distance of 8.36 km.



**Environmental Clearance Order
& Compliance
Date: 11.03.2005**

No.10 3/2005-IA-III
Government of India
Ministry of Environment and Forests.

Paryavaran Bhavan,
C.G.O. Complex, Lodi Road,
New Delhi-110003

Dated the 11th March, 2005

Sub: Development of Port at Gangavaram near Visakhapatnam by M/s Gangavaram Port Limited - Environmental Clearance -regarding.

Reference is invited to the letter No.6762/SADA/2004, dated 16.12.2004 from Government of Andhra Pradesh, Environment Forests Science and Technology Department regarding the subject mentioned. Further letters from M/s Gangavaram Port Limited received vide letter No.Nil, dated 30.12.2004 have also been considered.

The proposed project involves setting up of deep-water multipurpose port at Gangavaram, Visakhapatnam district suitable for handling different types of cargos. The land requirement for the project is 1800 acres, which is being made available by Government of Andhra Pradesh. The site of the port is located at Latitude 17°37' N and Longitude 83°14' E near Dibbapalem village, Pedaganryada.

The proposal envisages construction of South Break Water of 1.3 km length, North Break Water of 1.1 km length and 4 berths, (1 dry bulk cargo, 1 fertilizer/lime stone, 1 container terminal, and 1 break bulk/multipurpose) and one exclusive berth for the port crafts, besides providing ware housing facilities and transit sheds. The project involves capital dredging of 8 million cubic metres, which will be pumped to the shore for reclamation of back up area. The project is classified as Coastal Regulation Zone-III category and the inter tidal zone falling in between High Tide Line and Low Tide Line is categorized as Coastal Regulation Zone-I(ii). The total cost of the project is Rs.1459 crores.

The Andhra Pradesh Pollution Control Board has accorded NOC for the project vide their letter No.113/PCB/C.Esst/RO-VSP/AEE-N/2002-1225, dated 24.7.2003.

The proposal has been examined and environmental clearance under the provisions of Coastal Regulation Zone Notification, 1991 as amended from time to time is hereby accorded to this project subject to effective implementation of the following conditions:-

(A) Specific Conditions:

- (i) The project proponent shall not undertake any destruction of mangroves during construction and operation of the project.
- (ii) All the conditions stipulated by Andhra Pradesh Pollution Control Board in their consent letter No.113/PCB/C.Esst/RO-VSP/AEE-N/2002-1225, dated 24.7.2003 shall be effectively implemented.

- (iii) Littoral drift management using Rainbow Technique should be adopted for beach nourishment on the northern side of north Break Water to combat coastal erosion problems.
- (iv) Random wave plume test should be conducted to check the stability of Breakwater section and Round Head, before commencement of work.
- (v) A large quantity of stones are proposed to be quarried from Yerada hill. Environment Management and rehabilitation plan of the quarry site should be worked out and implemented.
- (vi) Marine ecology monitoring shall be done regularly during construction of Breakwater and dredging operation.
- (vii) Regular monitoring of air quality shall be done in the settlement areas around the project site and appropriate safeguard measures shall be taken to ensure that the population is not subjected to higher levels of air pollution.
- (viii) Sewage arising in the port area shall be disposed off after adequate treatment to conform to the standards stipulated by APPCB and shall be utilized/re-cycled for gardening, plantation and irrigation.
- (ix) The Relocation of the fishermen community will be done strictly in accordance with the norms prescribed by the State Government. The relocated fishermen community will be provided with all facilities including health care, education, sanitation and livelihood.
- (x) Adequate plantation shall be carried out along the roads of the Port premises and a green belt shall be developed.
- (xi) Project proponent shall regularly update the Disaster Management Plan from time to time.
- (xii) Fire Fighting arrangements are examined to the new proposal.
- (xiii) There shall be no withdrawal of ground water in CRZ area, for this project. The proponent shall ensure that as a result of the proposed constructions, ingress of saline water into ground water does not take place. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.
- (xiv) The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the PWD/Electricity Department.
- (xv) Specific arrangements for rain water harvesting should be made in the project design and the rain water so harvested should be optimally utilised. Details in this regard should be furnished to this Ministry's Regional Office at Bangalore within 3 months.

- (xvi) The facilities to be constructed in the CRZ area as part of this project should be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently.
- (xvii) Land reclamation shall be carried out only to the extent that it is essential for this project.
- (xviii) Green buffer zone shall be provided all around the project area in consultation with local forest department and the report submitted to this Ministry's Regional Office at Bangalore.
- (xix) No product other than those permissible in the Coastal Regulation Zone Notification, 1991 shall be stored in the Coastal Regulation Zone area.

B. General Conditions

- (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.
- (ii) Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.
- (iii) The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater 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.
- (iv) The proponent shall obtain the requisite consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 from the Andhra Pradesh Pollution Control Board before commissioning of the project and a copy of each of these shall be sent to this Ministry.
- (v) The proponents shall 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 inspection to the concerned State/Central officials during their visits.
- (vi) 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.

- (vii) The sand dunes and mangroves, if any, on the site should not be disturbed in any way.
- (viii) 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.
- (ix) 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.
- (x) 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 Bangalore and the State Pollution Control Board.
- (xi) 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.
- (xii) 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.
- (xiii) This Ministry reserve the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.
- (xiv) This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.
- (xv) The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen at Website of the Ministry of Environment & Forests at <http://www.envfor.nic.in>. 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.
- (xvi) 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.

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 subsequent amendments and the Public Liability Insurance Act, 1991 and the Rules made

thereunder 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 18th April, 1996 in the Writ Petition No.664 of 1993 to the extent the same are applicable to this proposal.

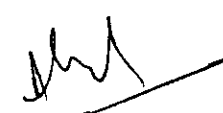

(A. Senthil Vel)
Joint Director

To

✓
Shri K. Upendra Rao.
President,
Gangavaram Port Limited.
Plot No.208, Road No.14.
Jubilee Hills, Hyderabad-500033.
Andhra Pradesh.

Copy to:

1. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, II Block, Koramangala, Bangalore - 560034.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110032.
3. Shri T. Chatterjee, IAS, Principal Secretary to Government, Environment Forests Science and Technology Department, Secretariat, Hyderabad - 500022.
4. DIG (SU), Regional Office Cell, Ministry of Environment & Forests, New Delhi.
5. The Chairman, Andhra Pradesh State Pollution Control Board, Hyderabad.
6. Director EI Division, Ministry of Environment & Forests, New Delhi
7. Guard File.
8. Monitoring Cell.


(A. Senthil Vel)
Joint Director

PROJECT NAME		: Development of Port at Gangavaram near Visakhapatnam by Adani Gangavaram Port Limited
LOCATION		: Dibbapalem Village, Pedagantyada, Andhra Pradesh
EC FILE NO.		: 10-3/2005-IA.III
EC IDENTIFICATION NO.		: 10-3/2005-IA.III
EC DATE		: 11.03.2005
COMPLIANCE PERIOD		01 ST OCTOBER 2025 TO 31 ST MARCH 2026
NO.	CONDITION	COMPLIANCE
Specific Conditions		
1.	The project proponent shall not undertake any destruction of mangroves during construction and operation of project.	Complied. AGPL has completed all the Phase construction/developments by August, 2008. No Mangroves area in the vicinity of the port premises.
2.	All the conditions stipulated by Andhra Pradesh pollution control board in their consent letter no 113/PCB/C Esst/ RO- VSP/ AEE-n/ 2002-1225, dated 24-7.2003 be effectively implemented.	Complied. AGPL has implemented all the conditions stipulated in the consent issued by APPCB.
3.	Littoral drift management using rainbow technique should be adopted for beach nourishment on the northern side Of north break water to combat coastal erosion problems.	Complied. AGPL has created a sand trap near the South breakwater. The material trapped in the sand trap is being lifted and the same is being used for beach nourishment on the north side Of the North Boundary Wall.
4.	Random wave plump test should be conducted to check the stability Of breakwater section and round head. Before commencement of work.	Complied. AGPL had carried out the Wave flume tests through HR Wallingford, UK, to check the stability of breakwater section and round head before commencement of work.
5.	Large quantities of stones are proposed to be quarried from Yarada hill. Environment management and re-habitation p an Of the quarry site shoo d be worked out and implemented.	Complied. AGPL had implemented Environment management and Re-habitation an at quarry site with the development of Greenbelt in an area of 40 acres.
6.	Marine ecology monitoring shall be done regularly during construction of breakwater and dredging operation.	Complied. AGPL has been carrying out the Marine ecology monitoring through an NABL certified Agency on fortnight basis and the reports are being submitted to APPCB on monthly basis. October 2025 to March 2026 monitoring results are attached as Annexure.

7.	Regular monitoring Of air quality shall be done in the settlement areas around the project site and appropriate safeguard measures shall be taken to ensure that the population is not subjected to higher of Pollution.	Being Compiled. AGPL established and operating 4 No. of Continuous Ambient Air quality Monitoring stations Within the Port premises, at the below mentioned locations as suggested by APCB vide letter dated 02.03.2019 to monitor the parameters Viz., PM₁₀, PM_{2.5}, SO_x, NO, NO_x, CO and the data is being up loaded to APPCB website and the parameter values are meeting the Board standards. Downwind directions towards habitation - Administrative office towards H B colony (Station 1) - Project site office building towards Venkannapalem (Station-2) - Watch tower-4 towards Gangavaram village (Station-3) Upwind direction towards RINL - At Silo (upwind directions-RINL) Station-4 The locations are as per the instructions of APPCB to monitor the parameters viz., PM 10, PM 2.5, SO₂, NO_x, NO₂, CO. The CAAQM data has been linked to APPCB website. AGPL is submitting the daily average data on month y basis to APPCB & Half-yearly basis to MOEF&CC. During the compliance period (from October 2025 to March 2026).
8.	Sewage arising in the port area shall be disposed Of after adequate treatment to conform to the standard stipulated by APPCB and shall be utilized/re-cycled for gardening, plantation and irrigation.	Complied. AGPL established and operating STP of 30 KLD and 5 KLD capacities. Additionally, 15 KLD capacity of STP has completed construction and commissioning is under progress, to treat the sewage generated from the utilities. The treated water is being used for the dust suppression / green belt development.
9.	The relocation of the fisherman Community WII be done strictly in accordance With the norms prescribed by the state Environment. The relocated fishermen community will be	Complied. The R&R package to the PDFs & PAFS had finalized 8 completed by the Government of

	provided with all facilities including health care, education, sanitation and livelihood.	Andhra Pradesh with due concurrence of the fisherman community.
10	Adequate plantation shall be carried out along the roads Of the port premises and a green belt shall be developed.	Complied. • For the FY 2025-26 AGPL competed plantation of 42,923 with a height of 10 m towards the Gangavaram village side. • As of now AGPL developed plantation with more than 5-5 Lakhs saplings in about 320 acres within the Port premises • Maintaining 50 m Width of green belt towards North and North-West direction with special emphasis towards habitation HB Colony, Peda Gantyada, Venkannapalem, Kongapalem & Gangavaram village. • Maintaining thick greenbelt at port Approach Road, Railway track side and at Truck parking area along the wind breaking wall towards HB Colony. • Maintaining exclusive nursery to maintain and improve the green belt on continuous basis.
11.	Project proponent shall regularly update the disaster management plan from time to time.	Complied. • The On-Site / Off Site Emergency Plan answers revised on 01.07.2025. copy attached as Annexure-19. • Conducting Mock drills periodically Mock drill s as attached Annexure.
12	Firefighting arrangements are examined to the new proposal.	Complied. Conducting the mock drills periodically
13.	There shall be no withdrawal of ground water in CRZ area, for this project. The proponent shall ensure that as a result Of the proposed constructions, ingress of saline water into ground water does not take p ace. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.	Complied. There is no groundwater withdrawal within the Port area and the Port is purchasing the required quantity of water from (VIWSCO) GVMC.

14.	The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the PWD/ Electricity Department.	Complied. Water supply and power supply are provided / commissioned by GoAP through GVMC and APTRANSCO on 11-12.2008 prior to the commencement of port operations
15.	Specific arrangements for rain water harvesting should be made in the project design and the rain water so harvested should be optimally utilized. Details in this regard should be furnished to this Ministry's Regional Office at Bangalore within 3 months.	Complied. Provision has been provided for rain water harvesting within the port premises & utilizing the supernatant water for dust suppression. The details were furnished to MOEF vide CPL letter No. GPL,'GEN/002.dated. 09.06.2005.
16.	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. 11 as amended subsequent.	Complied with CRZ Notification 1991 as amended subsequent y
17.	Land reclamation shall be carried out on to the extent that it is essential for this project.	Complied.
18.	Green buffer zone shall be provided all around the project area in consultation with local forest department and the report submit to this Ministry's Regional Office at Bangalore.	Complied.
19	No product other than those permissible in the Coastal Regulation Zone Notification, 1991 shall be stored in the Coastal Relation Zone area.	Complied.
B. General Conditions		
1.	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. AGPL has carried-out a construction Designs / drawings related to construction activity are approved by State government of A.P & regulations including Coastal Regulation Zone Notification 1991 & its amendments.
2.	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase of the project so as to avoid	Complied. No Construction was going on presently.

	felling of trees/ mangroves and pollution of water and the surroundings.	
3.	The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater 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 Forest under the Environment (Protection) Act, 1986, whichever are more stringent.	Complied. • AGPL has provided collection bins at about 76 locations within the port premises for collection of dry & wet solid & domestic waste. • Provision was arranged for daily collecting and disposing of the domestic solid waste to GVMC dump site. • The GVMC segregates the material into dry and wet waste. The dry waste viz., Plastic, glass, iron, aluminium, cardboard, wooden etc., are separated with the help of dry resource collection center. • The wet material will be treated with window fermentation with a specific cluster, which convert the wet waste into useful organic mixture by emitting low CO₂ level. The whole process is under Solid Waste Management Rules 2020 (Amendment) for environment sustainability. • Organic waste is being collected on regular basis within the Port and using for vermin-compost preparation. • Sludge from STP - utilizing as manure for plants. • Noise monitoring is being carried through a 3rd party agency and submitting the report to SPCB on monthly basis & on Half-yearly basis to MoEF & CC.
4.	The proponent shall obtain the requisite Consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 from the Andhra Pradesh Pollution Control Board before commissioning of the project and a copy of each of these shall be sent to this Ministry.	Complied.

5.	The proponents shall 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 inspect' on to the concerned State/ Central official s during their visits..	Complied. AGPL established and operating STP of 30 KLD and 5 KLD capacities. Additionally, 15 KLD capacity of STP has completed construction and commissioning is under progress, to treat the sewage generated from the utilities. The treated water is being used for the dust suppression / green belt development.
6.	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.	Complied. AGPL has appointed an ISO certified agency to carry-out Environmental monitoring parameters on terrestrial as well as marine water quality and submitting the report to RO, A.P. Pollution Control Board on monthly basis and MoEF&CC on half-yearly basis. As per the results, the parameters are within the standards.
7.	The sand dunes and mangroves, if any, on the site should not be disturbed in any way.	Complied. No sand dunes and mangroves located in the Port limits.
8.	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.	Complied.
9.	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.	Complied.
10.	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 Bangalore and the SPCB	Complied. AGPL has been reporting the Funds & expenditure incurred for environment protection measures in Form-V Environmental Statement and submitting the same to MOEF& CC, and APPCB. Latest 2024-25 Form-V copy Attached as Annexure.
11.	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 proponent's during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of	Being complied.

	mitigative measures and other environmental protection activities	
12.	In case of deviation or alteration in the project including the implementing agency, afresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection.	Being complied.
13.	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry	Noted the condition.
14.	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with,	Noted the condition.
15.	The project proponent should advertise at least in two local newspapers wide circuited in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board and may a so be seen at Website of the Ministry of Environment& Forests at http://www.envforin.in 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 Regional Office of this Ministry at Ba a ore	Complied.
16.	The Project proponents should inform the Regional Office at Bangalore as well as the Ministry the date of financial closures and final approval of the project by the concerned authorities and the date Of Start Of Land Development Work.	Complied.

**Environmental Clearance Order
& Compliance
Date: 19.03.2010**

5473
27/3/10

No. 10-14/2009-IA.III
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110 003.

Dated: 19th March, 2010.

To
M/s. Gangavaram Port Limited,
Hansa Crest, 1st Floor,
Plot No.62, Road No.1,
Jubilee Hills,
Hyderabad - 500 033,
Andhra Pradesh.

Subject: Environmental and CRZ Clearance for the construction of 5th Berth in Visakhapatnam Andhra Pradesh by M/s. Gangavaram Port Ltd. - Reg.

This has reference to the letter No: 6586/CZMA/2008, dated 24.12.2008 of Special Chief Secretary, E.F.S. & T. Department, Govt. of Andhra Pradesh and subsequent letter dated 25.05.2009 and 02.11.2009 received on 07.12.2009 seeking prior Environmental and CRZ Clearance for the above project under the EIA Notification - 2006 and CRZ Notification, 1991. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification - 2006 and subsequent amendment in 2009 and CRZ Notification, 1991 on the basis of the mandatory documents enclosed with the application viz., the Questionnaire, EIA, EMP and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meetings held on 23rd - 24th April, 2009 and 21st - 23rd December, 2009.

2. It is interalia, noted that the original project was accorded Environmental Clearance for the construction of four berths and one exclusive berth for the port crafts besides providing ware housing facilities and transit sheds on 07.11.2008. The present proposal intends to develop the exclusive berth permitted earlier to accommodate the Port crafts into a full fledged General Cargo Berth with a draft of 14.50 m as part of augmenting the facilities to ensure better utilization of the constructed space. The total extent of the port area is 2,800 acres. The present proposal pertains to change of Cargo profile, to allow bigger vessels in the port, increase in number of berths, change of dimensions of berths, changes in cargo storage area etc. with an additional investment of Rs. 250 crores with a cumulative projected cost being in the order of Rs. 1650 crores.

AEE-2

Pl file

Jahan

27/3/10

3. The revised scope of the project includes the changes in the orientation of breakwaters, which is based on currents, and wave pattern of the sea. The estimated quantum of net annual littoral drift is assessed to be of the order of 9,00,000 cum moving from south to north. As per the Mathematical modeling, the long shore current along the southern breakwater indicates that sediments transport takes place along the breakwater towards the entrance channel. In the case of Gangavaram the average net sediment transport is estimated to be in the order of 0.9 million cum per year. The sand trap has been provided. The sand trap is designed between - 6.0 m and - 14.0 m contours outside the south breakwater to trap 0.5 to 0.6 million Cum of sediments per year. The starting point of the southern breakwater is shifted towards southern hill known as Meraka Mettta without any adverse impacts on shore. The length of southern breakwater is indicated as 1750 meters and oriented at 46° - 234° . The northern breakwater is 800 m long and oriented 153° - 333° . The orientation of the entrance channel to the port has been fixed at 84° - 264° . The width of the approach channel as per the report is 200 m with a dredged depth of - 20.2 m below CD and maneuvering area is -19.3 m below CD. The General Cargo berth will be 240 m. length, 21 m. width and with 14.50 m. draft.

4. As per the approved Coastal Zone Management Plan (CZMP), the entire port area is classified as CRZ-III. The Environmental Impact Assessment Report, Detailed Feasibility Report, Risk Assessment and Oil Spill Response Plan on Emergency Action Plan, Report on Demarcation of LTL, HTL, and CRZ Lines by National Institute of Oceanography, carried out. The Andhra Pradesh Pollution Control Board issued Consent Order for Establishment (CFE) through Order No. 113/PCB/CFE/RO-VSP/HO/2008, dt. 11.08.2008, for conversion of Berth earmarked for Port crafts into General Cargo Berth to handle containers and other dry cargo like agriculture products.

5. The Environment, Forests, Science and Technology Department, Govt. of Andhra Pradesh recommended the proposal vide letter No.6586/CZMA/2008, dated 24.12.2008 for the issue of Environmental Clearance.

6. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the grant of Environmental and CRZ Clearance for the project. Accordingly, the Ministry hereby accord necessary Environmental and CRZ Clearance for the above project as per the provisions of Environmental Impact Assessment Notification - 2006 and CRZ Notification, 1991 and its subsequent amendment in 2009, subject to strict compliance of the terms and conditions as follows:

7. **Specific Conditions :**

- (i) No construction work other than those permitted in Coastal Regulation Zone Notification, 1991 shall be carried out in Coastal Regulation Zone area.
- (ii) Sewage shall be treated and the Treatment Facility shall be provided in accordance with the Coastal Regulation Zone Notification, 1991. The disposal of treated water shall confirm the regulation of Andhra Pradesh State Pollution Control Board.
- (iii) Oil spills if any shall be properly collected and disposed as per the Rules.
- (iv) 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.
- (v) 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.
- (vi) 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.
- (vii) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.

8. **General Conditions:**

- (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.
- (ii) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.
- (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.

- (b) No excavation or dumping shall be allowed on wetlands, forest areas or other ecologically valuable or sensitive locations.
- (c) Excavation work shall be done in close consultation with the Soil Conservation and Watershed Development Agencies working in the area, and
- (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 ground water.
- (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.
- (v) Adequate precautions shall be taken during transportation of the construction material so that it does not affect the environment adversely.
- (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 measures and other environmental protection activities.
- (vii) Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (viii) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
- (ix) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
- (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.

- (xi) Andhra Pradesh Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.

9. 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.

10. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

11. 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 <http://www.envfor.nic.in>. 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.

12. 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.

13. Any appeal against this Environmental Clearance 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.

14. 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.

15. The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (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.

16. 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.

17. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

(Bharat Bhushan)
Director (IA-III)

Copy to:

- (1) The Secretary, Department of Environment, Government of Andhra Pradesh, Secretariat, Hyderabad.
- (2) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110 032.
- (3) The Chairman, Andhra Pradesh Coastal Zone Management Authority and Principal Secretary, Environment, Forests and Sciences and Technology, Government of Andhra Pradesh, Hyderabad.
- (4) The Member Secretary, Andhra Pradesh Pollution Control Board, Hyderabad.
- (5) The CCF, Regional Office, Ministry of Environment & Forests(SZ), Kendriya Sadan, IVth floor, E&F wings, 17th Main Road, Koramangala II Block, Bangalore - 560 034.
- (6) IA - Division, Monitoring Cell, MOEF, New Delhi - 110003.
- (7) Guard file.

(Bharat Bhushan)
Director (IA-III)

PROJECT NAME		: Development of Port at Gangavaram near Visakhapatnam by Adani Gangavaram Port Limited 5 th Berth
LOCATION		: Dibbapalem Village, Pedagatryada, Andhra Pradesh
EC & CRZ FILE NO.		: 10-14/2009-IA.III
EC DATE		: 19 th March, 2010.
COMPLIANCE PERIOD		01 ST OCTOBER 2025 TO 31 ST MARCH 2026
SI.NO.	CONDITION	COMPLIANCE
A. Specific Conditions		
1.	No construction work other than those Permitted in Coastal Regulation Zone Notification, 1991 shall be carried out in Coastal Regulation Zone area.	Complied. Phase-I construction was completed by August, 2008.
2.	Sewage shall be treated and the Treatment Facility shall be provided in Accordance with the Coastal Regulation Zone Notification, 1991. The disposal of Treated water shall confirm the regulation of Andhra Pradesh State Pollution Control Board.	Complied. AGPL established and operating STP of 30 KLD and 5 KLD capacities. Additionally, 15 KLD capacity of STP has completed construction and commissioning is under progress, to treat the sewage generated from the utilities. The treated water is being used for the dust suppression / green belt development.
3.	Oil spills if any shall be properly collected and disposed as per the Rules.	Being complied.
4.	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. AGPL demarcated the approach channel with lighted buoys for safe navigation and patrolling boats are continuously watching the channels and fishermen are well informed.
5.	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.
6.	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. ➤ For the FY 2025-26 AGPL has completed plantation of 42,923 with a height of 10 m. ➤ As of now AGPL developed plantation with more than 5.5 Lakhs saplings in about 320 acres within the Port premises. ➤ Maintaining 50 m width of green belt towards North and North-West direction with special emphasis towards habitation i.e., HB Colony,

		Peda Gantyada, Venkannapalem, Kongapalem & Gangavaram village. ➤ Maintaining thick greenbelt at Port Approach Road, Railway track side and at Truck parking area along the wind breaking wall towards HB Colony. ➤ Maintaining exclusive nursery to maintain and improve the green belt on continuous basis.
7.	The funds earmarked for the environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Complied.
B. General Conditions		
1.	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. No construction work was going on presently
2.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied.
3.	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. b. No excavation or dumping shall be allowed on wetlands, forest areas or other ecologic valuable or sensitive locations. c. Excavation work shall be done in close consultation with the Soil Conservation and Watershed Development Agencies working in the area, and d. Construction spoils including bituminous material and other hazardous materials must not be allowed to contaminate watercourses and the dumpsites for such materials must be secured so that they shall not leach into the ground water.	Complied. No wet lands/forests area exists within in the port. Complied. Complied
4.	The construction material shall be obtained only from approved quarries. In case new quarries are to be opened, specific approvals	Complied.

	from the competent authority shall be obtained in this regard.	
5.	Adequate precautions shall be taken during transportation of the construction material so that it does not affect the environment adversely.	Complied.
6.	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 measures and other environmental protection activities.	Complied.
7.	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Noted the condition & being complied.
8.	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted the condition & being complied.
9.	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the MoEF.	Noted the condition & being complied.
10.	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.
11.	Andhra Pradesh Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office / Tahasildar's office for 30days.	Complied.
9.	These stipulations would be forced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the Amendments and rules made thereafter.	Noted the condition & being complied.
10.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest	Being complied.

	Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	
11.	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 in forming that the project has been accorded Environmental Clearance and copies of clearance letters are available with the APPCB and may also be seen on the website of the MoEF at http://www.envfor.nic.in . 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.	Complied.
12.	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.	Noted the condition & being complied.
13.	Any appeal against this Environmental Clearance 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.	Noted the condition & being complied.
14.	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 web site of the company by the proponent.	Complied.
18.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall up-date 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 levels namely; SPM, RSPM, SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sectorial parameters, indicated for the project shall be monitored and displayed at a convenient	Complied.

	location near the main gate of the company in the public domain.	
19.	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.	Complied. - Submitted Self-certified half-yearly compliance report for the period from April 2025 to September 2025 through ecompliance-ap@gov.in web site. Also uploaded through Parivesh portal. - Submitting NABL-3rd party certified half yearly compliance report for the period from October-2025 to March-2026 through Parivesh portal.
20.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall, also be sent to the respective Regional Offices of MoEF by e-mail	Complied. - Submitting the Environmental Statement Form-V regularly to APPCB and RO, MoEF & CC - The latest Environment Audit Statement (FORM-V) submitted on 27.09.2025 for the FY 2024-2025 as attached Annexure.

**Environmental Clearance Order
& Compliance
Date: 07.02.2012**

F.No.11-91/2010-IA-III
Government of India
Ministry of Environment & Forests
(IA Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110 003.

Dated: 7th February, 2012.

To,
M/s Gangavaram Port Ltd,
Hansa Crest, 1st Floor,
Plot No. 62, Road No.1,
Jubilee Hills,
Hyderabad

Subject: Environment and CRZ Clearance for the development of Phase -II of Gangavaran Port, Visakhapatnam District, Andhra Pradesh by M/s Gangavaram Port Ltd.-Reg.

This has reference to letter No: GPL/EFS&T/014 dated 10.08.2010 seeking prior Environmental and CRZ Clearance for the above project under the EIA Notification - 2006 and Coastal Regulation Zone (CRZ) Notification, 1991. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification - 2006 and Coastal Regulation Zone Notification, 1991/2011 on the basis of the mandatory documents enclosed with the application viz., the Questionnaire, recommendation of State Coastal Zone Management Authority, EIA, EMP and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meeting held on 17th -19th August, 2011.

2. It is interalia, noted that the proposal involves development of Phase -II of Gangavaran Port, Visakhapatnam District, Andhra Pradesh. Gangavaram Port is developed as all weather multipurpose deepest port in India to handle super cape size vessels located on the East coast of India approximately 15 km south of Visakhapatnam Port and acting like gateway port to the existing and green field projects in the hinterland. At Gangavaram Port presently five berths are under operation to handle variety of cargoes such as Coal / Iron ore, Fertilizer, Limestone, Food Grains, and Steel Products etc. It is proposed to expand the port facilities from 16.54 MTPA to 41 MTPA to cater for future cargo within the existing port premises at Gangavaram Village, Pedagantyada mandal, Visakhapatnam District, Andhra Pradesh. The existing Project already received Environmental Clearance under EIA & CRZ notifications vide letter No.10-14/2009-IA.III dt.19th March, 2010. The following facilities proposed to be planned at Gangavaram port to handle the above mentioned future traffic up to year 2015, (i) One mechanized coal berth to handle cape



size coal carrier and (ii) Three multipurpose berths to handle multipurpose/General cargo.

3. Dredging to the extent of 4.88 million cubic meters will be carried out in front of the berths and near the turning basin. The dredged material will be pumped onshore for reclamation of the port backup areas. The other associated facilities like Buildings, Storage, roads, railways, water, power, drainage, sewage, pollution control including Dust suppression system, greenery fire fighting system etc. are planned to be provided.

4. Additional Rail sidings will be developed within port premises to take on additional cargo evacuation. No additional land requirement as sufficient land is available within existing port premises. The water requirement will be 1000 m³/day in addition to existing 600 m³/day of Phase I and will be sourced from Visakha International Water Supply Company. The Power requirement will be 5 MVA in addition to 9 MVA of existing Phase - I and will be sourced from APTRANSCO. Adequate dust suppression measures will be installed in addition to existing sprayers. Zero waste water discharge shall be maintained by utilising treated waste water for dust suppression & green belt development. Total development green belt is 106 acres and further 40 acres will be developed before January, 2011. The total cost of the project is Rs. 800 crores.

5. ToR for the project was finalized by the EAC in its 94th Meeting held on 30 November, 1st -2nd December, 2010. Public Hearing was conducted on 12.05.2011 near the main Gate of the Port, Gangavaram.

6. The Andhra Pradesh Coastal zone Management Authority has recommended the project vide letter dated 3687/CZMA/2011 dated 27.07.2011.

7. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the grant of Environmental and CRZ Clearance for the project. Accordingly, the Ministry hereby accord necessary Environmental Clearance for the above project as per the provisions of Environmental Impact Assessment Notification - 2006 and Coastal Regulation Zone Notification, 2011, subject to strict compliance of the terms and conditions as follows:

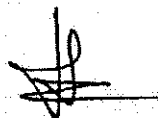
8. SPECIFIC CONDITIONS :

(i) "Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.

(ii) As the development is conceived in several stages to reach the

full designed/planned capacity of the port, it shall be necessary to prepare and put in place a master EMP for the full scale development and fit in the phase-wise creations as modules forming part of the entire system. This shall facilitate a harmonious planning of environmental requirements to be put in place in a phased manner in accordance with preset goal and objective as outlined in the overall environmental plan for the port in its totality.

- (iii) The 4.88 million cum of dredged material shall be used for shore reclamation subject to its suitability. Any unsuitable/excess dredged material shall be disposed at dumpsite. Port shall identify suitable dumping spot for disposal of unsuitable material offshore on the basis of appropriate modeling study.
- (iv) The green belt area proposed is about 10 % only. Proponent shall enhance the area of green belt. Width of the green belt shall be minimum 50 m. The present stage of development of 40 acres of land for green belt which should have been completed before January 2011 shall be reported to the Ministry together with the programme adopted for implementation.
- (v) There will be a quantum jump of port traffic from the existing level of 16.54 MTPA to 41 MTPA after completion of the proposed developments and this is likely to register further leap when full scale planned capacity is reached later; it is therefore necessary even now to plan appropriate measures to ensure that will be no mismatch between the planned capacity and the external logistic requirements in the overall transportation chain/network commensurate with the demand. A long range vision would be necessary to achieve a smooth flow of cargo traffic both within and outside port limits.
- (vi) The Company shall enhance the allocation for the CSR activities from 2.5 to 5 % of the total cost and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.
- (vii) All the recommendation of the EMP and DMP shall be complied with letter and spirit.
- (viii) Construction activity shall be carried out strictly as per the provisions 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.



- (ix) The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.
- (x) It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.
- (xi) 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.
- (xii) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.

9. GENERAL CONDITIONS:

- (i) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.
 - (ii) Full support shall be extended to the officers of this Ministry/Regional Office at Bengaluru by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.
 - (iii) A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bengaluru regarding the implementation of the stipulated conditions.
 - (iv) Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
 - (v) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
 - (vi) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
 - (vii) 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.

(viii) A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.

(ix) State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.

10. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and ELA Notification 1994, including the amendments and rules made thereafter.

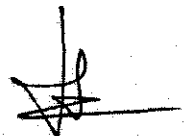
11. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

12. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. 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 Bangaluru.

13. 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.

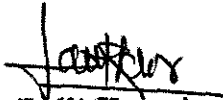
14. Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.

15. 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.



16. 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.

17. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.


(Lalit Kapur)
Director(IA-III)

Copy to:

- 1 The Chairman, Andhra Pradesh Coastal Zone Management Authority, IAS, Special Chief Secretary to Government, E.F.S & T. Department Government of Andhra, Pradesh Secretariat, Hyderabad-500 002
- 2 The Chairman, CPCB, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32.
- 3 The Member Secretary, Andhra Pradesh Coastal Zone Management Authority, IAS, Special Chief Secretary to Government, E.F.S & T. Department Government of Andhra, Pradesh Secretariat, Hyderabad-500 002
- 4 The Chairman, Andhra Pradesh Pollution Control Board, Paryarana Bhawan, A-III, Industrial Area , Sanathnagar, Hyderabad - 500 018, Andhra Pradesh.
5. The C.C.F., Regional Office (SZ), Ministry of Environment & Forests, Kendriya Sadan, IV Floor, Environment & Forests Wings, Office (SZ), 7th Main Road, II Block, Koramangala, Bangalore - 560 034.
6. Guard File.
7. Monitoring Cell.

(Lalit Kapur)
Director(IA-III)

PROJECT NAME		: Development of Port at Gangavaram near Visakhapatnam by Adani Gangavaram Port Limited Phase-II
LOCATION		: Dibbapalem Village Pedaganryada Andhra Pradesh
EC & CRZ FILE NO.		: 11-91/2010-IA-III
EC DATE		: 07.02.2012
COMPLIANCE PERIOD		01 ST OCTOBER 2025 TO 31 ST MARCH 2026
SI.NO.	CONDITION	COMPLIANCE
A. Specific Conditions		
1.	"Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.	Complied. AGPL has obtained Consent to Establishment (CTE) from SPCB vide order number: APPCB/ VSP/VSP/113/ CFE/HO/2012-3923 dated 02.03.2012 and copy of the same was submitted to Ministry's Regional Office, vide letter no. GPL/MoEF/021 dated 12.05.2012.
2.	As the development is conceived in several stages to reach the full designed/planned capacity of the port, it shall be necessary to prepare and put in place a master EMP for the full scale development and fit in the phase wise creations as modules forming part of the entire system. This shall facilitate a harmonious planning of environmental requirements to be put in place in a phased manner in accordance with present goal and objective as outlined in the overall environmental plan for the port in its totality.	Complied. The Cargo based master plan will be finalized during the future expansion based on market need. Submitted the EMP for cargo handling capacities of 60.95 MMTPA in EIA report
3.	The 4.88 million cum of dredged material shall be used for shore reclamation subject to its suitability. Any unsuitable/ excess dredged material shall be disposed at dumpsite. Port shall identify suitable dumping spot for disposal of unsuitable material offshore on the basis of appropriate modelling study.	Complied. The dredge material was used for filling low lying land within port area for shore reclamation purpose and same work was completed.
4.	The green belt area proposed is about 10 % only. Proponent shall enhance the area of green belt. Width of the green belt shall be minimum 50 m. The present stage of development of 40 acres of land for green belt which should have been completed before January 2011 shall be reported to the Ministry together with the programme adopted for implementation.	Complied. For the FY 2025-26 AGPL has completed plantation of 42,923 with a height of 10 meters.

5.	There will be a quantum jump of port traffic from the existing level of 16.54 MTPA to 41 MTPA after completion of the proposed developments and this is likely to register further leap when full scale planned capacity is reached later; it is therefore necessary even now to plan appropriate measures to ensure that will be no mismatch between the planned capacity and the external logistic requirements in the overall transportation chain/network commensurate with the demand. A long range vision would be necessary to achieve a smooth flow of cargo traffic both within and outside port limits.	Complied. AGPL has provided the following infrastructure facilities to cater to the transport needs & for smooth cargo evacuation of 40.95 MMTA • Provided adequate railway sidings • Provided second railway line • Silos and In-motion wagon loader are established for faster evacuation
6.	The Company should enhance the allocation for the CSR activities from 2.5 to 5 % of the total cost and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.	Complied. AGPL had submitted the action plan to MoEF, Chennai on 04/09/2015 vide Lr. No. GPL/MoEF/024.
7.	All the recommendation of the EMP and DMP shall be complied with letter and spirit.	Being Complied. The Port has been meeting the recommendations of EMP and DMP.
8.	Construction activity shall be carried out strictly as per the provisions 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.	Complied. There is no construction activity other than permitted activity according to the CRZ clearance.
9.	The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.	Complied.
10.	It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.	Complied.
11.	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.
12.	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Complied.
General Conditions:		

1.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Being complied.
2.	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 measures and other environmental protection activities.	Being complied.
3.	A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.	Being complied.
4.	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Being complied.
5.	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Being complied.
6.	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to MoEF.	Being complied.
7.	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied.
8.	A copy of the clearance letter shall be marked to concerned Panchayat /local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	Complied. The EC & CRZ Clearance was displayed in local Panchayat and Mandal offices on 01.03.2012 and advertised in newspapers on 27.02.2012 Vaartha (Telugu) & The New Indian Express (English). Annexure.
9.	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/ Tehsildar's office for 30 days.	Complied.
10.	These stipulations would be enforced among others under the provisions of Water (Prevention and control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981. The Environment	Being complied.

	(Protection) Act, 1986, the public liability (Insurance) Act 1991 and EIA notification 1994 including amendments and rules made thereafter.	
11.	All other statutory clearances such as the approval for storage of diesel from chief controller of explosive, Fire department, Civil aviation department, Forest conservation Act 1980 and Wild life (protection) Act 1972 etc. Shall be obtained, as applicable by project proponents from the respective competent authorities.	The provisions of Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 is not applicable for the Port project, as per the Lr. No. Rc.No.453/2004 dated 19/11/2004.
12.	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the state pollution control boards and may also be seen on the website of the Ministry of Environment and Forests at http://www.envfor.in . 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, Bangalore.	Complied.
13.	Environment Clearance is subject to final order of the honourable supreme court of India in the matter of Goa foundation Vs Union of India in writ petition (Civil) number 460 of 2004 as may be applicable to this project.	Being complied.
14.	Status of compliance to the various stipulated Environmental conditions and Environmental safe guards will be uploaded by the project proponent in its website.	Being complied.
15.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishat/ Municipal Corporation, urban local body, 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.
16.	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	Being complied.

	to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	
17.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the Company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail. MoEF by e-mail.	Being complied.

**Amendment in EC & CRZ Clearance Order
& Compliance
Date: 24.12.2021**



**Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)**

To,

The Vice President Environment

M/S. GANGAVARAM PORT LIMITED

M/s.Gangavaram Port Limited Peda Gantyada Mandal, Visakhapatnam
District,,Visakhapatnam,Andhra Pradesh-530044

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity
under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC)
in respect of project submitted to the Ministry vide proposal number
IA/AP/NCP/237816/2021 dated 10 Nov 2021. The particulars of the environmental
clearance granted to the project are as below.

1. EC Identification No.	EC21A033AP141550
2. File No.	10/51/2021-IA.III
3. Project Type	Expansion7
4. Category	A
5. Project/Activity including Schedule No.	7(e) Ports, Harbours
6. Name of Project	Environment & CRZ Clearance under Clause 7 (ii) of EIA Notification, 2006 and amendments thereafter – Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernisation/mechanisation at Gangavaram Port
7. Name of Company/Organization	M/S. GANGAVARAM PORT LIMITED
8. Location of Project	Andhra Pradesh
9. TOR Date	N/A

The project details along with terms and conditions are appended herewith from page
no 2 onwards.

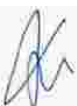
Date: 24/12/2021

(e-signed)
Amardeep Raju
Scientist E
IA - (INFRA-1 sector)

*Note: A valid environmental clearance shall be one that has EC identification
number & E-Sign generated from PARIVESH.Please quote identification
number in all future correspondence.*

This is a computer generated cover page.

2. Gangavaram Port obtained Environmental and CRZ Clearance for a cargo handling capacity of 16.54 MTPA for the construction of four berths (dry bulk cargo-1, Fertilizer/limestone-1, container terminal-1 and break/multipurpose-1) and one exclusive berth for port crafts besides providing warehousing facilities and transit sheds vide EC No. 10-3/2005-IA.III dated 11.03.2005. Subsequently for development of fifth berth, GPL obtained EC & CRZ Clearance vide order F.No.10-14/2009-IA.III dated 19.03.2010.
3. EC & CRZ clearance for Phase – II was obtained vide Order F.No.11-91/2010-IA-III, dated 07.02.2012 with capacity augmentation from 16.54 MTPA to 40.95 MTPA and four additional berths (one mechanized coal berth to handle cape-size coal carrier and three multipurpose berths), for which, environmental public consultation was held on 12.05.2011 as per EIA notification, 2006 (as amended).
4. At present stage, Gangavaram port is operating with nine berths and provides cargo handling services for a variety of bulk and break bulk including coal, iron ore, Multi Cargo (Agri products, Slag, Lime stone, Steel products etc.), Fertilizer, Industrial Raw Materials such as Gypsum, Aluminum Ingots, Gypsum etc. During the last six years' cargo handling has been increased upto 34.45 MTPA. By increasing the operational efficiency of existing port infrastructure without any marine infrastructure development, cargo handling capacity can be enhanced from approved capacity of 40.95 MTPA to 60.95 MTPA.
5. An application has been made by GPL for environmental and CRZ clearance under Clause 7(ii) for prior Environmental Clearance (EC) under Expansion or Modernization or Change of product mix in existing projects, of EIA notification, 2006 and amendments thereafter as:
- No additional marine infrastructure such as berths, capital dredging, breakwater, reclamation is proposed. No additional land is proposed as sufficient land is available within already approved port boundary of 1800-acre area,
 - No CRZ -I (A) area present within port area as well as port limit and only material handling systems such as cranes and permissible back-up infrastructure will be created within CRZ - II area of port area.
 - Development /modernization of port back-up area is majorly in non CRZ area and partially falling in CRZ-II area of approved 1800-acre area. CRZ from 1 application along with EIA report submitted to APCZMA and recommendation from APCZMA was obtained vide Letter No. 338/CRZ/Port/2021 dated 24/10/2021.
 - No addition of any new cargo type in the current proposal and only increase in cargo handling capacity through modernization/mechanization of approved cargo profile (type) in the current proposal. Approximately 70 % of proposed 20 MMTPA, 7.75 MTPA is non-dusty cargo (container, steel products, agri-products etc.)
 - Modernization/mechanization of port will lead to reduction in carbon emissions due to increase in cargo evacuation through railway and up-gradation as well as addition of material handling systems including covered conveyor etc. will reduce inter-carting.
6. Public consultation has been already carried out for 9 berths and 1800-acre area as per EIA Notification, 2006 and amendments thereafter. Points raised during public hearing such as providing jobs, dust control measures, greenbelt development and CSR activities like support on health, education medical were addressed properly and there is no major grievance from public/regulatory authorities.



7. Following are the Cargo Handling Capacity through Modernization:

S. No.	Name of the cargo	Existing Cargo (MTPA) (Consented Quantity)	Additional Cargo (MTPA)	Total Cargo (MTPA)
1	Containers	0.25	7.75	8.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Lime Stone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	6.20	6.50	12.70
3	Coal	25.00	3.25	28.25
4	Iron ore	3.00	2.50	5.50
5	Fertilizer	2.50	0	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	0	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50	0	0.50

8. The proposed project falls under 7(e), Category-A, Ports, Harbours as per EIA Notification 2006. The proposed project is for expansion under Clause 7(ii) of EIA Notification, 2006 (as amended). Total investment/cost of the project is about Rs 5055 Crores.

9. Geo-coordinates of the project site is as following:

From: 17°39'39.162"N	To: 17°37'41.643"
From: 83°14'8.411" E	To: 83°15'44.670"E

10. Land use /Land breakup of the proposed project site is as following:

Sl. No.	LU/LC	Area (Ha)	Percentage %
1	Built up - Port	314.69	43.2
2	Vegetated/Open Area	359.95	49.41
3	Rocky Area	40.46	5.56
4	Open Scrub land	11.82	1.62
5	Water Reservoir	1.51	0.21
Total		728.43	100

11. Terrain and topographical features: Eastern boundary of the port ground level varies from 0.8 m to 1.0 m and towards the western boundary of port location ground levels are higher than 2.0 m with respect to MSL.

12. Water requirements: The total water requirement during construction period is 1.0 MLD. The water required for proposed expansion/modernisation activity is 378 KLD which

will be sourced from treated water of STP (10 KLD) and remaining 368 KLD shall be sourced from VISCOW. Permission for withdrawal of 1200 KLD from VISCOW is available and additional water requirement application is filed to VISCOW.

13. Waste Management: It is estimated that domestic solid waste generated will be ~3.6 T/m. Discarded material and plastic material waste is estimated to be 0.25 T/m. The solid waste sludge from STP is ~ 5.5 kg/day. Used oil, spent oil, Wastes/Residue containing oil, Oil soaked rags, cotton waste, discarded containers, barrels & used battery will be collected and disposed to approved vendors and same will be continued to proposed project. Hazardous wastes generated at the port shall be disposed-off through authorized vendors duly adhering under guidelines of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and its amendment.

14. STP Details: The sewage generated at the project site will be treated in existing STP. GPL is operating two STPs of capacity 30 KLD near to harbour gate location beside stores and 5 KLD near Main gate. Another 15 KLD STP is proposed to meet the modernization/mechanisation plan. Treated water will be utilized for green belt.

15. Tree cutting: Clearance of vegetation shall be carried out as per project requirement. Clearance of scrub vegetation with few tree species such as *Phoenix sylvestris* (Etha), *Acacia Nilotic* (Nalla tumma) and *Borassus flabellifer* (Thadi) is envisaged near the proposed backup area.

16. Green Belt development: Greenbelt/area is developed in an extent of 318.21 Acres within the port range covering periphery of yards, roads, buildings and along conveyor belt. In total, Greenbelt has been developed more than 10% of the total area and 50m width in the boundary of the port.

17. CRZ details: The project falls majorly in Non CRZ area and partly falling in CRZ-II as per approved CZMP map (Map Nos. AP 114,115 and 116) and the activities proposed within CRZ area are permissible as per CRZ notification, 2011. No marine side construction activity is proposed under this modernization. APCZMA recommendations obtained vide Letter no. 338/CRZ/Port/2021 dated 24/10/2021.

18. Foreshore details: No additional marine infrastructure such as berths, breakwater, capital dredging and reclamation is proposed.

19. Employment potential: Total man power requirement during the construction phase is approximately 200 to 250 workers. During operation phase, direct employment of 100 and indirect employment of 500 workers are envisaged.

20. Benefits of the project: The proposed expansion project will have major positive impact on Induced development, Improved Socio-economic conditions, Quality of Life, Employment Opportunities, Revenue Generation, Corporate Social Responsibility etc.

21. Details of court cases: No court cases are pending against the proposed project.

22. The EAC based on the information submitted and clarifications provided by the project proponent and detailed discussions held on all the issues in its 281st meeting on 24th - 25th November, 2021, recommended the project for grant of environmental and CRZ clearance under clause 7(ii) of EIA Notification, 2006, with stipulated specific conditions along with other Standard EC Conditions.



23. 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 Clearance for the *“Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernisation/mechanisation at Gangavaram Port, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh by M/s Gangavaram Port Limited”* under Clause 7(ii) of 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.

SPECIFIC CONDITIONS

- i. No construction activity beyond the existing layout area shall be undertaken for the project. Only modernization/mechanization as envisaged in the present proposal shall be permissible.
- ii. Erosion of shoreline has been noted at the project location and adjoining areas due to existing port and hence Shore Management plan and beach nourishment plan need to be prepared and an implementation report needs to be submitted to the Ministry as a part of 6 monthly compliance report. Beach Nourishment strategy has to be developed with the help from a reputed scientific institute specialized in the subject.
- iii. All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide letter No 338/CRZ/Port/2021 dated 24th October 2021 shall be complied with.
- iv. Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- v. Necessary approvals to be taken during implementation and commissioning from statutory bodies concerned.
- vi. 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.
- vii. Spillage of fuel / engine oil and lubricants from the site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.
- viii. Necessary arrangements for the treatment of the effluents and solid wastes/ facilitation of reception facilities under MARPOL 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. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be complied with.

- ix. Necessary arrangement for general safety and occupational health of people should be done in letter and spirit.
- x. The dust suppression measures for the proposed increase in the cargo should be ensured through mechanized handling of cargo and conveyance.
- xi. The waste water from oil spillage or cargo should be treated and disposed.
- xii. 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 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

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. PM₁₀ and PM_{2.5} in reference to PM emission, and SO₂ and NO_x in reference to SO₂ and NO_x 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.
- (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 offices and project 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) Dredging shall not be carried out during the fish breeding and spawning seasons.
- (ii) Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.
- (iii) The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.
- (iv) 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.
- (v) 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.
- (vi) 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.
- (vii) The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.

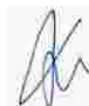


IX. Public hearing and human health issues:

- (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) In case of repair of any old vessels, excessive care shall be taken while handling Asbestos & Freon gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSDF.
- (iv) 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.
- (v) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- (vi) 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.
- (vii) Occupational health surveillance of the workers shall be done on a regular basis.

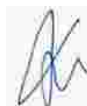
X. Environment Responsibility:

- (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 Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- (vi) The criteria pollutant levels namely; PM_{2.5}, PM₁₀, SO₂, NO_x (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 project 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 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.
- (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.

22. This issues with the approval of the Competent Authority.



(Amardeep Raju)
Scientist-E

Copy to:

1. The Principal Secretary, Department of Environment, Forest, Science & Technology, Government of Andhra Pradesh, Hyderabad, A.P.
2. The Member Secretary, AP Pollution Control Board, Chalamalavaii Street, Kasturibaipet, Vijayawada - 520 010.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi -32
4. The Additional Principal Chief Conservator of Forests (C), Aranya Bhavan, K.M. Munshi Road, Nagarampalem, Guntur-522 004, Andhra Pradesh.
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
6. Guard File/Record File
7. Notice Board.



(Amardeep Raju)
Scientist-E

Signature Not Verified

Digitally signed by Amardeep Raju
Scientist E
Date: 12/24/2021 11:45:17 AM

PROJECT NAME		: Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernization / mechanization at Adani Gangavaram Port
LOCATION		: Peda Gantyada Mandal, Visakhapatnam District, Visakhapatnam, Andhra Pradesh
EC & CRZ FILE NO.		: 10/51/2021-IA.III
EC IDENTIFICATION NO.		: EC21A033AP141550
EC DATE		: 24/12/2021
SI.NO.	CONDITION	COMPLIANCE
A. Specific Conditions		
1.	No construction activity beyond the existing layout area shall be undertaken for the project. Only modernization/ mechanization as envisaged in the present proposal shall be permissible.	Complied. Not started any construction activity in the existing layout area.
2.	Erosion of shoreline has been noted at the project location and adjoining areas due to existing port and hence Shore Management plan and beach nourishment plan need to be prepared and an implementation report needs to be submitted to the Ministry as a part of 6 monthly compliance report. Beach Nourishment strategy has to be developed with the help from a reputed scientific institute specialized in the subject.	Complied.
3.	All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide letter No 338/CRZ/Port/2021 dated 24th October 2021 shall be complied with.	Complied.
4.	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Complied.
5.	Necessary approvals to be taken during implementation and commissioning from statutory bodies concerned.	Being Complied.
6.	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.	Being Complied.

7.	Spillage of fuel / engine oil and lubricants from the site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.	Being Complied.
8.	Necessary arrangements for the treatment of the effluents and solid wastes/ facilitation of reception facilities under MARPOL 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. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be complied with.	Being Complied.
9.	Necessary arrangement for general safety and occupational health of people should be done in letter and spirit.	Complied.
10.	The dust suppression measures for the proposed increase in the cargo should be ensured through mechanized handling of cargo and conveyance.	Complied.
11.	The waste water from oil spillage or cargo should be treated and disposed.	Being complied.
12.	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 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.	Noted and will comply with the condition.

STANDARD CONDITIONS:

I. Statutory compliance:

1.	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	AGPL has completed Phase – I & II construction as per the provision under CRZ Notification. 1991 as amended subsequently and project is in operation from Aug 2008.

	Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	
2.	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.	Complied.
3.	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.	Being Complied.

II. Air quality monitoring and preservation:

1.	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.	Complied.
2.	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.	Being complied.
3.	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.
4.	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 a port facility, no blasting activities are involved.
5.	The Vessels shall comply the emission norms prescribed from time to time.	Being complied.
6.	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,	Being complied. AGPL permitted to operate the following capacities of DG sets 3 X 320 KVA, 3 X 1250 KVA 1 X 800 KVA, 2 X 380 KVA, 1 X 200

	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.	KVA DG Sets which are being used for emergency power backup.
7.	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.	Complied.
III. Water quality monitoring and preservation:		
1.	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.	Complied.
2.	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.	Complied.
3.	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.	Complied.
4.	Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.	Noted and will comply with the condition.
5.	The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.	There is no intake and withdrawal of sea water is involved in the Port operations.

6.	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.	Being Complied.
7.	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.	Being Complied.
8.	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.	Being Complied. AGPL established and operating STP of 30 KLD and 5 KLD capacities. Additionally, 15 KLD capacity of STP has completed construction and commissioning is under progress, to treat the sewage generated from the utilities. The treated water is being used for the dust suppression / green belt development.
9.	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.	Complied.
10.	No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.	Complied.
11.	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.	Noted the condition.

IV. Noise monitoring and prevention:

1.	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.	Being complied.
2.	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.	Being complied.
3.	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as	Being complied. AGPL permitted to operate the following capacities of DG sets 3 X 320 KVA, 3 X 1250 KVA 1 X 800 KVA, 2 X 380 KVA, 1 X 200

	mitigation measures for noise impact due to ground sources.	KVA DG Sets which are being used for emergency power backup.
4.	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.
V. Energy Conservation measures:		
1.	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;	Noted and will comply with the condition to the extent possible.
2.	Provide LED lights in offices and project areas.	Noted LED lights are installed in our offices and operational areas. We will comply with the condition as per applicability.
VI. Waste management:		
1.	Dredged material shall be disposed safely in the designated areas.	Being complied.
2.	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.	Complied.
3.	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.
4.	The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.	Being complied.
5.	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.
6.	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.	Complied.
7.	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.

8.	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.

VII. Green Belt:

1.	Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines.	320 Acres green belt has been developed and we will comply with condition as per applicability.
2.	Top soil shall be separately stored and used in the development of green belt.	Being complied.

VIII. Marine Ecology:

1.	Dredging shall not be carried out during the fish breeding and spawning seasons.	Complied.
2.	Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.	Complied.
3.	The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.	Complied.
4.	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.	Noted and compiled. We will comply with the condition as per applicability.

5.	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.	Complied.
6.	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.
7.	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.

IX. Public hearing and human health issues:

1.	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.	Being complied.
2.	Workers shall be strictly enforced to wear personal protective equipment 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.
3.	In case of repair of any old vessels, excessive care shall be taken while handling Asbestos & Freon gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSDF.	Being complied.

4.	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.
5.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Being complied.
6.	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.	Being complied.
7.	Occupational health surveillance of the workers shall be done on a regular basis.	Being complied.

X. Environment Responsibility:

1.	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.
2.	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.	Complied.
3.	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	Being Complied.

	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.	
4.	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Complied.
XI. Miscellaneous:		
1.	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.	Complied.
2.	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.	Complied.
3.	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.
4.	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.
5.	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.	Complied.
6.	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	Being Complied.

	convenient location near the main gate of the company in the public domain.	
7.	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.	AGP is yet to start implementation of cargo enhancement project.
8.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Noted and will comply with the condition.
9.	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.	Noted and will comply with the condition.
10.	No further expansion or modifications In the project shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Noted and we will comply with the condition.
11.	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.	Noted and will comply with the condition.
12.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory 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.	Noted and will comply with the condition.
13.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted and will comply with the condition.
14.	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.	Noted and will comply with the condition.

15.	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.	Noted and will comply with the condition.
16.	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.	Noted and will comply with the condition.

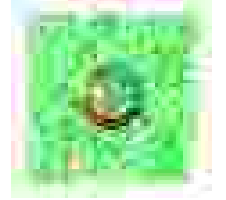
**Amendment in EC & CRZ Clearance Order
& Compliance
Date: 19.11.2025.**



File No.: 10/51/2021-IA.III
Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Dated 19/11/2025



To,

Anil Kumar Trivedi
ADANI GANGAVARAM PORT LIMITED
ADANI CORPORATE HOUSE Shantigram, Near Vaishnodevi circle, SG Highway,
Khodiyar, Ahmedabad, AHMADABAD, GUJARAT, 382421
environment.agpl@adani.com

Subject: Amendment in EC & CRZ Clearance for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited located at Visakhapatnam, Andhra Pradesh by M/s Adani Gangavaram Port Limited- Amendment under Clause 7(ii) regarding.

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/AP/INFRA1/542139/2025 dated 07/08/2025 for grant of an amendment in prior Environmental Clearance (EC) to the project under the provision of the EIA Notification 2006-and as amended thereof.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC25A3501AP5181140A
(ii) File No.	10/51/2021-IA.III
(iii) Clearance Type	Amendment in EC
(iv) Category	A
(v) Schedule No./ Project Activity	7(e) Ports, harbors, breakwaters, dredging
(vi) Sector	INFRA-1
(vii) Name of Project	Amendment in EC & CRZ Clearance for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited
(viii) Location of Project (District, State)	VISAKHAPATANAM, ANDHRA PRADESH
(ix) Issuing Authority	MoEF&CC
(x) EC Date	06/11/2025
(xi) Applicability of General Conditions	NO

(xii) Status of implementation of the project

3. The proposal is for amendment in EC & CRZ Clearance under Clause 7(ii) of EIA Notification, 2006, for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited located at Visakhapatnam, Andhra Pradesh by M/s Adani Gang Avaram Port Limited.

4. The project/activity is covered under the category 'A' of item 7(e), i.e., 'Ports, harbours, breakwaters, dredging' of the schedule to the EIA Notification, 2006, and its subsequent amendments.

5. Gangavaram Port obtained Environmental and CRZ Clearance for a cargo handling capacity of 16.54 MTPA for the construction of four berths (dry bulk cargo-1, Fertilizer/limestone-1, container terminal-1 and break/multipurpose-1) and one exclusive berth for port crafts besides providing warehousing facilities and transit sheds vide EC No.10-3/2005-IA.III dated 11.03.2005. Subsequently for development of fifth berth, GPL obtained EC & CRZ Clearance vide order F.No.10-14/2009-IA.III dated 19.03.2010. Further, EC & CRZ clearance for Phase – II was obtained vide letter no.11-91/2010-IA-III, dated 07.02.2012 with capacity augmentation from 16.54 MTPA to 40.95 MTPA and four additional berths (one mechanized coal berth to handle cape-size coal carrier and three multipurpose berths), for which, environmental public consultation was held on 12.05.2011 as per EIA notification, 2006 (as amended). Further, "EC and CRZ clearance for Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernisation/mechanisation at Gangavaram Port, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh by M/s Gangavaram Port Limited" under Clause 7(ii) of EIA Notification, 2006 (as amended) and CRZ Notification 2011 was obtained from the Ministry vide letter no.10/51/2021-IA.III dated 24/12/2021.

6. Now AGPL has submitted the online application vide proposal no. IA/AP/INFRA1/542139/2025 dated 07/08/2025 under Clause 7(ii) of the EIA Notification, 2006 for amendment in EC and CRZ clearance granted by the Ministry vide letter no.10/51/2021-IA.III dated 24/12/2021 for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA and without increasing pollution load. The details of the existing and proposed cargo mix are as following:

S.No.	Name of the cargo	As per EC and CRZ clearance vide letter no. 10/51/2021-IA.III dated 24/12/2021 Approved Cargo Profile (MTPA)	Proposed Change in Cargo Profile (MTPA)	Remarks
1.	Iron ore	5.50	5.5	No change
2.	Coal	28.25	28.25	No change
3.	Multi-Purpose Cargo-Agri products, (Food grains in bags or bulk, Chic-peas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products	S. No.	11.70	Decreased by 1 MTPA

	(Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos			
4.	Containers	8.00	6.00	Decreased by 2 MTPA
5.	Fertilizer	2.50	2.50	No change
6.	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminium Ingots, Aluminium Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	3.50	No change
7.	Liquid cargo (Edible oil, caustic lye) Proposed - LPG, POL – class A, B & C etc. and non-hazardous liquid cargo etc.)	0.50	3.50	Liquid cargo handling capacity is proposed to rearrange to 3.5 MTPA to handle LPG, Butane, Propane, Propylene, POL – class A, B & C etc. and non-hazardous liquid cargo, edible oil and caustic lye.
Total		60.95	60.95	-

Out of 3.5 MTPA; POL of 2.4 to 2.8 MTPA capacity will be directly hand-over to the vendor through pipeline. Without any storage in the proposed project site, remaining amount of liquid cargo i.e., LPG, Butane and Propane will be stored in the tanks separately.

7. The CRZ map of 1:4000 scale were prepared by IRS, Anna University. The facilities proposed such as liquid cargo storage area and pipeline corridor is falling partly in CRZ II. The activities proposed within CRZ area are permissible as per CRZ Notification, 2011.

Description	CRZ – Classification	Area in Sq.m	Total Area in Sq.m
Proposed Liquid Pipeline Corridor	CRZ – II	8551.38	39850.48
	Outside CRZ	31299.1	
Proposed Liquid Storage Facility	CRZ – II	303.29	92796.82

	Outside CRZ	92493.53	

Andhra Pradesh Coastal Zone Management Authority (APCZMA) recommended the project vide Letter No. 609/CRZ/Proj/2024-326 dated 01-06-2025.

8. The Project Proponent has prepared an Environmental Impact Assessment (EIA) Report for the proposed amendment. It has been observed that, due to the revision in the cargo mix, the number of truck movements for multipurpose cargo and fertilizers will be reduced by approximately 35 trucks. Consequently, no additional tankers or trucks will be required as part of the proposed change in cargo mix. Furthermore, no marine-side development activities, including dredging, are envisaged. The handling of liquid cargo such as LPG, Butane, Propane, Propylene, and POL (Class A, B, and C) as well as non-hazardous liquids, can be undertaken at Berths No. 8 and 9—both of which are already developed for handling multipurpose cargo—by installing the requisite handling equipment and storage facilities.

9. Approved Facilities Vs Amendment in Environmental & CRZ Clearance

S.No	Attribute	Approved by MoEF&CC as per EC	Proposed Change in cargo profile	Remarks
1.	Cargo Capacity	60.95 MTPA	60.95 MTPA	No change
2.	Cargo type	Coal Iron ore Limestone Multipurpose cargo Containers Fertilizers Industrial raw material Liquid cargo (Edible oil, caustic lye)	Coal Iron ore Limestone Multi purpose cargo Containers Fertilizers Industrial raw material Liquid cargo (Edible oil, caustic lye, LPG, POL, class (A, B, C))	Change in cargo mix within approved 60.95 MTPA. Now AGPL would like to handle 3.5 MTPA of liquid cargo such as Liquid LPG and POL class A, B, C, edible oil and caustic lye.
3.	No.of Berths	Nine (9) (existing)	Nine (9) (existing)	No change
4.	Break waters	North: 803 m; South: 1750 m		No change
5.	Capital and Maintenance Dredging	No additional capital and maintenance dredging is envisaged		No change
6.	Reclamation	No reclamation	No reclamation	No change
7.	Navigation Channel	Length: 1700 m; Width: 200 m; Depth: -20.2 m CD		No change
8.	Turning circle	Diameter: 600 m; Depth: -19.5 m CD		No change
9.	Land area for cargo storage	1800 acres		No change, storage tanks proposed are within approved land Area
10.	Water	1658 KLD		No change

11.	Wastewater	Existing STP of 30 KLD, 5 KLD along with proposed 15 KLD STP will meet the generation of 2.4 KLD and reduction in multipurpose cargo will have reduction in sewage generation		No additional treatment facility required and existing STP will cater the generated Wastewater
12.	Solid waste			
	a) Domestic solid waste	13.6 T/m	0.48 T/m	No change As there is reduction in multipurpose cargo, fertiliser and container cargo handling, domestic waste generation will also be reduced and this domestic waste generation of 0.48 T/m be easily handled with existing mode of management
	b) Discarded material, plastic material	10.25 T/m	No change is anticipated	No change
	c) Sludge from STP	1.165 T/m	No change is anticipated	No change
	d) Waste Oils & Grease	25 Metric TPA	No change is anticipated	No change
	Waste/ used oil / oil sludge generated in e) ships	600 Metric TPA	No change is anticipated	No change
13.	Power supply	14.5 MVA	5 MVA	Additional power will be sourced from APTRANSCO
14.	Employment	400	65	Reduction in multipurpose cargo, fertiliser and container cargo handling will compensate the employment/No change
15.	Project Cost	Rs.5055 crores	Rs.1688 crores (additional)	Provision of storage, handling equipment and safety aspects including automation facilities will cost additionally Rs.1688 crores.

10. No additional marine infrastructure such as berths, capital dredging, breakwater, reclamation is proposed. No additional land is proposed as sufficient land is available within already approved port boundary of 1800-acre area.

11. *Observation of the committee:*

- i. The current proposal is amendment in EC and CRZ Clearance for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA and without increasing pollution load. The same has been considered as per the OM issues by the Ministry dated 11th April, 2022, under the category of modernization/change of product mix.
- ii. Though the PP has conducted a comprehensive risk assessment study for the proposed liquid cargo facility, covering both the construction and operation phases. The study includes detailed Hazard Identification (HAZID), Preliminary Hazard Analysis (PHA), and Consequence Analysis addressing Maximum Credible Accident (MCA) scenarios yet the BLEVE Study shall also be conducted which is crucial for safety in the port that handle pressurised liquids like LNG and LPG and incorporate appropriate mitigation measures for such extreme scenarios in the project documentation. Compliance with these requirements shall be ensured prior to commencement of project activities.
- iii. The Project Proponents (PP) shall ensure that handling of liquid cargo is carried out with stringent safety measures in place, including proper training of personnel, use of appropriate equipment, and implementation of standard operational protocols, to minimize risks of spillage, fire, or other operational hazards, and to ensure full compliance with applicable safety and environmental regulations.
- iv. The Project Proponents (PP) have submitted Standard Operating Procedures (SOPs) detailing the operational protocols to minimize risks associated with liquid cargo handling. The PP shall strictly adhere to these SOPs to ensure safe operations and compliance with applicable safety and environmental regulations and should also attempt to ensure that coal operations and LNG/LPG operations are not carried out simultaneously.

12. Reason of Amendment: Due to changes in market demand, AGPL has been receiving various inquiries from stakeholders regarding the handling of additional liquid cargo types, including LPG, POL-class A, B, and C, as well as non-hazardous liquids.

13. Court Cases: There is no court case involved in the project.

14. The EAC, taking into account the submission made by the project proponent had a detailed deliberation in its 412th meeting of the Expert Appraisal Committee held on 14th August, 2025, 417th meeting held on 26th September, 2025 and 420th meeting of Expert Appraisal Committee held on 15th October, 2025 **recommended** the proposal for amendment in EC and CRZ clearance vide letter no.10/51/2021-IA.III dated 24/12/2021 for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA under the provisions of clause 7(ii) of the EIA Notification, 2006 and CRZ notification, 2011 subject to all specific conditions and Standard Conditions applicable for such projects.

15. 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 of amendment in the EC and CRZ clearance granted by the Ministry vide letter No. 10/51/2021-IA.III dated 24/12/2021 under Clause 7(ii) of EIA Notification 2006 and CRZ notification, 2011 as per following details:

S.No.	Name of the cargo	As per EC and	Proposed	Remarks

		CRZ clearance vide letter no. 10/51/2021-IA.III dated 24/12/2021 Approved Cargo Profile (MTPA)	Change in Cargo Profile (MTPA)	
1.	Iron ore	5.50	5.5	No change
2.	Coal	28.25	28.25	No change
3.	Multi-Purpose Cargo-Agri products, (Food grains in bags or bulk, Chic-peas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos	S. No.	11.70	Decreased by 1 MTPA
4.	Containers	8.00	6.00	Decreased by 2 MTPA
5.	Fertilizer	2.50	2.50	No change
6.	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminium Ingots, Aluminium Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	3.50	No change
7.	Liquid cargo (Edible oil, caustic lye) Proposed - LPG, POL – class A, B & C etc. and non-hazardous liquid cargo etc.)	0.50	3.50	Liquid cargo handling capacity is proposed to rearrange to 3.5 MTPA to handle LPG, Butane, Propane, Propylene, POL – class A, B & C etc. and non-hazardous liquid cargo, edible oil and caustic lye.

Total	60.95	60.96	-

16. The above amendment is subject to compliance of the following conditions mentioned at Annexure 1:

17. This issues with the approval of the Competent Authority.

Copy To

1. The Principal Secretary, Department of Environment, Forest, Science & Technology, Government of Andhra Pradesh, Room No-268, First Floor, Building No-4, A.P. Secretariat, Velagapudi, Amaravati, Andhra Pradesh-522503.
2. The Inspector General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Vijayawada Green House Complex, Gopalareddy Road, Vijayawada – 520010, Andhra Pradesh.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi -32.
4. The Member Secretary, Andhra Pradesh Pollution Control Board, Chalamalavaii Street, Kasturibaipet, Vijayawada - 520 010.
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
6. Guard File/Record File.
7. Notice Board.

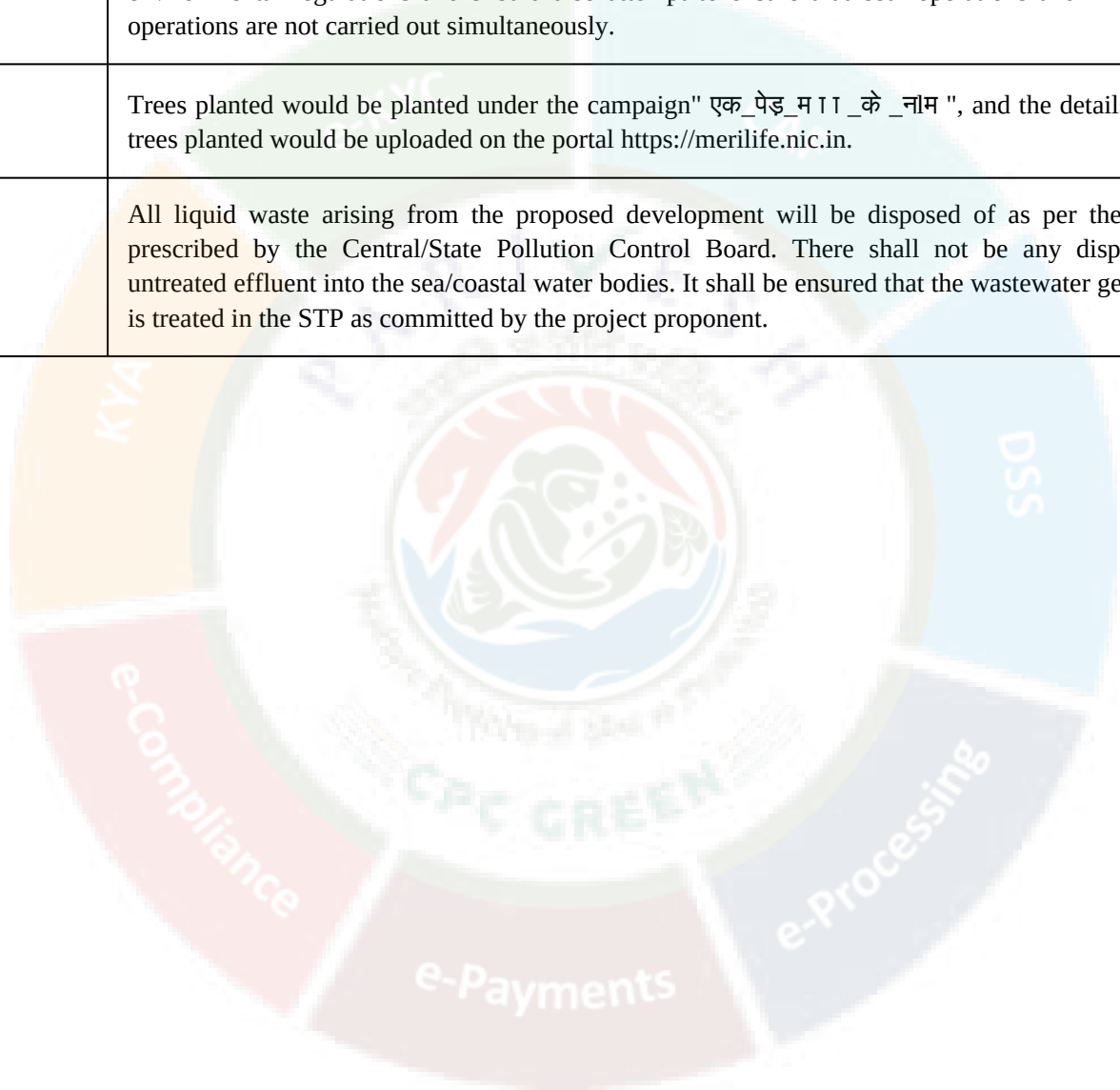
Annexure 1

Specific EC Conditions for (Ports, Harbors, Breakwaters, Dredging)

1. Specific Conditions

S. No	EC Conditions
1.1	All the terms and conditions mentioned in the Environmental and CRZ clearance letter no.10/51/2021-IA.III dated 24/12/2021 shall remain unchanged.
1.2	The Amendment of the EC is being granted for the original proposals for which Environmental and CRZ Clearance vide letter of even no dated 24/12/2021 was granted earlier. The validity of the EC shall remain the same as provided in the Environmental Clearance letter dated 24/12/2021.
1.3	Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. All the storage proposed in the CRZ area shall be in line with the CRZ notification, 2011.
1.4	All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) recommended the project vide Letter No. 609/CRZ/Proj/2024-326 dated 01-06-2025 shall be complied with. The compliance report shall be submitted to the concern IRO, MoEF&CC along with the 6 monthly EC compliance report.
1.5	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in the Coastal Regulation Zone area.

S. No	EC Conditions
1.6	In addition to the comprehensive Risk assessment studies for liquid cargo already conducted the Project Proponents (PP) shall also undertake the BLEVE Study and incorporate appropriate mitigation measures for such extreme scenarios in the project documentation. Compliance with these requirements shall be ensured prior to commencement of project activities and a compliance report shall be submitted along with 6 monthly compliance reports.
1.7	The Project Proponents (PP) have submitted Standard Operating Procedures (SOPs) detailing the operational protocols to minimize risks associated with liquid cargo handling. The PP shall strictly adhere to these SOPs to ensure safe operations and compliance with applicable safety and environmental regulations and should also attempt to ensure that coal operations and LNG/LPG operations are not carried out simultaneously.
1.8	Trees planted would be planted under the campaign "एक_पेड़_म_11_के_नाम", and the details of the trees planted would be uploaded on the portal https://merilife.nic.in .
1.9	All liquid waste arising from the proposed development will be disposed of as per the norms prescribed by the Central/State Pollution Control Board. There shall not be any disposal of untreated effluent into the sea/coastal water bodies. It shall be ensured that the wastewater generated is treated in the STP as committed by the project proponent.



Signature Not Verified

Digitally Signed by : Dr. Amardeep Raju
Member Secretary, MoEFCC (EC)

Date: 19/11/2025

PROJECT NAME		: Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited
LOCATION		: Peda Gantyada Mandal, Visakhapatnam District,, Visakhapatnam, Andhra Pradesh
EC & CRZ FILE NO.		: File No.: 10/51/2021-IA.III
EC IDENTIFICATION NO.		: EC25A3501AP5181140A
EC DATE		: 19.11.2025
COMPLIANCE PERIOD		: 01 ST OCTOBER 2025 TO 31 ST MARCH 2026
SI.NO.	CONDITION	COMPLIANCE
A. Specific Conditions		
1.	All the terms and conditions mentioned in the Environmental and CRZ clearance letter no.10/51/2021-IA.III dated 24/12/2021 shall remain unchanged.	Complied. All the terms and conditions stipulated in the Environmental and CRZ Clearance Letter No. 10/51/2021-IA.III dated 24/12/2021 are being complied with and remain unchanged.
2.	The Amendment of the EC is being granted for the original proposals for which Environmental and CRZ Clearance vide letter of even no dated 24/12/2021 was granted earlier. The validity of the EC shall remain the same as provided in the Environmental Clearance letter dated 24/12/2021.	The amendment to the Environmental Clearance (EC) will be implemented for the original proposals for which Environmental and CRZ Clearance vide Letter No. 10/51/2021-IA.III dated 24/12/2021 was granted earlier. The validity of the Environmental Clearance will remain unchanged and shall continue to be as stipulated in the Environmental Clearance Letter dated 24/12/2021.
3.	Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. All the storage proposed in the CRZ area shall be in line with the CRZ notification, 2011.	All construction activities will be carried out strictly as per the provisions of the CRZ Notification, 2011. The proposed storage facilities within the CRZ area will also be maintained in accordance with the applicable provisions of the CRZ Notification, 2011.
4.	All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) recommended the project vide Letter No. 609/CRZ/Proj/2024- 326 dated 01-06-2025 shall be complied with. The compliance report shall be submitted to the concern IRO, MoEF&CC along with the 6 monthly EC compliance report.	Noted and will be follow.
5.	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in the Coastal Regulation Zone area.	No construction activities, other than those permitted under the provisions of the Coastal Regulation Zone (CRZ) Notification, shall be carried out within the CRZ area.
6.	In addition to the comprehensive Risk assessment studies for liquid cargo already	In addition to the comprehensive Risk Assessment Studies already conducted for

	conducted the Project Proponents (PP) shall also undertake the BLEVE Study and incorporate appropriate mitigation measures for such extreme scenarios in the project documentation. Compliance with these requirements shall be ensured prior to commencement of project activities and a compliance report shall be submitted along with 6 monthly compliance reports.	liquid cargo handling, the Project Proponent (PP) will undertake a BLEVE (Boiling Liquid Expanding Vapor Explosion) Study and incorporate suitable mitigation measures for such extreme scenarios in the project design and documentation. Compliance with these requirements will be ensured prior to the commencement of project activities, and the compliance status will be submitted along with the six-monthly compliance reports.
7.	The Project Proponents (PP) have submitted Standard Operating Procedures (SOPs) detailing the operational protocols to minimize risks associated with liquid cargo handling. The PP shall strictly adhere to these SOPs to ensure safe operations and compliance with applicable safety and environmental regulations and should also attempt to ensure that coal operations and LNG/LPG operations are not carried out simultaneously.	Will be Complied.
8.	Trees planted would be planted under the campaign "एक पेड़ म ा ा के नाम", and the details of the trees planted would be uploaded on the portal https://merilife.nic.in .	Noted & Will be Complied.
9.	All liquid waste arising from the proposed development will be disposed of as per the norms prescribed by the Central/State Pollution Control Board. There shall not be any disposal of untreated effluent into the sea/coastal water bodies. It shall be ensured that the wastewater generated is treated in the STP as committed by the project proponent.	Noted.

**Consent for Establishment Order
& Compliance
Date: 16.08.2022**



ANDHRA PRADESH POLLUTION CONTROL BOARD
D.No.33-26-14D/2, Near Sunrise Hospital, Pushpa Hotel
Centre,
Chalamavari Street, Kasturibaipet, Vijayawada - 520 008
Phone. No.0866-2436200, Website : www.pcb.ap.gov.in

CONSENT ORDER FOR ESTABLISHMENT

Order No: APPCB/ VSP/ VSP/ 113/ CFE/ HO/ 2012

16/08/2022

Sub: **APPCB - CFE - M/s. Gangavaram Port Limited, Gangavaram (V), Pedagantyada (M), Visakhapatnam District** - Consent for Establishment (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. CFO order No.APPCB/VSP/VSP/113/CFO/HO/2020 dt.10.09.2020.
 2. EC order dt.24.12.2021 issued by MoEF & CC, GoI for expansion project.
 3. Port facility's CFE(Exp) application received through APOCMMS on 13.06.2022.
 4. R.O's inspection report dt.16.06.2022.
 5. CFE Committee meeting held on 28.06.2022.
 6. T.O. Ir. dt.12.07.2022.
 7. Port facility's Ir.dt.14.07.2022.
 8. CFE Committee meeting held on 26.07.2022.
 9. T.O. Ir. dt.04.08.2022.
 10.RO: VSP mail dt.08.08.2022 reg receipt of balance fee.

M/s. Gangavaram Port Limited, vide reference 2nd cited, submitted an application to the Board seeking Consent for Establishment (CFE) for expansion project as mentioned below, with an additional investment of Rs.5055.00 Crores.

Proposed Expansion:

S. No.	Name of the cargo	Existing qty as per CFO Order dt.13.01.2016 (MMTPA)	Qty as per EC Clearance dt.24.12.2021 and as per CFE Expansion (MMTPA)	Total qty after CFE expansion (MMTPA)
1	Containers	0.25	7.75	8.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Lime Stone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles,	6.20	6.50	12.70

	Channels, Project Cargo), Bulk Alumina & Other cargos.			
3	Coal	25.00	3.25	28.25
4	Iron ore	3.00	2.50	5.50
5	Fertilizer	2.50	0	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	0	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50	0	0.50
	Total	40.95	20	60.95

2. As per the application, the above expansion activity is to be located in the existing premises of the Port located at **Gangavaram (V), Pedagantyada (M), Visakhapatnam District.**

3. The above site was inspected by Environmental Engineer, Regional Office, Visakhapatnam, A.P Pollution Control Board on 15.06.2022 and found that the port site is surrounded by

North : Gangavaram (V)
South : RINL (Steel Plant)
East : Bay of Bengal
West : Pedagantyada (V)

4. 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.

VIJAY KUMAR GSRKR
IAS, MEMBER SECY(GSRKRVK), O/o
MEMBER SECRETARY-APPCB

To
M/s. Gangavaram Port Ltd., (exp)
Gangavaram (V), Pedagantyada (M)
Visakhapatnam Dist.

Copy to: 1. The JCEE, Z.O: Visakhapatnam for information and necessary action.
2. The E.E., R.O: Visakhapatnam for information and necessary action.

ANNEXURE

1. The Port facility 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 expansion 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 supply is from GVMC and the maximum permitted water consumption after proposed expansion activity is as following:

S. No	Purpose	Qty as per CFO Order dt.13.01.2016 (KLD)	Qty as per EC Order dt.24.12.2021 & proposed CFE Expansion (KLD)	Total quantity after expansion (KLD)
1.	Gardening	25.00	360.00	1754.10
2.	Dust suppression	1296.00		
3.	Ship supply	32.50		
4.	Miscellaneous	40.60		
5.	Domestic	40.00	18.00	58.00
	Total	1434.10	378.00	1812.10

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 , Miscellaneous, Development of greenbelt.

5. The maximum waste water generation (KLD) shall not exceed the following:

S. No	Source	Qty as per CFO Order dt.13.01.2016 (KLD)	Qty as per EC Order dt.24.12.2021 & as per CFE Expansion (KLD)	Total qty after expansion (KLD)
1.	Domestic waste after treatment in STP	32.00	14.40	46.40
	Total	32.00	14.40	46.40

Treatment & Disposal:

S. No.	Effluent Description	Treatment	Disposal
1	Domestic effluent	STPs of capacity - 50 KLD (Existing STP - 35 KLD Proposed STP - 15 KLD)	The treated water shall be utilised for green belt development in own premises.

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:

Existing:

S. No.	Details of Stack	Stack -1 & 2
a.	Attached to:	DG Sets
b.	Capacity	3 X 320 KVA & 1 X 62.5 KVA
c.	Stack height above ground	4m & 6m
d.	Air Pollution Control Equipment:	Acoustic Enclosure

Additional DG Sets not proposed in the expansion project.

7. The port facility 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 port facility 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.

10. 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.

11. Hazardous / Solid Waste details:

The Port Authority shall comply with the following w.r.t disposal of solid waste:

S. No.	Name of the solid waste	Qty as per CFO Order dt. 13.01.2016	Qty proposed for Expansion	Total qty after CFE expansion	Method of Disposal
1.	Waste Oils & Grease	12,000 LPA	---	12,000 LPA	Shall be disposed to authorized Re-processors / Recyclers / to the Cement industries to use as alternate fuel in the kiln routed through M/s APEMCL
2.	Domestic solid waste	10 TPM	3.60 TPM	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities.
3.	Discarded material, plastic material	10 TPM	0.25 TPM	10.25 TPM	Shall be disposed to authorized recyclers only
4.	Sludge from STP	1.0 TPM	0.165 TPM	1.165 TPM	Shall be composted and used for green belt development
5.	Lead acid batteries	---	---	---	Shall be disposed to authorized recyclers routed through M/s APEMCL

Other Conditions:

12. The Gangavaram port facility shall comply with the conditions stipulated in the EC order dt.24.12.2021 issued by the MoEF, CC & GoI.
13. The Gangavaram port facility shall provide the 4th Continuous Ambient Air quality (CAAQM) station with Beta Ray Attenuation technology as per the EC order condition and as committed in the CFE Committee meeting.
14. The Gangavaram port facility shall get a study carried out by Andhra University or any other reputed institute clearly establishing the Ambient Air Quality Levels with existing system and projected levels if tube conveyor system is not provided considering the proposed expansion activities within 6 months.
15. The Gangavaram port shall Conduct Health camps jointly with medical and health departments Govt. AP in the nearby villages.
16. Fire detection and fire fighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.
17. 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
18. 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.
19. The Port facility shall obtain prior permission from MoEF&CC, GoI 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. 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.
22. 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.
23. 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.

VIJAY KUMAR GSRKR IAS,
MEMBER SECY(GSRKRVK), O/o MEMBER
SECRETARY-APPCB

To
M/s. Gangavaram Port Ltd., (exp)
Gangavaram (V), Pedagantyada (M)
Visakhapatnam Dist.

ADANI GANGAVARAM PORT LIMITED

COMPLIANCE OF CONSENT ORDER FOR ESTABLISHMENT

Order No: APPCB/ VSP/ VSP/ 113/ CFE/ HO/ 2012, Date: 16.08.2022.

FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

S.No	Condition	Compliance																													
ANNEXURE																															
1.	The port facility 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 expansion activity.	Being Complied.																													
2.	Compensation is to be paid for any environmental damage caused by it, as fixed by the collector and district magistrate as civil liability.	Noted and will comply with 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.	Noted and will comply with the condition.																													
Water:																															
4.	The source of water supply is from gvmc and the maximum permitted water consumption after proposed expansion activity is as following:																														
	<table><tr><th>S.No.</th><th>Purpose</th><th>Qty as per CFO order dt.13.01.2016 (KLD)</th><th>Qty as per EC order dt.24.12.2021 & Proposed CFE expansion (KLD)</th><th>Total quantity after expansion (KLD)</th></tr><tr><td>1.</td><td>Gardening</td><td>25.00</td><td rowspan="4">360.0</td><td rowspan="4">1754.10</td></tr><tr><td>2.</td><td>Dust suppression</td><td>1296.0</td></tr><tr><td>3.</td><td>Ship supply</td><td>32.50</td></tr><tr><td>4.</td><td>Miscellaneous</td><td>40.60</td></tr><tr><td>5.</td><td>Domestic</td><td>40.0</td><td>18.0</td><td>58.0</td></tr><tr><td></td><td>Total</td><td>1434.10</td><td>378.0</td><td>1812.10</td></tr></table>	S.No.	Purpose	Qty as per CFO order dt.13.01.2016 (KLD)	Qty as per EC order dt.24.12.2021 & Proposed CFE expansion (KLD)	Total quantity after expansion (KLD)	1.	Gardening	25.00	360.0	1754.10	2.	Dust suppression	1296.0	3.	Ship supply	32.50	4.	Miscellaneous	40.60	5.	Domestic	40.0	18.0	58.0		Total	1434.10	378.0	1812.10	
S.No.	Purpose	Qty as per CFO order dt.13.01.2016 (KLD)	Qty as per EC order dt.24.12.2021 & Proposed CFE expansion (KLD)	Total quantity after expansion (KLD)																											
1.	Gardening	25.00	360.0	1754.10																											
2.	Dust suppression	1296.0																													
3.	Ship supply	32.50																													
4.	Miscellaneous	40.60																													
5.	Domestic	40.0	18.0	58.0																											
	Total	1434.10	378.0	1812.10																											
	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, miscellaneous, development of greenbelt																														
	Compliance: AGPL is in the process of providing separate meters for assessing the quantity of water used for each of the purposes viz., dust suppression, domestic, miscellaneous, development of greenbelt.																														

5.	The maximum waste water generation (KLD) shall not exceed the following:				
	S.no.	Source	Qty as per CFO order Dt.13.01.2016 (KLD)	Qty as per EC order Dt:24.12.2021 & as Per CFE expansion (KLD)	Total qty after Expansion (KLD)
		Domestic waste after treatment in STP	32.0	14.40	46.40
		Total	32.0	14.40	46.40
	Treatment & disposal:				
	S. No.	Effluent description	Treatment	Disposal	
	1.	Domestic effluent	Stps of capacity – 50 KLD (Existing STP – 35 KLD Proposed STP – 15 KLD)	The treated water shall be utilised for green belt development in own premises	
	Compliance: AGPL is yet to start implementation of cargo enhancement project.				
6.	The effluent / sewage shall be treated to the onland 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.			Being Complied.	
7.	Air: Existing				
	S.No.	Details of stack		Stack-1&2	
		Attached to:		Dg sets	
		Capacity		3 x 320 KVA & 1 x 62.5 KVA	
		Stack height above ground		4m & 6m	
		Air pollution control equipment:		Acoustic enclosure	
	Additional DG Sets not proposed in the expansion project.				
	Compliance: AGPL obtained CTO vide order dated 22.08.2024 to operate the following capacities of DG sets 3 X 320 KVA, 3 X 1250 KVA 1 X 800 KVA, 2 X 380 KVA, 1 X 200 KVA DG Sets which are being used for emergency power backup.				
8.	The port facility 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			Being Complied.	
9.	The port facility shall comply with the following for controlling fugitive emissions Vehicle movement shall be minimized / eliminated by implementing mechanical operation.			Noted and will comply with the condition.	

	a. All the vehicles involved in transportation of cargo shall be covered with tarpaulin. b. 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. c. Based on traffic density/ vehicular movements anticipated from the port, parking facilities shall be provided.																																					
10.	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.	Noted and will comply with the condition.																																				
11.	The Port Authority shall comply with the following w.r.t disposal of solid waste:																																					
	<table><tr><th>S.No.</th><th>Name of the solid waste</th><th>Qty as per CFO Order dt. 13.01.2016</th><th>Qty proposed for Expansion</th><th>Total qty after CFE expansion</th><th>Method of Disposal</th></tr><tr><td>1.</td><td>Waste Oils & Grease</td><td>12,000 LPA</td><td>--</td><td>12,000 LPA</td><td>Shall be disposed to authorized Reprocessors/ Recyclers / to the Cement industries to use as alternate fuel in the kiln routed through M/s APEMCL</td></tr><tr><td>2.</td><td>Domestic solid waste</td><td>10 TPM</td><td>3.60 TPM</td><td>13.60 TPM</td><td>Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities</td></tr><tr><td>3.</td><td>Discarded material, plastic material</td><td>10 TPM</td><td>0.25 TPM</td><td>10.25 TPM</td><td>Shall be disposed to authorized recyclers only</td></tr><tr><td>4.</td><td>Sludge from STP</td><td>10 TPM</td><td>0.165 TPM</td><td>1.165 TPM</td><td>Shall be composted and used for green belt development</td></tr><tr><td>5.</td><td>Lead acid batteries</td><td>--</td><td>--</td><td>--</td><td>Shall be disposed to authorized recyclers routed through M/s APEMCL</td></tr></table>	S.No.	Name of the solid waste	Qty as per CFO Order dt. 13.01.2016	Qty proposed for Expansion	Total qty after CFE expansion	Method of Disposal	1.	Waste Oils & Grease	12,000 LPA	--	12,000 LPA	Shall be disposed to authorized Reprocessors/ Recyclers / to the Cement industries to use as alternate fuel in the kiln routed through M/s APEMCL	2.	Domestic solid waste	10 TPM	3.60 TPM	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities	3.	Discarded material, plastic material	10 TPM	0.25 TPM	10.25 TPM	Shall be disposed to authorized recyclers only	4.	Sludge from STP	10 TPM	0.165 TPM	1.165 TPM	Shall be composted and used for green belt development	5.	Lead acid batteries	--	--	--	Shall be disposed to authorized recyclers routed through M/s APEMCL	
S.No.	Name of the solid waste	Qty as per CFO Order dt. 13.01.2016	Qty proposed for Expansion	Total qty after CFE expansion	Method of Disposal																																	
1.	Waste Oils & Grease	12,000 LPA	--	12,000 LPA	Shall be disposed to authorized Reprocessors/ Recyclers / to the Cement industries to use as alternate fuel in the kiln routed through M/s APEMCL																																	
2.	Domestic solid waste	10 TPM	3.60 TPM	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities																																	
3.	Discarded material, plastic material	10 TPM	0.25 TPM	10.25 TPM	Shall be disposed to authorized recyclers only																																	
4.	Sludge from STP	10 TPM	0.165 TPM	1.165 TPM	Shall be composted and used for green belt development																																	
5.	Lead acid batteries	--	--	--	Shall be disposed to authorized recyclers routed through M/s APEMCL																																	
	Compliance: Being complied.																																					
Other Conditions:																																						
12.	The Gangavaram port facility shall comply with the conditions stipulated in the EC	Being complied.																																				

	order dt.24.12.2021 issued by the MoEF, CC & GoI.	
13	The Gangavaram port facility shall provide the 4 th Continuous Ambient Air quality (CAAQM) station with Beta Ray Attenuation technology as per the EC order condition and as committed in the CFE Committee meeting.	Complied.
14	The Gangavaram port facility shall get a study carried out by Andhra University or any other reputed institute clearly establishing the Ambient Air Quality Levels with existing system and projected levels if tube conveyor system is not provided considering the proposed expansion activities within 6 months.	Complied.
15	The Gangavaram port shall Conduct Health camps jointly with medical and health departments Govt. AP in the nearby villages.	Complied.
16	Fire detection and firefighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.	Complied.
17.	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.
18.	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. f. E-Waste (Management) Rules, 2016. g. Construction and Demolition Waste Management Rules, 2016. h. Solid Waste Management Rules, 2016.	Complied.

	i. The Public Liability Insurance Act, 1991 and its amendments thereof.	
19.	The Port facility shall obtain prior permission from MoEF&CC, GoI and APPCB for any changes in the cargo type / capacity.	Noted and will comply with the condition.
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.	Noted and will comply with the condition.
21	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.	Noted and will comply with the condition.
22.	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.	Noted and will comply with the condition.
23.	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.	Noted and will comply with the condition.

**Consent for Establishment Order
& Compliance
Date: 09.04.2026.**



ANDHRA PRADESH POLLUTION CONTROL BOARD

Paryavaran Bhavan, APIIC Colony Road,
Gurunanak Colony,
Autonagar, Vijayawada- 520007.
Website: www.pcb.ap.gov.in



CONSENT TO ESTABLISHMENT ORDER

Order No.113/APPCB/CTE/RO-VSP/HO/2026

Dt. 09-04-2026

APPCB – CTE - **M/s. Adani Gangavaram Port Limited**, (Formerly Sub: Gangavaram Port Limited) Gangavaram (V), Pedagantyada (M), Visakhapatnam District– Consent to Establish (CTE) Expansion order 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 –**Order** issued - Reg.

- Ref:
1. EC & CRZ clearance order dt.24.12.2021 issued by MoEF&CC, Gol.
 2. CTE order dt.05.06.2023.
 3. CTO order dt.22.08.2024 which is valid upto 31.07.2029.
 4. Industry's CTE (Expansion) application received through A.P. OCMMS on 29.04.2025 and 11.09.2025.
 5. JCEE, ZO: VSP report dt.29.09.2025.
 6. CTE Committee meeting held on 28.10.2025.
 7. T.O. Lr.dt.05.11.2025.
 8. CTE Committee meeting held on 12.11.2025.
 9. T.O. Lr.dt.23.11.2025.
 10. ZO: VSP report dt.21.02.2026.
 11. CTE Committee meeting held on 11.03.2026.
 12. Industry Lr.dt.31.03.2026.
 13. CTE Committee meeting held on 01.04.2026.

@@@

M/s. Adani Gangavaram Port Limited, vide reference 4th cited, has submitted an application to the Board seeking Consent to Establish (CTE) for Expansion Port Activity, with installed capacities as mentioned below, with an additional investment of Rs.48.50 Crores. (After Expansion of Rs. 7,840.69 Crores)

S. No.	Name of the Cargo	Quantity as per CTO Order dt. 22.08.2024 (Million MTPA)	Quantity After CTE Expansion (Million MTPA)
1	Containers	5.00	5.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	8.00	8.00
3	Coal	26.0	26.0

4	Iron ore	5.50	5.50*
	* Screened Iron Ore Fines	1.0 Lakh TPM	2.5 Lakh TPM
	* Crushed Iron Ore	1.0 Lakh TPM	2.5 Lakh TPM
5	Fertilizer	2.50	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50	0.50
Total		51.00	51.00

Note: *The facility has applied for enhancement of screened Iron ore fines & Crushed Iron Ore from 1.0 Lakhs TPM to 2.5 Lakh TPM and proposed 3.0 MTPA (~8600TPD) Capacity of Crushing, Screening (Unit-II) and Shifting of Iron Ore Fines (IOF) to Mechanical Stockpiles.

2. As per the application, the above activity is located in the existing premises at Gangavaram (V), Pedagantyada (M), Visakhapatnam District, in an area of 1800 acres.
3. The above site was inspected by Joint Chief Environmental Engineer (FAC), Zonal Office, Visakhapatnam and the Environmental Engineer, Regional office, Visakhapatnam of A.P Pollution Control Board on 25.06.2025 & 24.09.2025 and observed that the site is surrounded by
 - East** : Bay of Bengal
 - West** : Pedagantyada Village
 - North** : Gangavaram Village
 - South** : RINL (Steel Plant) boundary
4. The Board, after careful scrutiny of the application, verification report of Zonal Officer: Visakhapatnam; recommendation of the CTE Committee & information submitted by the industry, hereby issues **CONSENT TO ESTABLISH FOR EXPANSION order** under Section 25 of the Water (Prevention & Control of Pollution) Act 1974 and Section 21 of the 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. **The industry shall obtain EC amendment from MoEF&CC in compliance with the EC condition stipulated at XI (x) vide EC order dt.24.12.2021 issued to M/s. Gangavaram Port Ltd.**
6. **The Port authority shall comply with all the directions in the EC Expansion order dt. 24.12.2021 issued by MoEF & CC, GoI.**
7. **The Port authority shall comply with all the conditions stipulated in the Hon'ble NGT (SZ) OA No. 105 of 2023 vide disposal order dt.25.03.2025.**
8. **The facility shall maintain the following**
 - a. **The facility shall provide cladding / cover to the screen, conveyors and crusher.**
 - b. **Hood with Bag filters shall be provided to suck emission at transfer**

points

- c. **Sprinklers shall be provided to suck emissions at transfer points of conveyors.**
 - d. **The facility shall maintain ambient air quality within the Board standards.**
 - e. **The facility shall co-ordinate with traffic police and GVMC for regular cleaning of roads upto National Highway to suppress the dust emissions.**
9. This Consent Order now issued is subject to the conditions mentioned in Annexure.
10. This order is issued from pollution control point of view only. Zoning and other regulations are not considered.
11. **This order is valid for a period of 7 years from the date of issue.**

Encl: Annexure.

S SRISARAVANAN, I.F.S
MEMBER SECRETARY

To

M/s. Adani Gangavaram Port Limited,

(Formerly Gangavaram Port Limited)

Gangavaram (V), Pedagantyada (M), Visakhapatnam District.

Email:Jagabandhu.Behera@adani.com

Copy to:

- 1. The JCEE,Z.O, APPCB, Visakhapatnam for information.
- 2. The E.E.,R.O, APPCB, Visakhapatnam for information and necessary action.

ANNEXURE

1. The proponent shall obtain Consent to Operate (CTO) 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 trial runs.
2. The applicant shall provide separate water meter for effluent sent to STP and Air pollution Control equipments to record energy consumed. An alternative electric power source sufficient to operate all pollution control systems shall be provided
3. Compensation is to be paid for any environmental damage caused by it, as fixed by the Collector and District Magistrate as civil liability.

Water:

4. The source of water is VIWSCO and the maximum permitted water consumption is as following:

S. No	Purpose	Quantity as per CTE Order dt. 16.08.2022 (KLD)	Quantity as per CTO Order dt. 22.08.2024 (KLD)	Proposed Quantity (KLD)	Total quantity after CTE(Exp) (KLD)
1.	Gardening	1754.10	92.00	0.00	1,759.1
2.	Dust suppression		1373.00	5.00	
3.	Ship supply		50.00	0.00	
4.	Miscellaneous		10.00	0.00	
5.	Domestic	58.00	75.00	0.00	75.00
	Total	1812.10 KLD	1600 KLD	5.00 KLD	1,834.1 KLD

5. Water for dust suppression and gardening during operation will be sourced from sewage treatment plant (STP) treated wastewater, ensuring efficient and sustainable use of resources throughout the project's lifecycle
6. Separate water 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.
7. The maximum waste water generation shall not exceed the following:

S. No	Source	Quantity as per CTO Order dt. 22.08.2024 (KLD)	Proposed Quantity (KLD)	Total quantity after CTE (Exp) (KLD)
1.	Domestic waste water after treatment in STP	46.40	No Change	46.40
	Total	46.40 KLD	---	46.40 KLD

Treatment & Disposal:

After CTE (Expansion):

Source of effluent	Treatment	Mode of final disposal
Domestic wastewater	Sewage Treatment Plants of 30 KL & 5 KL capacity to treat the	Dust suppression / Green Belt development /

	domestic wastewater generated within the Port Proposing STP of 15KL capacity to treat the domestic wastewater generated within the Port in the Expansion activity	Industrial use within the Port area

8. 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:

9. 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:

As per CTO order dt:22.08.2024: -

S.No.	Details of Stack	Stacks 1 to 10
a)	Attached to	DG Sets
b)	Capacity	3 X 320 KVA, 3 X 1250 KVA, 1 X 800 KVA, 2 X 380 KVA & 1 X 200 KVA
c)	Stack height	6m & 4 m
d)	Control Equipment	Acoustic enclosures
e)	Air pollutants	As per CPCB guidelines issued from time to time

After CTE (Expansion): - No Change in DG sets.

10. 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 at the periphery.
11. 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.
12. The proponent shall provide and maintain Water sprinkling effectively at all container handling & truck moment areas.
13. 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.
14. 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.

Solid / Hazardous Waste:

15. The Port Authority shall comply with the following with respect to disposal of solid waste:

S. No.	Name of the Hazardous waste	Stream (Sch-I)	Quantity After CTE Expansion	Disposal Option
1.	Waste Oil /Used Oil	5.1	35 TPA	Shall be r o u t e d through M/s.APEMCL to authorised Re-processors/ Recyclers / to the cement industries to use as Alternative Fuel Resource (AFR) for Co-processing in the kiln.
2.	Waste Oil / Used oil sludge generated in ships	5.1	1200 TPA	Shall be r o u t e d through M/s.APEMCL to authorized waste Oil Re-processors/Recyclers / to the Cement industries to be used Alternative Fuel Resource (AFR) for Co-processing in the Cement Kiln routed.
3.	Domestic solid waste	---	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities
4.	Discarded material, plastic material	---	10.25 TPM	Shall be disposed to authorized recyclers only
5.	Sludge from STP	---	1.165 TPM	Shall be composted and used for greenbelt development
6.	Lead acid batteries	---	---	Shall be routed through M/s.APEMCL to dispose to authorized recyclers.

Other Conditions:

16. The industry shall obtain EC amendment from MoEF&CC in compliance with the EC condition stipulated at XI (x) vide EC order dt.24.12.2021 issued to M/s. Gangavaram Port Ltd.
17. The Port authority shall comply with all the conditions stipulated in the EC Expansion order dt. 24.12.2021 issued by MoEF & CC, Gol.

18. **The Port authority shall comply with all the conditions stipulated in the CTO order dt.22.08.2024 which is valid upto 31.07.2029 issued by the Board.**
19. **The Port authority shall comply with all the directions in the Hon'ble NGT (SZ) OA No. 105 of 2023 vide disposal order dt.25.03.2025.**
20. **The Port authority is not permitted import of Ammonium Nitrate.**
21. **The port authority shall continuously monitor GLC of pollutants at representative locations.**
22. **The port authority shall ensure implementation of requisite MDSS and dust containment / suppression measures to effectively control fugitives dust emissions during handling, transport & storage of dust cargo.**
23. **Fixed water sprinkler systems have been installed at unloading areas, stockyards to control dust emissions.**
24. **The facility shall maintain the following**
 - a. **The facility shall provide cladding / cover to the screen, conveyors and crusher.**
 - b. **Hood with Bag filters shall be provided to suck emission at transfer points**
 - c. **Sprinklers shall be provided to suck emissions at transfer points of conveyors.**
 - d. **The facility shall maintain ambient air quality within the Board standards.**
 - e. **The facility shall co-ordinate with traffic police and GVMC for regular cleaning of roads upto National Highway to suppress the dust emissions.**
25. Cargo unloading operations are carried out through mobile hoppers, with direct transfer of cargo into covered trucks, thereby minimizing dust emissions.
26. The port authority shall quantify the used Lead acid batteries generated and details shall be reported while applying for CTO.
27. The project proponent shall use closed pipe conveyor system for conveyance of cargo from berth to storage sheds to avoid fugitive emissions.
28. Adequate dust suppression / containment measures shall be implemented while loading, unloading of cargo & transits storage.
29. The closed conveyor gallery along with the junction/transfer towers shall be provided with dust suppression systems (DSS). Dust suppression systems with water sprinklers/fogging system shall be provided to prevent the fugitive dust emissions during handling, transfer and storage. Further, wind screens shall be installed to prevent/arrest/controls the fugitive emissions.
30. The project proponent shall provide display sign boards at berths and cargo stocking area showing the details of the berth & cargo handling.
31. The terminal shall maintain leaky container enclosure with a provision for collection of The International Maritime Dangerous Goods (IMDG) in case of leakage as hazardous waste and same shall be disposed to TSDF, Parawada.
32. The project proponent shall connect the CC Cameras to APPCB website.
33. Fire detection and firefighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.
34. Onsite & offsite Disaster Management plan shall be prepared to meet any eventuality in case of any accident. Mock drills shall be conducted at least twice a year and modifications required if any shall be incorporated in Disaster Management Plan and shall submit to Board.
35. The following rules and regulations notified by the MOE&F, GOI shall be implemented as applicable:

- 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& Amendments thereof.
 - d) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
 - e) Batteries (Management & Handling) Rules, 2010& Amendments thereof.
 - f) E-Waste (Management) Rules, 2016& Amendments thereof.
 - g) Construction and Demolition waste Management Rules, 2016& Amendments thereof.
 - h) Solid Waste Management Rules, 2016& Amendments thereof.
 - i) Public Liability Insurance Act, 1991 and its amendments thereof.
 - j) Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.
 - j) Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.
 - k) Ozone Depleting Substances (ODS) Rules of 2000.
36. The facility shall develop green belt as per EC Expansion order dt.24.12.2021. The facility shall not disturb the Existing green belt for the proposed CTE Expansion activity.
37. The facility shall maintain wind breaking wall all along the Gangavaram village side up to a height 10 mts as wind speed is high in this area.
38. The project proponent shall obtain valid policy under PLI Act, Fire NOC before applying for CTO of the Board.
39. The project proponent 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.
40. The project proponent shall submit compliance to the conditions stipulated in the CTE 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_Compliance_of_CTE_CFO_Direction.aspx.
41. 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.
42. The Board reserves its right to modify above conditions or stipulate any additional conditions including revocation of this order in the interest of environment protection.
43. 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.
44. 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.

S SRISARAVANAN, I.F.S
MEMBER SECRETARY

To

M/s. Adani Gangavaram Port Limited,

(Formerly Gangavaram Port Limited)

Gangavaram (V), Pedagantyada (M), Visakhapatnam District.

Email:Jagabandhu.Behera@adani.com

ADANI GANGAVARAM PORT LIMITED

(Formerly known as Gangavaram Port Limited)

COMPLIANCE FOR CONSENT TO ESTABLISHMENT ORDER (CTE)

Order No: 113/APPCB/CTE/RO-VSP/HO/2026, Date: 09.04.2026.

FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

S.No	Condition	Compliance																																				
ANNEXURE																																						
1.	The proponent shall obtain Consent to Operate (CTO) 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 trail runs.	Noted.																																				
2.	The applicant shall provide separate water meter for effluent sent to STP and Air pollution Control equipments to record energy consumed. An alternative electric power source sufficient to operate all pollution control systems shall be provided.	We will provide separate water meter for effluent sent to STP and Air Pollution Control equipments to record energy consumed. An alternative electric power source will be provided to operate all pollution control systems.																																				
3.	Compensation is to be paid for any environmental damage caused by it, as fixed by the collector and district magistrate as civil liability.	Noted and will comply with the condition.																																				
Water:																																						
4.	The source of water is VIWSCO and the maximum permitted water consumption is as following: <table><tr><th>S.No.</th><th>Purpose</th><th>Quantity as per CTE order dt.16.08.2022 (KLD)</th><th>Quantity as per CTO order dt.22.08.2024 (KLD)</th><th>Proposed Quantity (KLD)</th><th>Total quantity after CTE (Exp) (KLD)</th></tr><tr><td>1.</td><td>Gardening</td><td rowspan="4">1754.10</td><td>92.00</td><td>0.00</td><td rowspan="4">1,759.1</td></tr><tr><td>2.</td><td>Dust suppression</td><td>1373.00</td><td>5.00</td></tr><tr><td>3.</td><td>Ship supply</td><td>50.00</td><td>0.00</td></tr><tr><td>4.</td><td>Miscellaneous</td><td>10.00</td><td>0.00</td></tr><tr><td>5.</td><td>Domestic</td><td>58.00</td><td>75.00</td><td>0.00</td><td>75.00</td></tr><tr><td></td><td>Total</td><td>1812.10 KLD</td><td>1600 KLD</td><td>5.00 KLD</td><td>1,834.1 KLD</td></tr></table>		S.No.	Purpose	Quantity as per CTE order dt.16.08.2022 (KLD)	Quantity as per CTO order dt.22.08.2024 (KLD)	Proposed Quantity (KLD)	Total quantity after CTE (Exp) (KLD)	1.	Gardening	1754.10	92.00	0.00	1,759.1	2.	Dust suppression	1373.00	5.00	3.	Ship supply	50.00	0.00	4.	Miscellaneous	10.00	0.00	5.	Domestic	58.00	75.00	0.00	75.00		Total	1812.10 KLD	1600 KLD	5.00 KLD	1,834.1 KLD
S.No.	Purpose	Quantity as per CTE order dt.16.08.2022 (KLD)	Quantity as per CTO order dt.22.08.2024 (KLD)	Proposed Quantity (KLD)	Total quantity after CTE (Exp) (KLD)																																	
1.	Gardening	1754.10	92.00	0.00	1,759.1																																	
2.	Dust suppression		1373.00	5.00																																		
3.	Ship supply		50.00	0.00																																		
4.	Miscellaneous		10.00	0.00																																		
5.	Domestic	58.00	75.00	0.00	75.00																																	
	Total	1812.10 KLD	1600 KLD	5.00 KLD	1,834.1 KLD																																	
Compliance: The source of water will be obtained from VIWSCO and we will not exceed the water consumption limits as directed by the Board authorities.																																						
5.	Water for dust suppression and gardening during operation will be sourced from sewage treatment plant (STP) treated wastewater, ensuring efficient and sustainable use of resources throughout the project's lifecycle.	Noted.																																				

6.	Separate water 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.	We will provide separate water meters with necessary pipe-line for assessing the quantity of water used for each of the purposes viz., Dust suppression, Domestic purposes, Washing and servicing, Development of greenery.																					
7.	The maximum waste water generation (KLD) shall not exceed the following: <table><tr><th>S.No.</th><th>Source</th><th>Quantity as per CTO order dt.22.08.2024 (KLD)</th><th>Proposed Quantity (KLD)</th><th>Total quantity after CTE (Exp) (KLD)</th></tr><tr><td>1.</td><td>Domestic waste water after treatment in STP</td><td>46.40</td><td>No change</td><td>46.40</td></tr><tr><td></td><td>Total</td><td>46.40 KLD</td><td>---</td><td>46.40 KLD</td></tr></table> <u>Treatment & disposal:</u> <u>After CTE (Expansion):</u> <table><tr><th>Source of effluent</th><th>Treatment</th><th>Mode of final disposal</th></tr><tr><td>Domestic wastewater</td><td>Sewage Treatment Plants of 30 KL & 5 KL capacity to treat the domestic wastewater generated within the Port Proposing STP of 15 KL capacity to treat the domestic wastewater generated within the Port in the Expansion activity.</td><td>Dust suppression / Green Belt development / Industrial use within the Port area.</td></tr></table> Compliance: We will not exceed the waste water generation limits as directed by the Board authorities and the domestic wastewater will be treated in STP and the treated waste water will be utilized for Dust suppression / Green Belt development / Industrial use within the Port area.		S.No.	Source	Quantity as per CTO order dt.22.08.2024 (KLD)	Proposed Quantity (KLD)	Total quantity after CTE (Exp) (KLD)	1.	Domestic waste water after treatment in STP	46.40	No change	46.40		Total	46.40 KLD	---	46.40 KLD	Source of effluent	Treatment	Mode of final disposal	Domestic wastewater	Sewage Treatment Plants of 30 KL & 5 KL capacity to treat the domestic wastewater generated within the Port Proposing STP of 15 KL capacity to treat the domestic wastewater generated within the Port in the Expansion activity.	Dust suppression / Green Belt development / Industrial use within the Port area.
S.No.	Source	Quantity as per CTO order dt.22.08.2024 (KLD)	Proposed Quantity (KLD)	Total quantity after CTE (Exp) (KLD)																			
1.	Domestic waste water after treatment in STP	46.40	No change	46.40																			
	Total	46.40 KLD	---	46.40 KLD																			
Source of effluent	Treatment	Mode of final disposal																					
Domestic wastewater	Sewage Treatment Plants of 30 KL & 5 KL capacity to treat the domestic wastewater generated within the Port Proposing STP of 15 KL capacity to treat the domestic wastewater generated within the Port in the Expansion activity.	Dust suppression / Green Belt development / Industrial use within the Port area.																					
8.	The effluent / sewage shall be treated to the onland 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.	We will treat the effluent as per the onland 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.																					

Air:

9.	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: As per CTO order dt:22.08.2024: - <table border="1"> <thead> <tr> <th>S.No.</th><th>Details of stack</th><th>Stacks 1 to 10</th></tr> </thead> <tbody> <tr> <td>a)</td><td>Attached to</td><td>DG Sets</td></tr> <tr> <td>b)</td><td>Capacity</td><td>3 X 320 KVA, 3 X 1250 KVA, 1 X 800 KVA, 2 X 380 KVA & 1 X 200 KVA</td></tr> <tr> <td>c)</td><td>Stack height</td><td>6m & 4m</td></tr> <tr> <td>d)</td><td>Control Equipment</td><td>Acoustic enclosures</td></tr> <tr> <td>e)</td><td>Air pollutants</td><td>As per CPCB guidelines issued from time to time</td></tr> </tbody> </table> After CTE (Expansion): - No Change in DG sets. Compliance: AGPL obtained CTO vide order dated 22.08.2024 to operate the following capacities of DG sets 3 X 320 KVA, 3 X 1250 KVA 1 X 800 KVA, 2 X 380 KVA, 1 X 200 KVA DG Sets which are being used for emergency power backup.		S.No.	Details of stack	Stacks 1 to 10	a)	Attached to	DG Sets	b)	Capacity	3 X 320 KVA, 3 X 1250 KVA, 1 X 800 KVA, 2 X 380 KVA & 1 X 200 KVA	c)	Stack height	6m & 4m	d)	Control Equipment	Acoustic enclosures	e)	Air pollutants	As per CPCB guidelines issued from time to time
S.No.	Details of stack	Stacks 1 to 10																		
a)	Attached to	DG Sets																		
b)	Capacity	3 X 320 KVA, 3 X 1250 KVA, 1 X 800 KVA, 2 X 380 KVA & 1 X 200 KVA																		
c)	Stack height	6m & 4m																		
d)	Control Equipment	Acoustic enclosures																		
e)	Air pollutants	As per CPCB guidelines issued from time to time																		
10.	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 at the periphery.	We will ensure 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 at the periphery.																		
11.	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.	Noted.																		
12.	The proponent shall provide and maintain Water sprinkling effectively at all container handling & truck moment areas.	We will provide and maintain water sprinkling at all container handling and truck moment areas to reduce the fugitive dust emissions.																		
13.	The proponent shall comply with the following for controlling fugitive emissions. Vehicle movement shall be minimized / eliminated by implementing mechanical operation.	We will comply with the following for controlling fugitive emissions: We will minimize the vehicle movement 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.	- We will cover all the vehicles with the tarpaulin involved in transportation of cargo. - Noted. - We will provide parking facilities based on traffic density / vehicular movements anticipated from the port.
14.	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.	We will implement necessary dust suppression and containment measures for effective control of fugitive emissions.

Solid / Hazardous Waste:

15.	The Port Authority shall comply with the following with respect to disposal of solid waste:				
	S.No.	Name of the Hazardous waste	Stream (Sch-I)	Quantity After CTE Expansion	Disposal Option
	1.	Waste Oil / Used Oil	5.1	35 TPA	Shall be routed through M/s. APEMCL to authorised Reprocessors/ Recyclers / to the cement industries to use as Alternative Fuel Resource (AFR) for Co-processing in the kiln.
	2.	Waste Oil / Used oil sludge generated in ships	5.1	1200 TPA	Shall be routed through M/s. APEMCL to authorized waste Oil Reprocessors/Recyclers / to the Cement industries to be used Alternative Fuel Resource (AFR) for Co-processing in the Cement Kiln routed.
	3.	Domestic solid waste	---	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities.
	4.	Discarded material, plastic material	---	10.25 TPM	Shall be disposed to authorized recyclers only.
	5.	Sludge from STP	---	1.165 TPM	Shall be composted and used for green belt development
	6.	Lead acid batteries	---	---	Shall be routed through M/s. APEMCL to dispose to authorized recyclers.
	Compliance: We will comply as directed.				

Other Conditions:

16.	The industry shall obtain EC amendment from MoEF&CC in compliance with the EC condition stipulated at XI (x) vide EC order dt.24.12.2021 issued to M/s. Gangavaram Port Ltd.	Noted.
17.	The Port authority shall comply with all the conditions stipulated in the EC Expansion order dt. 24.12.2021 issued by MoEF & CC, GoI.	We will comply with all the conditions stipulated in the EC Expansion order dt. 24.12.2021 issued by MoEF & CC, GoI.
18.	The Port authority shall comply with all the conditions stipulated in the CTO order dt.22.08.2024 which is valid upto 31.07.2029 issued by the Board.	We will comply with all the conditions stipulated in the CTO order dt.22.08.2024 which is valid upto 31.07.2029.
19.	The Port authority shall comply with all the directions in the Hon'ble NGT (SZ) OA No. 105 of 2023 vide disposal order dt. 25.03.2025.	We will comply with all the directions in the Hon'ble NGT (SZ) OA No. 105 of 2023 vide disposal order dt. 25.03.2025.
20.	The Port authority is not permitted import of Ammonium Nitrate.	Noted.
21.	The port authority shall continuously monitor GLC of pollutants at representative locations.	We will continuously monitor GLC of pollutants at representative locations.
22.	The port authority shall ensure implementation of requisite MDSS and dust containment / suppression measures to effectively control fugitives dust emissions during handling, transport & storage of dust cargo.	We will ensure implementation of requisite MDSS and dust containment / suppression measures to effectively control fugitives dust emissions during handling, transport & storage of dust cargo.
23.	Fixed water sprinkler systems have been installed at unloading areas, stockyards to control dust emissions.	We will install fixed water sprinkling systems at unloading areas, stockyards to control dust emissions.
24.	The facility shall maintain the following: a. The facility shall provide cladding / cover to the screen, conveyors and crusher. b. Hood with Bag filters shall be provided to suck emission at transfer points. c. Sprinklers shall be provided to suck emissions at transfer points of conveyors. d. The facility shall maintain ambient air quality within the Board standards. e. The facility shall co-ordinate with traffic police and GVMC for regular cleaning of roads upto National Highway to suppress the dust emissions.	a. We will provide cladding / cover to the screen, conveyors and crusher. b. We will provide hood with bag filters to suck emission at transfer points. c. We will provide sprinklers to suck emissions at transfer points of conveyors. d. We will maintain ambient air quality within the Board standards. e. We will co-ordinate with traffic police and GVMC for regular cleaning of roads upto National Highway to suppress the dust emissions.
25.	Cargo unloading operations are carried out through mobile hoppers, with direct transfer of cargo into covered trucks, thereby minimizing dust emissions.	We will carry out the cargo unloading operations through mobile hoppers, with direct transfer of cargo into covered

		trucks, thereby minimizing dust emissions.
26.	The port authority shall quantify the used Lead acid batteries generated and details shall be reported while applying for CTO.	We will follow as directed.
27.	The project proponent shall use closed pipe conveyor system for conveyance of cargo from berth to storage sheds to avoid fugitive emissions.	We will use closed pipe conveyor system for conveyance of cargo from berth to storage sheds to avoid fugitive emissions.
28.	Adequate dust suppression / containment measures shall be implemented while loading, unloading of cargo & transits storage.	We will implement necessary dust suppression / containment measures while loading, unloading of cargo & transits storage.
29.	The closed conveyor gallery along with the junction / transfer towers shall be provided with dust suppression systems (DSS). Dust suppression systems with water sprinklers / fogging system shall be provided to prevent the fugitive dust emissions during handling, transfer and storage. Further, wind screens shall be installed to prevent/arrest/controls the fugitive emissions.	We will provide closed conveyor gallery along with the junction / transfer towers with dust suppression systems (DSS).
30.	The project proponent shall provide display sign boards at berths and cargo stocking area showing the details of the berth & cargo handling.	We will provide display sign boards at berths and cargo stocking area showing the details of the berth & cargo handling.
31.	The terminal shall maintain leaky container enclosure with a provision for collection of The International Maritime Dangerous Goods (IMDG) in case of leakage as hazardous waste and same shall be disposed to TSDF, Parawada.	We will maintain leaky container enclosure with a provision for collection of The International Maritime Dangerous Goods (IMDG) in case of leakage as hazardous waste and same will be disposed to TSDF, Parawada.
32.	The project proponent shall connect the CC Cameras to APPCB website.	We will connect the CC cameras with APPCB website.
33.	Fire detection and firefighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.	We will provide fire detection and firefighting facilities with adequate water storage facility in fire prone area in consultation with competent authorities.
34.	Onsite & offsite Disaster Management plan shall be prepared to meet any eventuality in case of any accident. Mock drills shall be conducted at least twice a year and modifications required if any shall be incorporated in Disaster Management Plan and shall submit to Board.	Noted.
35.	The following rules and regulations notified by the MOE&F, GOI shall be implemented as applicable: a. Regulation of Persistent Organic Pollutants Rules, 2018.	We will implement and follow all the rules and regulations notified by the MOE&F, GOI.

	b. Hazardous waste and other wastes (Management and Transboundary Movement) Rules, 2016. c. Plastic Waste Management Rules, 2016 & Amendments thereof. d. Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989. e. Batteries (Management & Handling) Rules, 2010 & Amendments thereof. f. E-Waste (Management) Rules, 2016 & Amendments thereof. g. Construction and Demolition Waste Management Rules, 2016 & Amendments thereof. h. Solid Waste Management Rules, 2016 & Amendments thereof. i. Public Liability Insurance Act, 1991 and its amendments thereof. j. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996. k. Ozone Depleting Substances (ODS) Rules of 2000.	
36.	The facility shall develop green belt as per EC Expansion order dt.24.12.2021. The facility shall not disturb the Existing green belt for the proposed CTE Expansion activity.	We have completed plantation of 42,923 samplings for the financial year 2025-2026 all along the Gangavaram village side up to a height of 10 mts.
37.	The facility shall maintain wind breaking wall all along the Gangavaram village side up to a height 10 mts as wind speed is high in this area.	An existing 579 m wind wall has been completed, and a new extension of 434 m is under construction. Out of the 434 m extension, 240 m of the wind wall has been completed along the Gangavaram village side up to a height of 10 m.
38.	The project proponent shall obtain valid policy under PLI Act, Fire NOC before applying for CTO of the Board.	We have obtained PLI from the respective boards as directed. PLI policy are attached as annexure.
39.	The project proponent 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.	We will prepare a safety report and carry out an independent safety audit report as required under Rule 10 of MSIHC Rules, 1989 and get it approved by the Factories Dept.,
40.	The project proponent shall submit compliance to the conditions stipulated in the CTE orders to the concerned Regional Officer of APPCB every six months and shall upload the same at APPCB website viz.,	Now, we are submitting CFE half yearly report for the period of 01st October 2025 to 31st March 2026 to the Integrated Regional Office {IRO}, MoEF&CC,

	https://pcb.ap.gov.in/UI/Submission_Compliance_of_CTE_CFO_Direction.aspx .	Vijayawada through online in PARIVESH portal.
41.	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.	Noted and will comply with the condition.
42.	The Board reserves its right to modify above conditions or stipulate any additional conditions including revocation of this order in the interest of environment protection.	We will obey to the condition.
43.	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.	Noted.
44.	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.	We will follow as directed by the Board authorities.

**Consent To Operate & Hazardous Waste
Authorisation Order
& Compliance
date: 22.08.2024.**

**ANDHRA PRADESH POLLUTION CONTROL BOARD****Dr. YSR Paryavaran Bhavan, APIIC Colony Road,****Gurunanak Colony, Autonagar, Vijayawada- 520007****Phone. No.0866-2463200, Website: <https://pcb.ap.gov.in/>****CONSENT TO OPERATE & HAZARDOUS WASTE AUTHORISATION ORDER****Consent Order No:APPCB/VSP/113/CTO/HO/2009****Dt. 22/08/2024**

CONSENT is hereby granted to Operate under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21/22 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and authorisation under Rule 5 of the Hazardous Wastes (Management, Handling & Transboundary, Movement) Rules, 2008 & Amendments thereof and the rules and orders made there under (hereinafter referred to as 'the Acts', 'the Rules') to:

M/s. Adani Gangavaram Port Limited, (After Expansion)**(Formerly: Gangavaram Port Limited)****Gangavaram (V), Pedagantyada (M),****Visakhapatnam District****E-mail: jyothi.dantuluri@adani.com,**

(Hereinafter referred to as 'the Applicant') authorising 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 wastewater	46.40	After treatment in STP, the treated wastewater shall be used for onland irrigation within port premises.

ii. Emissions from chimneys:

S. No	Description of Chimney	Quantity of Emissions in Nm³/hr. at peak flow
1 to 10	Attached to 3 X 320 KVA, 3 X 1250 KVA 1 X 800 KVA, 2 X 380 KVA, 1 X 200 KVA DG Sets	--

iii. Hazardous Waste Authorisation (Form – II) [See Rule 6 (2)]:

M/s. Adani Gangavaram Port Limited, (Formerly Gangavaram Port Limited) Gangavaram (V), Pedagantyada (M), Visakhapatnam District is hereby granted an authorisation to operate a facility for generation, collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

- **Hazardous waste with recycling option:**

S.No	Name of the Hazardous waste	Stream	Quantity	Method of disposal
1.	Waste Oil / Used Oil	5.1 of Schedule-I	25 MTPA	Shall be sent to authorised Re-processors / Recyclers / to the cement industries to use as alternate fuel in the kiln through M/s. APEMCL.
2.	Waste Oil / Used oil sludge generated in ships	5.1 of Schedule-I	1200 MTPA	Shall be routed through M/s. APEMCL to authorised recyclers/ re-processors directly from the ship.
3.	Used Lead acid Batteries	17 of Schedule – IV	--	Shall be returned to dealers on buy back policy/ authorized recyclers as per Battery Management Rules,2022

The CTO & HWA Order No. APPCB/VSP/VSP/113/CFO/HO/2009, dated 22/08/2023 valid up to 31.12.2025 stands cancelled from the date of issue of this order.

This consent order is valid for various port activities with installed capacities as mentioned below:

S. No.	Name of the Cargo	Quantity (After Expansion of Phase – I in Million MTPA)
1	Containers	5.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	8.00
3	Coal	26.0
4	Iron ore	5.50
5	Fertilizer	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles,	3.50

	CP Coke Bauxite, gypsum, clinker, scrap)	
7	Liquid cargo (edible oil, caustic lye)	0.50
	Total	51.00
8	Screened Iron Ore Fines	1.0 Lakh TPM
9	Crushed Iron Ore	1.0 Lakh TPM.

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 to operate & Hazardous Waste Authorisation shall be valid for a period ending with the **31st day of July, 2029.**

B SREEDHAR IAS, MS(BS), O/o MEMBER SECRETARY-APPCB

To

**M/s. Adani Gangavaram Port Limited,
(Formerly Gangavaram Port Limited)
Gangavaram (V), Pedagantyada (M),
Visakhapatnam District
E-mail: jyothi.dantuluri@adani.com,**

Copy to:

1. The JCEE, Zonal Office, Visakhapatnam for information and necessary action.
2. The EE, Regional Office, Visakhapatnam for information and necessary action.

SCHEDULE-A

1. Any up-set condition in any industrial plant / activity of the facility, 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 facility 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.
3. 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.
4. The facility 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.
5. 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.
6. The applicant should make applications through Online for renewal of Consent (under

Water and Air Acts) and Authorisation 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 CTO conditions for obtaining Consent & HW Authorisation of the Board.

7. The facility 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 authorised should not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.
8. 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.
9. The facility 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.
10. The facility may explore the possibility of tapping the solar energy for their energy requirements.
11. The facility should educate the workers and nearby public of possible accidents and remedial measures.

SCHEDULE-B

The issue of CTO&HWA (Expansion) to the facility was placed in the Consent Management Committee meeting held on 08.08.2024. The facility shall comply with the following conditions:

1. The facility shall install the digital display board at Port premises.
2. The facility shall ensure the energy conservation measures by solar power generation.
3. The facility shall comply with the Task Force directions dated 27.04.2023, and conditions stipulated in CTO order dated 22.08.2023 and the control measures proposed by the facility as committed vide letter dated 05.08.2024. The details are as follows:

S.No	Project Details	Project Term	Target Date
1.	Replacement of the existing 3 No. of CAAQM Stations with Beta Ray Attenuation Technology	Short Term	November, 2024
2.	Separate / individual digital water meters to be provided at Critical locations	Short Term	November, 2024
3.	Replacement of existing Analog meters with Digital Water Flow Meters for 2 STP Outlet and New tyre washing outlet purpose.	Short Term	November, 2024
4.	Replacement of existing Analog meters with IOT and digital flow meters.	Short Term	November, 2024
5.	DG set retrofitting as per the CPCB / SPCB directions to the	Short	November,

	existing DG sets	Term	2024
6.	Pre & Post dredging marine ecological study to be taken-up separately.	Short Term	January 2025.
7.	Extension of the wind break wall provided towards Gangavaram (V) for another 350 meters.	Medium	March-2025.
8.	In addition to the closed shed for storage of waste oils & other solid wastes, additional storage shed for storage of Non-Hazardous and Hazardous waste to cater the storage needs for 3 months storage	Long term	12 Months
9.	Under Mechanization & Modernization – to upgrade the Stack yards with MDSS System in addition to the existing 176 no. of PLC based MDSS System	Long term	18 Months
10.	Further strengthening the existing drainage system along with collection pits.	Long term	18 Months
11.	To control the fugitive emissions, supporting with rows of greenbelt, propose to provide windshields around the individual operational areas	Long term	12 Months
12.	All the existing Phase – I & II stack yards intermediate peripheral retaining wall for each stack pile in the yards for further protection of stock piles.	Long term	18 Months

Water Pollution:

4. The source of water is Visakhapatnam Industrial Water Supply Co. The following is the permitted water consumption:

S.No.	Purpose	Quantity (KLD)
1.	Gardening	92
2.	Dust Suppression, Truck tyre washing etc.	1373
3.	Ship supply	50
4.	Miscellaneous	10
5.	Domestic	75
	Total	1600 KLD

Separate meters shall be maintained for assessing the quantity of water used for each of the purposes mentioned above purpose.

5. The effluent discharged shall not contain constituents in excess of the tolerance limits mentioned below:

Outlet	Parameter	Limiting Standards (mg/l except for pH)
1	pH	6.50 – 8.50
	Oil and Grease	10
	Biochemical Oxygen Demand	30
	Total Suspended Solids	<100
	Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml)	<1000 MPN/100 ml

6. The facility shall maintain Electro Magnetic flow meters with totalizers for water consumption, effluent generation mentioned in the Order.
7. The facility shall provide & maintain separate energy meters for Sewage Treatment Plant (STP) and for Air pollution Control equipment to record energy consumption.
8. The effluent / sewage shall be treated to the on land for irrigation standards, as stipulated under schedule VI 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.
9. 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

Air Pollution:

10. The facility 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.
11. The facility shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10mm) - 100 mg/ m³; PM_{2.5} (Particulate Matter size less than 2.5 mm) - 60 mg/ m³; SO₂- 80 mg/ m³; NO_x - 80 mg/m³, outside the factory premises at the periphery of the facility.
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)
12. The facility shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R. 804(E), dated 03.11.2022, 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.
13. The facility shall comply with the noise limits for DG sets (upto 1000 KVA) as per G.S.R.520 (E), dated 01.07.2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Act Rules.
14. The facility shall maintain 4 CAAQMs with online connectivity to APPCB and maintain records.
15. 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 PM_{2.5} in reference to PM emission, and SO₂ and NO_x in reference to SO₂ and NO_x emissions) within and outside the project area at least at four locations, covering upwind and downwind directions.
16. The facility shall not stack the materials more than 12 meters height where MDSS system is available and shall maintain stack height of 10 meters at manual stack yards.
17. The facility shall maintain wind breaking wall all along the Gangavaram village side up to a height 10 mts as wind speed is high in this area.

- 18.The facility shall not establish any other stock yards other than designated stock yards.
- 19.The facility shall maintain Telescopic chute at ship loading points
- 20.The facility shall maintain dusty cargo operations if the wind velocity crosses 20 KMPH and all MDSS sprinklers shall start immediately to maintain AAQ standards.
- 21.The facility shall maintain fully mechanized handling equipment for loading and unloading operations for dusty cargo to the maximum extent possible.
- 22.The facility shall handle alumina in completely closed enclosures.
- 23.The facility shall maintain comply with the following for controlling fugitive emissions
 - i. Vehicle movement shall be minimized / eliminated by implementing mechanical operation.
 - ii. All the vehicles involved in transportation of cargo shall be covered with tarpaulin.
 - iii. 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.
 - iv. Based on traffic density/ vehicular movements anticipated from the port, parking facilities shall be provided.
- 25.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.
- 26.The facility shall maintain the following:
 - a. The facility shall provide cladding / cover to the screen, conveyors and crusher.
 - b. Sprinklers shall be provided to suck emissions at transfer points of conveyors.
 - c. The facility shall maintain ambient air quality within the Board standards.
 - d. The facility shall co-ordinate with traffic police and GVMC for regular cleaning of roads upto National Highway to suppress the dust emissions.

General:

- 27.The facility shall not handle any un-consented cargo and not exceed the quantities mentioned in this order, without CTE & CTO order of the Board.
- 28.The facility shall not dispose any non-hazardous waste outside the facility premises. The facility shall dispose other non-hazardous wastes as per the disposal option specified below:

S.No	Name of the solid waste	Quantity	Method of Disposal
1.	Domestic solid waste	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC authorities
2.	Discarded material, plastic material	10.25 TPM	Shall be disposed to authorised recyclers only
3.	Sludge from STP	1.165 TPM	Shall be composted and used in green belt program

- 29.The facility shall maintain the following records and the same shall be made available to the inspecting officers of the Board:
 - a. Cargo handling details.
 - b. Quantity of Effluents generated, treated, recycled/reused and disposed to CETP.
 - c. Log Books for pollution control systems.

- d. Characteristics of effluents and emissions.
- e. Hazardous/non-hazardous solid waste generated and disposed.
- f. Inspection book.
- g. Manifest copies of effluents / hazardous waste.
- 30. The following rules and regulations (as amended and upgraded from time to time) notified by the MoEF&CC, 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, 2022.
 - d. Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
 - e. Fly Ash Notification, 2016.
 - f. Battery Waste Management Rules, 2022.
 - g. E-Waste (Management) Rules, 2022.
 - 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.
 - k. Bio Medical Waste Management Rules, 2016.
- 31. Spillage of fuel / engine oil and lubricants from the site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.
- 32. 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.
- 33. 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.
- 34. The facility shall obtain prior permission from MoEF&CC, GoI and APPCB for any changes in the cargo type / capacity.
- 35. The facility shall comply with the conditions stipulated in the EC order dt.24.12.2021 issued by the MoEF, CC & GoI & CTE orders dated 02.03.2012 & 16.08.2022 and CTO orders dated 13.01.2016, 22.08.2023 issued by APPCB.
- 36. The facility shall maintain green belt as stipulated in the EC order.
- 37. The facility shall maintain valid PLI policy which includes Environmental Relief Fund (ERF) and submit copy to RO, Visakhapatnam on yearly base.
- 38. The facility shall maintain 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 CTO; and exhibit the CTO order at a prominent place in the factory premises, as per Hon'ble Supreme Court order.
- 39. The facility shall strictly comply with the directions of the Hon'ble NGT issued, if any, in O.A. No .571/2022.
- 40. The conditions are stipulated without prejudice to the rights and contentions of this Board in any Hon'ble Court of Law.

Special conditions:

- 41. Fire detection and fire fighting facilities with adequate water storage facility shall be

provided in fire prone area in consultation with competent authorities.

42. 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.
43. The facility 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.
44. The facility shall extend training to the working personnel for the prevention of accidents and necessary antidotes to ensure safety, as per the MSIHC Rules, 1989.
45. The facility 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.
46. The facility shall submit Risk analysis and risk assessment covering worst scenario clearly describing impact within the facility premises and outside the facility premises and emergency response system.
47. The facility 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(2)]

[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 un authorised 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.
10. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.
11. The authorised person shall not store hazardous waste for more than 90 days as per the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016.
12. The authorised person 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 buy back basis.
13. The authorised person 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.
14. The authorised person shall maintain proper records for Hazardous & 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 6 (5) of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016 and amendments thereof by June 30th for the period ensuring 31st March of the year.
15. The authorised person shall submit the condition wise compliance report of the conditions stipulated in Schedule A, B &C of this Order on half yearly basis to Board office and concerned Regional office.
16. The industry shall route all the hazardous waste through M/s. APEMC.

B SREEDHAR IAS, MS(BS), O/o MEMBER SECRETARY-APPCB

To

**M/s. Adani Gangavaram Port Limited,
(Formerly Gangavaram Port Limited)
Gangavaram (V), Pedagantyada (M),
Visakhapatnam District
E-mail: jyothi.dantuluri@adani.com,**

ADANI GANGAVARAM PORT LIMITED
COMPLIANCE OF CONSENT TO OPERATE & HAZARDOUS WASTE
AUTHORISATION ORDER
ORDER NO. APPCB/VSP/113/CTO/HO/2009, Date: 22.08.2024.
FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

SCHEDULE-A

S.No.	CONDITION	COMPLIANCE
1.	Any up-set condition in any industrial plant/ activity of the facility, 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.	Noted the condition and will be followed.
2.	The facility 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. • AGPL has established and operating STP of 30 KLD and 5 KLD capacities. Additionally, 15 KLD capacity of STP has completed construction and commissioning is under progress, to treat the domestic sewage generated within the Port and carrying out the analysis of the treated water through a 3rd party laboratory and submitting the reports to APPCB on monthly basis and to MoEF&CC on Half-yearly basis. • As per the reports, the values are within the stipulated standards. • Being a Port activity, no Chimneys exist.
3.	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.	Noted the condition.
4.	The facility shall ensure that there shall not be any change in the process technology, source & composition of raw materials and scope of working without pi or approval from the Board.	Noted the condition and will be followed.
5.	The applicant shall submit Environment statement in Form V before 30 th September every year as per Rule No.14 of E (P) Rules, 1986 and amendments thereof.	We will submit Environment statement in Form V before 30 th September every year as per Rule No.14 of E (P) Rules, 1986.

ADANI GANGAVARAM PORT LIMITED
COMPLIANCE OF CONSENT TO OPERATE & HAZARDOUS WASTE
AUTHORISATION ORDER
ORDER NO. APPCB/VSP/113/CTO/HO/2009, Date: 22.08.2024.
FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

6.	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 CTO conditions for obtaining Consent & HW Authorization of the Board.	Noted the condition and will be followed.
7.	The facility 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 / end / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.	Noted the condition and will be followed.
8.	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 Aid Prevention and Control of Pollution) Act, 1981.	Noted the condition.
9.	The facility 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.	Noted the condition.
10.	The facility may explore the possibility of tapping the solar energy for their energy requirements.	We are in the process of power purchase agreement from renewables (Wind and Solar) through AP Transco via Interstate power Transmission system. 2.5 Megawatt purchased from Kavda.
11.	The facility should educate the workers and nearby public of possible accidents and remedial measures.	We are conducting safety TBT & training on regular basis to the employees, port users and Mock drills periodically.

ADANI GANGAVARAM PORT LIMITED
COMPLIANCE OF CONSENT TO OPERATE & HAZARDOUS WASTE
AUTHORISATION ORDER
ORDER NO. APPCB/VSP/113/CTO/HO/2009, Date: 22.08.2024.
FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

SCHEDULE-B

The issue of CTO&HWA (Expansion) to the facility was placed in the Consent Management Committee meeting held on 08.08.2024. The facility shall comply with the following conditions:

1.	The facility shall install the digital display board at port premises.	We have installed digital display board at port premises.
2.	The facility shall ensure the energy conservation measures by solar power generation.	We are in the process of power purchase agreement from renewables (Wind and Solar) through AP Transco via Interstate Power Transmission.

3. The facility shall comply with the Task Force directions dated 27.04.2023, and conditions stipulated in CTO order dated 22.08 2023 and the control measures proposed by the facility as committed vide letter dated 05 08.2024. The details are as follows:

S.No.	Project Details	Project Term	Target Date	Status
1.	Replacement of the existing 3 No. of CAAQM Stations with Beta Ray Attenuation Technology	Short Term	November, 2024	Complied
2.	Separate / individual digital water meters to be provided at Critical locations	Short Term	November, 2024	Complied
3.	Replacement of existing Analog meters with Digital Water Flow Meters for 2 STP Outlet and New tyre washing outlet purpose.	Short Term	November, 2024	
4.	Replacement of existing Analog meters with IOT and digital flow meters.	Short Term	November, 2024	
5.	DG set retrofitting as per the CPCB / SPCB directions to the existing DG sets	Short Term	November, 2024	Complied
6.	Pre & Post dredging marine ecological study to be taken-up separately.	Short Term	January, 2025	Complied
7.	Extension of the wind break wall provided towards Gangavaram (V) for another 350 meters.	Medium	March, 2025	An existing 579 m wind wall has been completed, and a new extension of 434 m is under construction. Out of the

ADANI GANGAVARAM PORT LIMITED
COMPLIANCE OF CONSENT TO OPERATE & HAZARDOUS WASTE
AUTHORISATION ORDER

ORDER NO. APPCB/VSP/113/CTO/HO/2009, Date: 22.08.2024.
FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

					434 m extension, 240 m of the wind wall has been completed along the Gangavaram village side up to a height of 10 m.
8.	In addition to the closed shed for storage of waste oils & other solid wastes, additional storage shed for storage of Non-Hazardous and Hazardous waste to cater the storage needs for 3 months storage	Long Term	12 Months	Complied	
9.	Under Mechanization & Modernization – to upgrade the Stack yards with MDSS System in addition to the existing 176 no. of PLC based MDSS System	Long Term	18 Months	Complied	
10.	Further strengthening the existing drainage system along with collection pits.	Long Term	18 Months	Complied & 4.8 KM drainage system done.	
11.	To control the fugitive emissions, supporting with rows of greenbelt, propose to provide windshields around the individual operational areas.	Long Term	12 Months	For the FY 2025-26 AGPL completed plantation of 42,923 samplings. Greenbelt has been developed along Gangavaram village side with a height of 10 meters.	

ADANI GANGAVARAM PORT LIMITED
COMPLIANCE OF CONSENT TO OPERATE & HAZARDOUS WASTE
AUTHORISATION ORDER

ORDER NO. APPCB/VSP/113/CTO/HO/2009, Date: 22.08.2024.
FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

	12.	All the existing Phase – I & II stack yards intermediate peripheral retaining wall for each stack pile in the yards for further protection of stock piles.	Long Term	18 Months	Being Complied. 2160 meters retaining wall completed at yard side.

Water Pollution:

4. The source of water is Visakhapatnam Industrial Water Supply Co. The following is the permitted water consumption:

S.No.	Purpose	Quantity (KLD)
1	Cooling	50
2	Manufacturing, Packing and filling	120
3	Boiler	50
4	Drinking	10
5	Domestic	20
Total		250 KLD

Separate meters shall be maintained for assessing the quantity of water used for each of the purposes mentioned above purpose.

Compliance: The source of water is getting from Visakhapatnam Industrial Water Supply Co and we are not exceeding the water consumption limits as prescribed by the Board authorities.

5. The effluent discharged shall not contain constituents in excess of the tolerance limits mentioned below:

Sl.No.	Parameter	Limiting Standards (mg/l except BOD)
1	BOD	100
2	COD	500
3	Total Suspended Solids	100
4	Total Dissolved Solids	1000
5	Chloride	2500
6	Sulfate	2500
7	Ammonia Nitrogen	10
8	Nitrate Nitrogen	45
9	Phosphate	1
10	Fluoride	1
11	Cyanide	0.5
12	Hexachlorocyclopentadiene	0.1
13	Hexachlorobenzene	0.1
14	Heptachlorocyclopentadiene	0.1
15	Heptachlorobenzene	0.1
16	Dieldrin	0.1
17	DDT	0.1
18	Endrin	0.1
19	Aldrin	0.1
20	Chlordane	0.1
21	Heptachlor Epoxide	0.1
22	Heptachlor Hydrolysis Product	0.1
23	Heptachlor Isoleucine	0.1
24	Heptachlor Isomer	0.1
25	Heptachlor Lactone	0.1
26	Heptachlor Methide	0.1
27	Heptachlor Nitrile	0.1
28	Heptachlor Oxide	0.1
29	Heptachlor Sulfide	0.1
30	Heptachlor Triene	0.1
31	Heptachlor Triene Isomer	0.1
32	Heptachlor Triene Isomer	0.1
33	Heptachlor Triene Isomer	0.1
34	Heptachlor Triene Isomer	0.1
35	Heptachlor Triene Isomer	0.1
36	Heptachlor Triene Isomer	0.1
37	Heptachlor Triene Isomer	0.1
38	Heptachlor Triene Isomer	0.1
39	Heptachlor Triene Isomer	0.1
40	Heptachlor Triene Isomer	0.1
41	Heptachlor Triene Isomer	0.1
42	Heptachlor Triene Isomer	0.1
43	Heptachlor Triene Isomer	0.1
44	Heptachlor Triene Isomer	0.1
45	Heptachlor Triene Isomer	0.1
46	Heptachlor Triene Isomer	0.1
47	Heptachlor Triene Isomer	0.1
48	Heptachlor Triene Isomer	0.1
49	Heptachlor Triene Isomer	0.1
50	Heptachlor Triene Isomer	0.1

Complied:

- AGPL established & operating 2 No. of Sewage Treatment Plants of 1 X 30 KLD & 1 X 5.0 KLD to treat the domestic sewage generated within the Port and carrying out the analysis of the treated water through a 3rd party laboratory and submitting the reports to APPCB on monthly basis and to MoEF&CC on Half-yearly basis.
- As per the reports, the values are within the stipulated standards.

6.	The facility shall maintain Electro Magnetic flow meters with totalizers for water consumption, effluent generation mentioned in the Order.	Being complied.
7.	The facility shall provide & maintain separate energy meters for Sewage Treatment Plant (STP) and for Air pollution Control equipment to record energy consumption.	We are maintaining separate energy meters for Sewage Treatment Plant.
8.	The effluent / sewage shall be treated to the on and for irrigation standards, as stipulated under schedule VI 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	Being complied.

	of greenery, dust suppression, re-used for various purposes within the premises.	
9.	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.	We are carrying out the Terrestrial & Marine parameters analysis on fortnight basis through party NABL agency and submitting the analysis reports to APPCB on monthly basis and to MOEF &CC on Half yearly basis. Monitoring reports are attached as annexure.

Air Pollution:

10.	The facility 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.	We have installed & operating 4 No. of CAAOM stations were installed to measure the parameters PM₁₀, PM_{2.5}, SO₂, NO_x, CO at the following locations and data connected to APPCB website Downwind directions towards habitation i. Administrative office towards H. B. colony (Station 1): ii. Project Site office building towards Venkannapalem (Station2) iii. Watch tower - 4 towards Gangavaram village (Station-3). Upwind direction towards RINL iv. Silo (upwind directions RINL) - Station - 4 As per the data, the SPM values are within Board standards. CAAQM analysis report are attached as annexure.

11.	The facility shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10 mm)-100 mg/ rn³; PM_{2.5} (Particulate Matter size less than 2.5 mm) - 60 mg/ m³; SO₂-80 mg/m³; NO_x-80 mg/m³, outside the factory premises at the periphery of the facility. Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No. 8-29016/20/90/PCI-I, dated 18.11.2009. Noise Levels: Daytime (6 AM to 10 PM)- 75 dB (A) Night time (10 PM to 6 AM) - 70 dB (A)	Being complied. We have installed & operating 4 No. of CAAOM stations were installed to measure the parameters PM₁₀, PM_{2.5}, SO₂, NO_x, CO at the following locations and data connected to APPCB website Downwind directions towards habitation i. Administrative office towards H. B. colony (Station 1): ii. Project Site office building towards Venkannapalem (Station2) iii. Watch tower - 4 towards Gangavaram village (Station-3). Upwind direction towards RINL iv. Silo (upwind directions RINL) - Station - 4 As per the data, the SPM values are within Board standards. CAAQM analysis report are attached as annexure.
12.	The facility shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S R. 804 (E), dated 03.11.2022, 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 GSR.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.	We are permitted to operate the following capacities of DG sets: 3x320 KVA, 3x1250 KVA, 1x800 KVA, 2 x380 KVA, 1x200 KVA DG Sets which are being used for emergency power backup.
13.	The facility shall comply with the noise limits for DG sets (upto 1000 KVA) as per G.S.R.520 (E), dated 01.07.2003 and G S.R. 448 (E), dated 12.07.2004 under the Environment (Protection) Act Rules.	We are permitted to operate the following capacities of DG sets: 3x320 KVA, 3x1250 KVA, 1x800 KVA, 2x380 KVA, 1x200 KVA DG Sets which are being used for emergency backup.
14.	The facility shall maintain 4 CAAQMs with online connectivity to APPCB and maintain records.	Being complied.

15.	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 ₁₀ and PM _{2.5} in reference to PM emission, and SO ₂ and NO _x in reference to SO ₂ and NO _x emissions) within and outside the project area at least at four locations, covering upwind and downwind directions.	Being complied. We have installed & operating 4 No. of CAAOM stations were installed to measure the parameters PM₁₀, PM_{2.5}, SO₂, NO_x, CO at the following locations and data connected to APPCB website Downwind directions towards habitation i. Administrative office towards H. B. colony (Station 1): ii. Project Site office building towards Venkannapalem (Station2) iii. Watch tower - 4 towards Gangavaram village (Station-3). Upwind direction towards RINL iv. Silo (upwind directions RINL) - Station - 4 As per the data, the SPM values are within Board standards. CAAQM analysis report are attached as annexure.
16.	The facility shall not stack the materials more than 12 meters height where MDSS system is available and shall maintain stack height of 10 meters at manual stack yards.	Being complied stacking within the limit.
17.	The facility shall maintain wind breaking wall all along the Gangavaram village side up to a height 10 mts as wind speed is high in this area.	An existing 579 m wind-breaking wall has been completed, and an additional 434 m extension has been taken up. Out of the 434 m, 240 m has been completed to prevent dust nuisance towards the habitation area and to maintain an approximately 10 m wide green belt along the port compound wall near the Gangavaram village side.
18.	The facility shall not establish any other stock yards other than designated stock yards.	Being followed.
19.	The facility shall maintain Telescopic chute at ship loading points.	We are maintaining Telescopic chute at ship loading points.
20.	The facility shall maintain dusty cargo operations if the wind velocity crosses 20 KMPH and all MDSS sprinklers shall start immediately to maintain AAQ standards.	Being followed.

21.	The facility shall maintain fully mechanized handling equipment for loading and unloading operations for dusty cargo to the maximum extent possible.	Being complied.
22.	The facility shall handle alumina in completely closed enclosures.	Being complied.
23.	The facility shall maintain comply with the following for controlling fugitive emissions: 1. Vehicle movement shall be minimized / eliminated by implementing mechanical operation. 2. All the vehicles involved in transportation of cargo shall be covered with tarpaulin. 3. 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. 4. Based on traffic density/ vehicular movements anticipated from the port, parking facilities shall be provided.	Being complied. a. Vehicle movement has been minimized by establishing mechanical conveyor system for handling coal & Iron ore to prevent the spillage of cargo and provided closed hoods for the conveyor system to curb fugitive emissions of coal/iron ore particles into the air. b. Stacker cum re-claimers is being used for loading and unloading the coal. The rail way wagons are being loaded mechanical yard. c. Established 16 No's of semi mechanized truck tarpaulin covering stations at various locations within the port to facilitate and ensure all the outgoing cargos by trucks are covered with tarpaulin. d. Ensuring that the tarpaulin is covered in sides of the truck and tightly tied with rope so that the tarpaulin should not be uncovered while traveling until the truck area reaches the destination without any transit spillage. e. We have provided dedicated truck/tyre washing facility to wash all the outgoing vehicles. f. We have provided dedicated truck parking facilities.
25.	All the transfer points, loading / unloading points and conveyor systems shall be housed completely with leak proof arrangements. Adequate dust suppression and containment measures shall be implemented for effective control of fugitive emissions.	We have established mechanical conveyor system for handling coal and Iron ore to prevent the spillage of cargo and provided closed hoods for the conveyor system to curb fugitive emissions of coal {iron ore particles into the air.
26.	The facility shall maintain the following: a. The facility shall provide cladding / cover to the screen, conveyors and crusher.	a. Complied. b. We have provided cladding / cover to the screen, conveyors and crusher. c. Being complied.

	b. Sprinklers shall be provided to suck emissions at transfer points of conveyors. c. The facility shall maintain ambient air quality within the Board standards. d. The facility shall co-ordinate with traffic police and GVMC for regular cleaning of roads upto National Highway to suppress the dust emissions.	d. Being complied.

General:

27.	The facility shall not handle any un-consented cargo and not exceed the quantities mentioned in this order, without CTE & CTO order of the Board.			Being complied. We have handled the consented cargoes 2.75 MMT during September 2025.
28.	The facility shall not dispose any non-hazardous waste Outside the facility premises. The facility shall dispose other non-hazardous wastes as per the disposal options specified below:			Being complied. 1. The domestic solid waste is being collected and disposed to GVMC MSW Site on regular basis. 2. The plastic waste is being disposed to APPCB Authorized recycler. 3. The STP Sludge is being utilized as manure to the greenbelt within the port premises.
	S. NO	Name of the solid waste	Quantity	
	1.	Domestic solid waste	13.60 TPM	
			Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC authorities	
	2.	Discarded material, plastic material	10.25 TPM	Shall be disposed to authorised recyclers only
	3.	Sludge from STP	1.165 TPM	
			Shall be composted and used in green belt program	

29.	The facility shall maintain the following records and the same shall be made available to the inspecting officers of the Board: - Cargo handling details. - Quantity of Effluents generated, treated, recycled/reused and disposed to CETP. - Log Books for pollution control systems. - Characteristics of effluents and emissions. - Hazardous/non-hazardous solid waste generated and disposed. - Inspection book. - Manifest copies of effluents / hazardous waste.	Being complied.
30.	The following rules and regulations (as amended and upgraded from time to time) notified by the MoEF&CC, 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, 2022. - Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989. - Fly Ash Notification, 2016. - Battery Waste Management Rules, 2022. - E-Waste (Management) Rules, 2022. - Construction and Demolition waste Management Rules, 2016. - Solid Waste Management Rules, 2016. - The Public Liability Insurance Act, 1991 and its amendments thereof. - Bio Medical Waste Management Rules, 2016.	Being complied. - Noted and being a port activity, there will not be any organic pollutants. - Being complied and disposing the waste oil / Used Oil through APEMCL only. - Disposing the plastic waste to Authorized Recycler only. - Not handling any Hazardous chemicals. - Being port activity, no fly ash generation involved. - Disposing the used batteries to authorized recycler only. - Disposing the E-waste to the authorized recycler only. - Being complied. - The solid waste generated is being disposed to MSW Site on regular basis. - We are having Public liability insurance. PLI policy attached as annexure. - We are operating an OHC to provide first aid to the needy and the Bio- Medical waste is being disposed to M/S. Vasishta Environ Care, the authorized recycler.

31.	Spillage of fuel / engine oil and lubricants from the site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.	We are following the updated 01 spillage contingency plan & conducting mock drill from time to time. No spillage to sea.
32.	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.	We have established mechanical conveyor system for handling coal & Iron ore to prevent the spillage of cargo and provided cladding & closed hoods for the conveyor system to curb fugitive emissions of coal and iron ore particles into the air.
33.	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.	Being complied.
34.	The facility shall obtain prior permission from MOEF&CC, GOI and APPCB for any changes in the cargo type / capacity.	Noted and being complied.
35.	The facility shall comply with the conditions stipulated in the EC order dt.24.12.2021 issued by the MOEF, CC & Gol & CTE orders dated 02.03.2012 & 16.08.2022 and CTO orders dated 13.01.2016, 22.08.2023 issued by APPCB.	Noted and being complied.

36.	The facility shall maintain green belt as stipulated in the EC order.	➤ AGPL has completed plantation of 42,923 saplings during the financial year 2025-26. ➤ As of now we have developed plantation with more than 5-5 Lakhs saplings in about 320 acres within the port premises. ➤ Maintaining 50 m width of green belt towards North and North-West direction with special emphasis towards habitation i.e., HB Colony, Peda Gantyada,, Venkannapalem, Kongapalem & Gangavaram village. ➤ Maintaining thick greenbelt at port approach road, railway track side and at truck parking area along the wind breaking wall towards HB colony. ➤ Maintaining exclusive nursery to improve the green belt on continuous basis.
37.	The facility shall maintain valid PLI policy which includes Environmental Relief Fund (ERF) and submit copy to RO, Visakhapatnam on yearly base.	We are having a valid Public liability Insurance Policy No: 41107066, dated 17.09.2025, Valid till 14/09/2026 With Premium Of Rs5161/- & ERF of Rs.5161/-. PLI copy attached as annexure.
38.	The facility shall maintain 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 CTO; and exhibit the CTO order at a prominent place in the factory remises as per Hon'ble Supreme Court order.	Complied.
39.	The facility shall strictly comply with the directions of the Hon'ble NGT issued, if any, in O.A. No .571/2022.	Complied. We have achieved 100% compliance and submitted the latest status report to AP PCB on 23.04.2026 for the period from 1st January 2026 to 31st March 2026.

		Acknowledgment copy attached as annexure.
40.	The conditions are stipulated without prejudice to the rights and contentions of this Board in any Hon'ble Court of Law.	Noted the condition.

Special conditions:

41.	Fire detection and firefighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.	Being complied.
42.	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.	An onsite and offsite emergency action plan has been prepared and submitted to APPCB, RO VSP. Organizing periodical mock drills to draw the attention of the employees and to create the awareness of safety issues. ➤ Organizing periodical fire and safety training 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. ➤ Organizing Safety awareness at workplace. ➤ Conducting Tool Box Talk & Training at work place involving employees & associates on regular basis.

43.	The facility 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.	An onsite emergency action plan has been prepared and submitted to APPCB, RO, and VSP. Port is not falling under factory act. However, we are doing the audit of ISO 45001 (OHS) by certified external party. Certified external certificate attached as annexure. Mock drills are being conducted periodically.
44.	The facility 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. ➤ Organizing periodical fire and safety training 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. ➤ Organizing Safety awareness at workplace. ➤ Conducting Tool Box Talk & Training at work place involving employees & associates on regular basis.
45.	The facility 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.	Noted and periodical calibration is going on as per its schedule.
46.	The facility shall submit Risk analysis and risk assessment covering worst scenario clearly describing impact Within the facility premises and outside the facility premises and emergency response system.	We are maintaining onsite emergency plan and updated during July-2024. Also maintaining HIRAC and EA register.
47.	The facility 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	We are maintaining onsite emergency plan and updated during July-2025. Onsite emergency plan attached as annexure.

	Of hazardous chemicals is equal to or, in excess of the threshold quantities specified in schedule 2 & 3 of MSIHC Rules, 1989.	

SCHEDULE-C

S.No.	Condition	Compliance
1.	The authorized person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.	Being complied.
2.	The authorization or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.	Being complied.
3.	The person authorized shall not rent, lend, sell, transfer or otherwise transport the Hazardous and other wastes except what is permitted through this authorisation.	Being complied.
4.	Any un authorised change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorisation.	Noted the condition and will be followed.
5.	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.	Noted the condition and will be followed.
6.	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".	Noted the condition and will be followed.
7.	It is the duty of the authorized person to take prior permission of the State pollution Control Board to close down the facility.	Noted the condition and will be followed.
8.	An application for the renewal of an authorization shall be made as laid down under these Rules.	Noted the condition and will be followed.
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.	Noted the condition and will be followed.

10.	Annual return shall be filed by June 30 th for the period ensuring 31 st March of the year.	For the FY 2024-25, Annual Returns viz., Form-3 E-Waste, Form-4 Hazardous Waste & Form-8 Used batteries returns were submitted on 02.06.2025. Form- 4 and Form-5 attached as annexure.
11.	The authorized person shall not store hazardous waste for more than 90 days as per the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016.	Noted the condition and will be followed.
12.	The authorized person 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 buy back basis.	Used battery returns Annual returns Form-8 for the period of 2024-2025 submitted on 02.06.2025.
13.	The authorized person shall maintain 7 copy manifest system for transportation Of waste generated and a copy shall be submitted to concerned Regional Office of APPC3. The driver Who transports Hazardous Waste should be we acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) card.	The Used / Waste oil is being disposed through APEMCL duly following the SOP.
14.	The authorized person shall maintain proper records for Hazardous & Other wastes stated in Authorization in Form-3 i.e., quantity of Incinerable waste, and disposal waste, recyclable waste etc., and file annual returns in Form- 4 as per Rule 6 (5) of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016 and amendments thereof by June 30 th for the period ensuring 31 st March of the year.	For the FY 2024-25, Annual Returns viz., Form-3 E-Waste, Form-4 Hazardous Waste & Form-8 Used batteries returns were submitted on 02.06.2025. Form- 4 and Form-5 attached as annexure.
15.	The authorized person shall submit the condition wise compliance report of the conditions stipulated in Schedule A, B &C of this Order on half yearly basis to Board office and concerned Regional office.	Now, we are submitting CTO & HWA half yearly compliance report for the period of 01st October 2025 to 31st March 2026 to the Integrated Regional Office {IRO}, MoEF&CC, Vijayawada through online in PARIVESH portal.
16.	The industry shall route all the hazardous waste through M/S. APEMC.	We are routing all the hazardous waste through M/S. APEMC.

ANNEXURE-1
CSR ACTIVITY DETAILS FY-2025-2026

Adani foundation

CSR Activities – FY 2025-26.

Adani foundation – CSR Staff

S. No	Name	Designation
1	Mr. Rajesh Ranjan	Regional Head
2	Mr. Ch. Ramesh babu	Project manager
3	Mr. Y. Prasada Rao	Junior Project officer
4	Mr. N. Teja	Sports coach
5	Mr. Y. B. Manoj Kumar	Sports coach
6	Mr. Y. Raju	Animator
7	Mrs K. Krishnaveni	Animator
8	Ms. B. Rama	Animator
9	Ms. Likhitha	Animator

S. No	Name	Designation
10	Mrs. Sandhya	AEEC Teacher
11	Mr. Ramakrishna	AEEC Teacher
12	Mr. Bala Krishna	AEEC Teacher
13	Mr. Vijay Kumar	AEEC Teacher
14	Ms. Saritha	AEEC Teacher
15	Mrs. Ashwini	AEEC Teacher
16	Mrs. Naga Yasoda Mani Ratnam	AEEC Teacher
17	Mr. K Yellaji	AEEC Teacher
18	Mrs. S. Chintamani	Skill Development Teacher

Corporate Social Responsibility - Adani Gangavaram Port

Education (Edu)



- Support to Schools
- 6 Evening education centers initiated with 468 students.
- Provided Content Examination materials & stationary
- Infrastructure facilities .
- Soft skills & awareness Programes
- important days celebrations .

Community Health (CH)



- Health Camps
- Mobile Healthcare Units
- Eye camps in 4 govt schools covered more than 1000 students.
- MHCU implemented in 38 villages covered with 25233.
- Supported to The KGH moderated pediatric center.
- General Medical Awareness program

Sustainable Livelihood Development (SLD)



- Women Empowerment
- General awareness and trainings for SLD women
- Dedicated 2 travel buses to the fishing community .
- FY 2024-25 , 36 SLD Support to the women .
- FY 2025-26, 25 SLD support to the women.
- 233 direct beneficiaries and indirect beneficiaries 1165 .
- Establishment of Skill Development center .
- 45 Beneficiaries.

Climate Action (CA)



- Solar lights installation
- Water Conservation through VMRD in Pendurthi and Simhachalam .
- Plantation of 12500 units .

Community Development (CD)



- Rural sports 383 Beneficiaries .
- GVMC, 7Star & JPM ground Development.
- support for National boxing championship .
- Kabaddi support for 51St National Championship.
- Support for Yuva Kabaddi series.
- 5 RO water plant supported.
- Sitting Benches

Education and Infra Support

Adani Evening Education Centres

A total of **468 students** have benefited from the launch of Education Centers **2 in Gangavaram, 2 in Dibbapalem and 2 in Bapujee Nagar**. These 6 centers provide focused crash courses for 10th class students and comprehensive tuition support for students from classes 1 to 10, **reinforcing Adani's commitment to community education and academic empowerment.**

3 RO water plant

Established Purified Drinking Water Plant at 1). Jawahar Navodaya Vidyanikethan, Madurawada ,2.) ZPHS Nadupuru, 3) ZPHS Gangavaram

Provided Examination Material and Stationary.

Provided Examination Material 7TH to 10TH ,Competitive examination material for the youth of DPM , stationary and sports kits provided to all 6 AEEC's .



English Communication program .

132 students are benefiting from English Communication program through Karadi path set up at MPP School Dibbapalem, Jalari Pallipalem, and ZPHS & Junior college Gangavaram—equipped with TVs and inverter backup to support early English language development.

AEEC chairs Provided

30 study chairs Provided to AEEC's Bapuji Nagar, Dibbapalem .

Soft skill and Awareness Programs

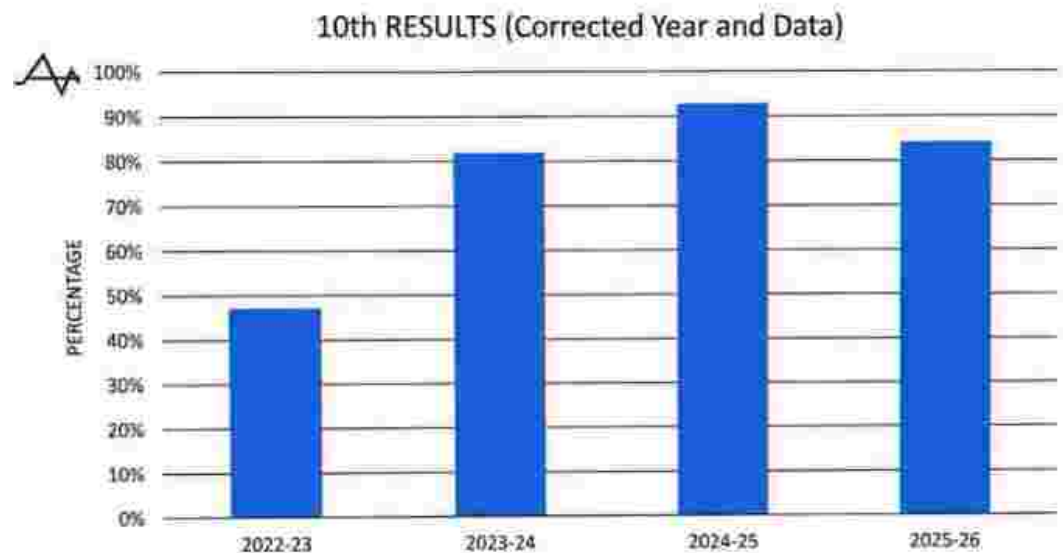
- Conducted 5's and Fire and safety programmes at ZPH School & Jr college Total 52 students participated
- Fire safety programe conducted at ZPH School & Jr college Gangavaram and PHC Gangavaram, Total Participants **72 students 15 hospital staff.**

Special Days Celebrations.



Result for 10th standard

- In 2022-23 the result of High school and higher secondary school is too low but after the AEEC's started the result increased, and in 2023-24 10th results increased to 82% from the 41% and now the results increased to 93% 2025 the success path credit goes to the AEEC's.
- 10th results:
- 2022-23 : 41%
- 2023-2024 : 82%
- 2024-2025 : 93%
- And this year 2025-26 = 84%



Community Health

Mobile Health Care Units (MHCU)

Through MHCU services around 38 villages 25233 beneficiaries received free screenings and medicines.

Free Eye Camps

Vision eye camp conducted at ZPH School & Jr college Gangavaram & Nadupur and MPP School Dibbapalem. screening **1001** people; 99 free spectacles received.

GENERAL MEDICAL AWARENESS PROGRAM

From health education initiative 32 doorstep visits to provide awareness to understand common diseases, learn preventive care ,improve lifestyle habit, recognize early warning signs for illness. Diabetic and hemoglobin checkup was done for 673 persons.



Sustainable Livelihood

Supported 43 women groups to establish Small shops business in Gangavaram & Dibbapalem and neighbour villages to generate / enhance livelihood.

Supported 18 individual and Specially abled people to establish small businesses.

Through the women entrepreneurship program, **509 women** have successfully increased their daily income by ₹400–₹500, enhancing financial stability and livelihood opportunities. Around 2035 indirect beneficiaries.

Skill development program By creating sustainable livelihood pathway through tailoring initiative at Gangavaram village with industry relevant stitching ,design skill sand micro-entrepreneurship.

Bus facility to fisher folks 2 52- seater buses given to Gangavaram, Dibbapalem and jalaripallipalem by which around 3500people are getting benefited.



Adani Rural sports meet 2025-2026.

The Adani Foundation's Rural Sports Development program has successfully engaged **856+ youth** athletes from Gangavaram, Dibbapalem, and adjoining port neighborhood villages, promoting grassroots talent across **Cricket, Volleyball, Badminton, Ball Badminton and Boxing**. Through structured coaching, infrastructure support, and competitive exposure, the initiative fosters physical fitness, discipline, and aspiration among rural youth.



Rural sports development

• Participations:

- kavya participated in SGFI nationals at Himachal 2026.
- B.divya participated in u19 kabaddi national championship at Delhi 2025.
- U.Amar participated in U15 national championship and U17 National championship at Nagpur 2026.
- N.Teja participated in senior national kabaddi championship at Gujarat 2026.

Achievements:

- Dhanish won gold medal international bodybuilding championship at Nepal 2026.
- Harinadh selected for SAI (sports authority of India) academy.
- K.sai lohith won silver medal at junior national championship 2026.
- N.Narendra won gold medal and best boxer award at junior national boxing championship.
- Narendra selected for Asian Games at Uzbekistan from 1st to 12th may 2026.



Rural Sports Development

Support to sports

- Support for **u19 Girls** national championship 2026 with tracksuit, kabaddi uniform, mat shoes, for all selected 13 players.
- Support for national camp for **u19 national meet at Gangavaram** for 25 players with nutrition food.
- Support for **Yuva kabaddi series** to 28 players with tracksuits, playing kit, running shoes, and nutritional food for 15 days camp period.
- Support for **kavya** with tracksuit, playing kit and shoes selected for SGFI nationals at Himachal.
- Support for **U. Amar** with tracksuit, boxing gloves, boxing shoes for selecting to u17 national boxing championship Nagpur.
- Support for **U17 boys** with t-shirts for national selected players, Nagpur.
- Support for **dhanish** with tracksuit and travelling expenses for participating in international bodybuilding championship.



Climate Action – Environment Development

- **Plantation conducted** in villages institutions like PHCs, Schools & Sports grounds and parks. – **12,500 plants.**
- **Beach cleaning** conducted at Yarada & RK beach.
- **Beach nourishment activities** conducted at Yarada beach. **3,700** people benefited from the beach nourishment program.
- **Street Lighting 85 solar streetlights** installed across Gangavaram, Dibbapalem, Jalaripallipalem and neighbour villages.



Community Development – Gangavaram, dibbapalem and srinagr

Ground development GVMC , 7 star and jalaripallipalem grounds are developed .

Fitness Coaching Centre

Set up with a dedicated sports coach for Army, Navy, and Police recruitment practice, supporting **714 players**.

Multi-Sports Complex Established at dibbapalem

Promoting physical activity and youth engagement, benefitting **523 children**.

Sports Kits Provided

Distributed to encourage active participation in sports.

Seating Benches provided

24 Units provided at public places in Gangavaram and dibbapalem.

RO WATER PLANT 2 RO plants has been established at GVMC ground and collectrate .

Yoga Mandir and has been established at Gvmc ground Gangavaram. 2370 people used this mandir

Support to Infrastruacter

Infra support to Traffic police station, Pedagantyada, Marine Harbour ,Visakhapatnam, Civil supply Department circle-3, New Gajuwaka , police commissioner office ,Visakhapatnam



Awards Received

Adani Gangavaram port received the Award for P4 program(Public Private People Participation) under CSR for Zero poverty from the Government of Andhra Pradesh. The Award received from Hon'ble minister sri Dola Sree Bala Veeranjanya Swami and Bheemili MLA Sri Ganta Srinivasa Rao and Visakha Dist collector Sri Harinderprasad IAS.



Adani Foundation - Gangavaram

CSR BUDGET Executive Summary

Sr No	Thematic Area	Budget 2025-26					Budget 2026-27		
		Capex	Opex	Total(Rs in Lakhs)	LE till 31 Mar' 26	% Likely Utilization	Capex	Opex	Total(Rs in Lakhs)
1	Education	0.00	56.05	56.05	27.43	49%	0.00	98.20	98.20
2	Community Health	0.00	34.28	34.28	35.86	105%	0.00	84.68	84.68
3	Sustainable Livelihoods	0.00	25.96	25.96	26.00	100%	0.00	26.50	26.50
4	Community Development	0.00	138.79	138.79	80.91	58%	0.00	186.23	186.23
5	Climate Action	0.00	929.75	929.75	927.51	100%	0.00	926.00	926.00
6	Admin	0.00	61.28	61.28	34.37	56%	0.00	67.73	67.73
	Total	0.00	1246.11	1246.11	1132.08	91%	0.00	1389.34	1389.34

ANNEXURE-2
CRISIS MANAGEMENT PLAN



ADANI GANGAVARAM PORT LIMITED

CRISIS MANAGEMENT PLAN

REVISED – 01st July 2025

IN CASE OF ANY EMERGENCY CONTACT:

SIGNAL STATION ON TEL	:	0891-2889999
EPABX	:	40605
FAX	:	0891-2703377
MOBILE	:	90002-34479
VHF	:	CH 16/14

IN CASE OF FIRE CONTACT:

PORT FIRE STATION ON TEL	:	7675900100
EPABX	:	40604
VHF	:	CH – 14

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ISSUE NO: 1

DATE: 01/07/2008

REV: 13

REV DATE: 01/07/2025

2.0 Revision summary

ISSUE NO.	REVISION NO.	REVISION DATE	REFERENCE
01	00	19.05.2011	Vetted by the office of the Commissioner of Police, Visakhapatnam City and changes as recommended vide letter no. C.S.B. 352/S2/XI/2011 were incorporated.
01	01	01.04.2013	Plan revised with updated information, designations and contact details.
01	02	01.04.2014	Plan revised with updated information, designations and contact details.
01	03	01.04.2015	Plan revised with updated information, designations and contact details.
01	04	01.04.2016	Plan revised with updated information, designations and contact details.
01	05	01.04.2017	Plan revised with updated information, designations and contact details.
01	06	01.01.2019	Vetted by the office of the Addl. Director General of Police, Intelligence, AP, Vijaywada vide letter no. I.D. No.5598-1/SW-1/AP/2015-18 dated 17.05.2018. & Plan revised with updated information, designations and contact details.
01	07	01.01.2020	Plan revised with updated information, designations and contact details.
01	08	01.01.2021	Plan revised with updated information, designations and contact details.
01	09	01.01.2022	Plan revised with updated information, designations and contact details.
01	10	01.11.2022	Plan revised with updated information, designations and contact details.
01	11	01.11.2023	Plan revised with updated information, designations and contact details
01	12	01.07.2024	Plan revised with updated information, designations and contact details
01	13	01.07.2025	Plan revised with updated information, designations and contact details

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ISS E NO: 1

DATE: 01 07 2008

REV: 13

DATE: 01 07 2025

INDEX

SECTIONS	CONTENTS	PAGE NO. 1/4		
		SHEET NO.	REV. NO.	DATE
1	1.1 INTRODUCTION 1.2 RATIONALE OF CMP 1.3 OBJECTIVSE OF THE PLAN 1.4 SCOPE OF THE PLAN 1.5 MAKING OF THE CMP(METHODOLOGY) 1.6 ACTION PLAN-ACTIVATIO OF CMP 1.7 ALERT	1 of 3 1 of 3 1 of 3 2 of 3 2 of 3 3 of 3 3 of 3	13	01.07.2025
2	2.1 ORGANISATION STRUCTURE ORGANISATION CHART 2.2 CRISIS MANAGEMENT GROUP 2.3 CRISIS LEVEL 2.3A ACTION GROUP/CRISIS MGMT GROUP FOR ANY CONTINGENCY IN ADANI GANGAVARAM PORT LTD 2.4 EMERGENCY TEAM 2.5 ORGANISATIONAL RESPONSIBILITIES	1 of 14 2 of 14 2 of 14 3 of 14 4 of 14 5 to 14 of 14	13	01.07.2025
3	COMMUNICATION SYSTEM 3.1 COMMUNICATION COMMAND AND RESPONSE STRUCTURE	1 of 1	13	01.07.2025
4	EMERGENCY FACILITIES 4.1 EMERGENCY CONTROL ROOM 4.2 PORT FIRE FIGHTING RESOURCES 4.3 PORT OIL POLLUTION RESPONSE EQUIPMENT.	1 of 3 2 of 3 3 of 3	13	01.07.2025
5	EVACUATION 5.1 EVACUATION ACTION 5.2 EVACUATION ROUTES	1 of 2 2 of 2	13	01.07.2025

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ISSUE NO: 1

DATE: 01/07/2008

REV: 13

DATE: 01/07/2025

SECTIONS	CONTENTS	PAGE NO. 2/4		
		SHEET NO.	REV. NO.	DATE
6	MEDICAL AND FIRST AID RELIEF CENTRES 6.1 RELIEF CENTRE 6.2 SPECIALIST DOCTORS 6.3 USE OF ANTIDOTES FOR SELECTED POISONING 6.4 SOME COMMON INDUSTRIAL EXPOSURES AND THEIR FIRST AID TREATMENT	1 of 4 1 of 4 2 & 3 of 4 4 of 4	13	01.07.2025
7	FIRE & EXPLOSION-RESPONSE PLAN 7.1 ACTION PLAN IN CASE OF FIRE ON A SHIP ALONGSIDE BERTH 7.2 ACTION PLAN IN CASE OF FIRE ON SHIPS AT ANCHORAGE 7.3 ACTION PLAN IN CASE OF FIRE AT MOHP/MCHP	1 & 2 of 6 3 of 6 4 to 6 of 6	13	01.07.2025
8	OIL /CHEMICAL SPILL RESPONSE PLAN 8.1 ACTION PLAN IN CASE OF OIL SPILL/POLLUTION BY A VESSEL AT ANCHORAGE OR AT BERTH.	1 to 4 of 4	13	01.07.2025
9	NEIGHBOURING ORGANIZATIONS	1 of 2 2 of 2	13	01.07.2025
10	VESSEL ACCIDENTS RESPONSE PLAN 10.1 ACTION PLAN IN CASE OF GROUNDING OF A VESSEL IN PORT. 10.2 ACTION PLAN IN CASE OF COLLISION 10.3 ACTION PLAN IN CASE OF SINKING OF VESSEL WITHIN THE PORT	1 of 4 2 of 4 3 of 4 4 of 4	13	01.07.2025
11	UTILITY RESPONSE PLANS 11.1 ACTION PLAN IN CASE OF TOTAL FAILURE OF POWER SUPPLY. 11.2 ACTION PLAN IN CASE OF MAJOR EQUIPMENT FAILURE. 11.3 ACTION PLAN IN CASE OF CRISIS IN WATER SUPPLY. 11.4 ACTION PLAN IN CASE OF PERSON FALLING IN THE DOCK WATER.	1 of 6 2 of 6 3 to 5 of 6 6 of 6	13	01.07.2025

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ISS E NO: 1

DATE: 01 07 2008

REV: 13

DATE: 01 07 2025

SECTIONS	CONTENTS	PAGE NO. 3/4		
		SHEET NO.	REV. NO.	DATE
12	NATURAL CALAMITIES 12.1 ACTION PLAN IN CASE OF STORM WARNING. 12.2 ACTION PLAN IN CASE OF FLOOD. 12.3 ACTION PLAN IN CASE OF EARTHQUAKE. 12.4 ACTION PLAN IN CASE OF TSUNAMI 12.5 RELIEF WORK	1 to 7 of 11 7 of 11 8 & 9 of 11 10 of 11 11 of 11	13	01.07.2025
13	WAR/TERRORISM 13.1 BOMB THREAT 13.2 HOSTAGE SITUATION 13.3 ACTIVATION OF SHIP SECURITY ALERT SYSTEM 13.4 INTRUSION BY UN AUTHORISED BOAT 13.5 DECLARATION OF WAR	1 & 2 of 8 3 of 8 4 & 5 of 8 6 & 7 of 8 8 of 8	13	01.07.2025
14	CIVIL DISTURBANCE / LABOUR DISPUTE 14.1 CIVIL DISTURBANCE 14.2 LABOUR DISPUTE	1 of 2 2 of 2	13	01.07.2025
15	DE-ACTIVATION OF PLAN-RECOVERY-RE-ENTRY-RESTORATION	1 of 1	13	01.07.2025
16	TRAINING AND MOCK DRILLS	1 of 1	13	01.07.2025

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ISS E NO: 1

DATE: 01 07 2008

REV: 13

DATE: 01 07 2025

SECTIONS	CONTENTS	PAGE NO. 4/4		
		SHEET NO.	REV. NO.	DATE
APPENDIX-A	Department wise ACTION PLAN	1 to 5 of 5	13	01.07.2025
ANNEXURE-I	List of key telephone Nos. (AGPL)	1 to 2 of 2	13	01.07.2025
ANNEXURE-II	List of important telephone Nos. (Services)	1 & 2 of 2	13	01.07.2025
ANNEXURE-III	Telephone Nos. of State Govt. Officials.	1 of 1	13	01.07.2025
ANNEXURE-IV	List of Vizag Steel Plant- Fire & Safety Personnel	1 of 1	13	01.07.2025
ANNEXURE-V	List of Major Hospitals.	1 of 1	13	01.07.2025
ANNEXURE-VI	List of licensed blood banks.	1 of 1	13	01.07.2025
ANNEXURE-VII	List of Rehabilitation Centres.	1 of 1	13	01.07.2025
ANNEXURE-VIII	List of Neighbouring Organizations	1 & 2 of 2	13	01.07.2025
ANNEXURE-IX	List of Shipping Agents.	1 to 6 of 6	13	01.07.2025
ANNEXURE-X	List of Crisis Mgmt. Group & Action Group members	1 of 1	13	01.07.2025
ANNEXURE-XI	Chart of Weather Warnings.	1 & 2 of 2	13	01.07.2025
ANNEXURE-XII	Abbreviations	1 & 2 of 2	13	01.07.2025

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

OBJECTIVE

The enclosed document titled “CRISIS MANAGEMENT PLAN” is 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;

- 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..*
- The command, co-ordination and response organization structure along with efficient trained personnel.*
- The availability of port owned appropriate resources for handling emergencies and sources of additional resources from mutual aid partners.*
- Appropriate emergency response actions at port, district and state level.*
- Effective notification and communication channels and facilities.*
- Effective training of the participating team and all other concerned members.*



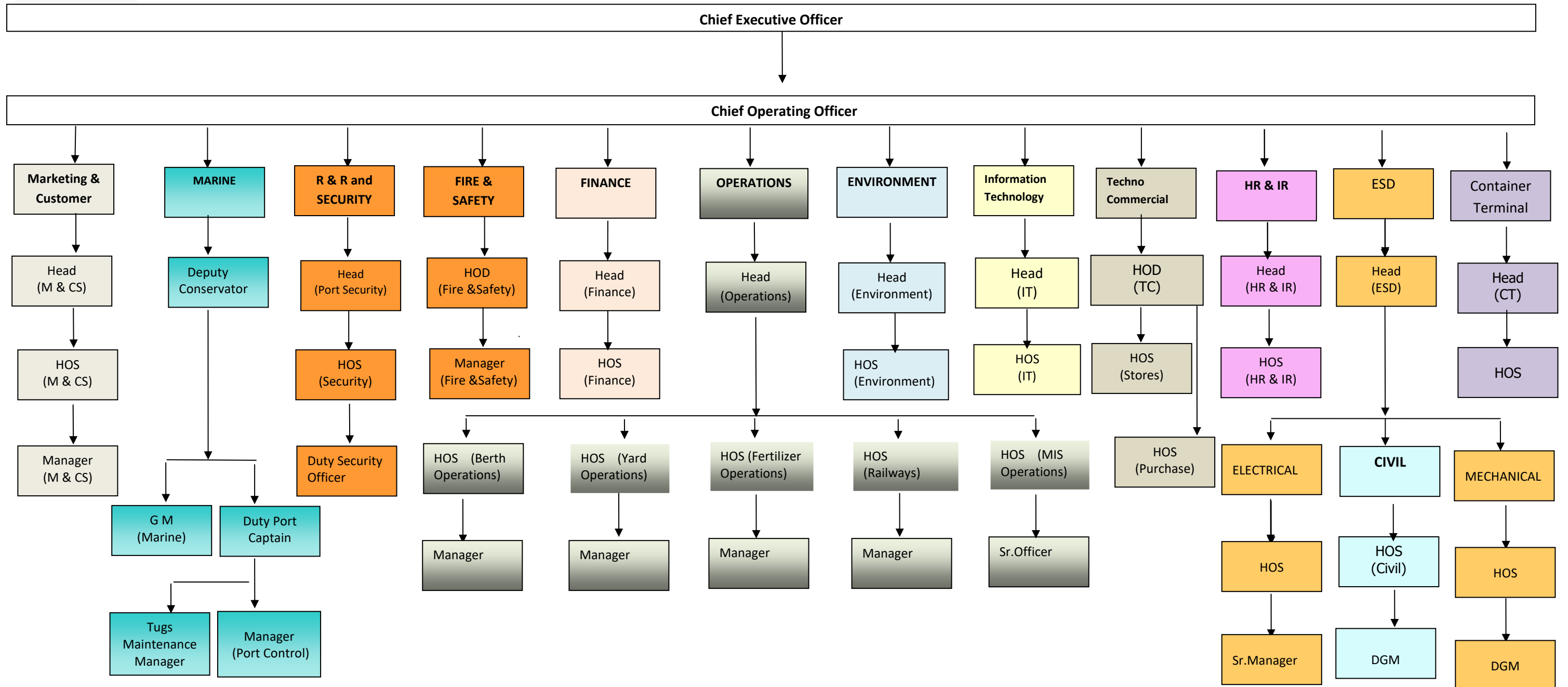
ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

All concerned are hereby requested to thoroughly familiarize themselves with this plan in order to ensure its effectiveness in times of an emergency.



Organisation Chart

ADANI GANGAVARAM PORT LIMITED



ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 1	REV : 13	PAGE : 1 of 2	DATE : 01/07/2025

SECTION - 1

1.1 INTRODUCTION

It has long been recognised that port areas represent a complex interface, between land and sea, between human activities and the natural environment and between different transport modes. **Thus ports are vulnerable to security and other risks and the need for a well-integrated emergency action plan remains absolutely essential.**

Maritime transport, by its nature gives rise to many hazardous situations, including shipping accidents, such as collisions, grounding and sinking, and accidents arising from the handling and storage of dangerous goods including bulk chemicals and hydrocarbons.

The Port area has a large number and range of potentially hazardous activities going on in close proximity to each other. A shipping incident can effect the land based activities and the surrounding areas and vice versa. An accident in a land based facility such as a chemical terminal or a storage depot can have effects well beyond the perimeter fence of the installation concerned.

The purpose of this plan is to co-ordinate the action of the various departments of this Port and also to evolve policies for co-operation among the various participating organisations external to the Port for combating emergencies within the Port and emergencies which may spread to areas surrounding the Port.

This plan is also linked to "Port Facility Security Plan" (PFSP) for implementation of "International Ship and Port Facility Security (ISPS) Code in Adani Gangavaram Port Ltd.

It is considered necessary to set up a centralised command body having special financial and legal powers

1. For controlling activities, personnel and equipment.
2. For requisitioning external help / mutual aid to cope with the crisis on hand.

ADANI GANGAVARAM PORT LIMITED

CRISIS MANAGEMENT PLAN

SECTION : 1	REV : 13	PAGE : 2	DATE : 01/07/2025

1.2 ACTION PLAN – IN CASE OF FIRE

In case of any fire, or other crisis, information is received through Telephone BSN 2889999 or EPABX 4444 or Mobile 7675900100 or VHF Channel - 14 in Fire Station Control Room. The Duty Telephone Attender raises the fire alarm bell and the vehicle Turn-out bell.

The Duty Fire Safety Officer proceeds to the scene of fire with Fire Tender and crew. The Telephone Attendee should inform Manager F&S and DPC. He should also inform Port Signal Station, Security Control Room. DPC, after appraising the situation should inform Deputy Conservator.

1.3 ALERT:

It is the duty of any witness at the beginning of an accident or an anomaly which might lead to an accident to give the alert and to act with all available means within the limit of his ability.

An employee of the Port on witnessing any abnormal situation will try to control it by himself immediately with available resources. He will simultaneously inform his superior or the Control Room of the place, type and seriousness of the accident/incident.

Signal for disaster control

The disaster control plan will come into effect on sounding of the Siren as follows

- Sound the siren continuously for 10 seconds.
- Stop for 5 seconds.
- Sound the siren continuously for 10 seconds.
- Stop for 5 seconds.
- Sound the siren continuously for 10 seconds.

i.e.

Sound 10 seconds	Stop 5 seconds	Sound 10 seconds	Stop 5 seconds	Sound 10 seconds

Signal for disaster control

Sound siren continuously for 30 seconds

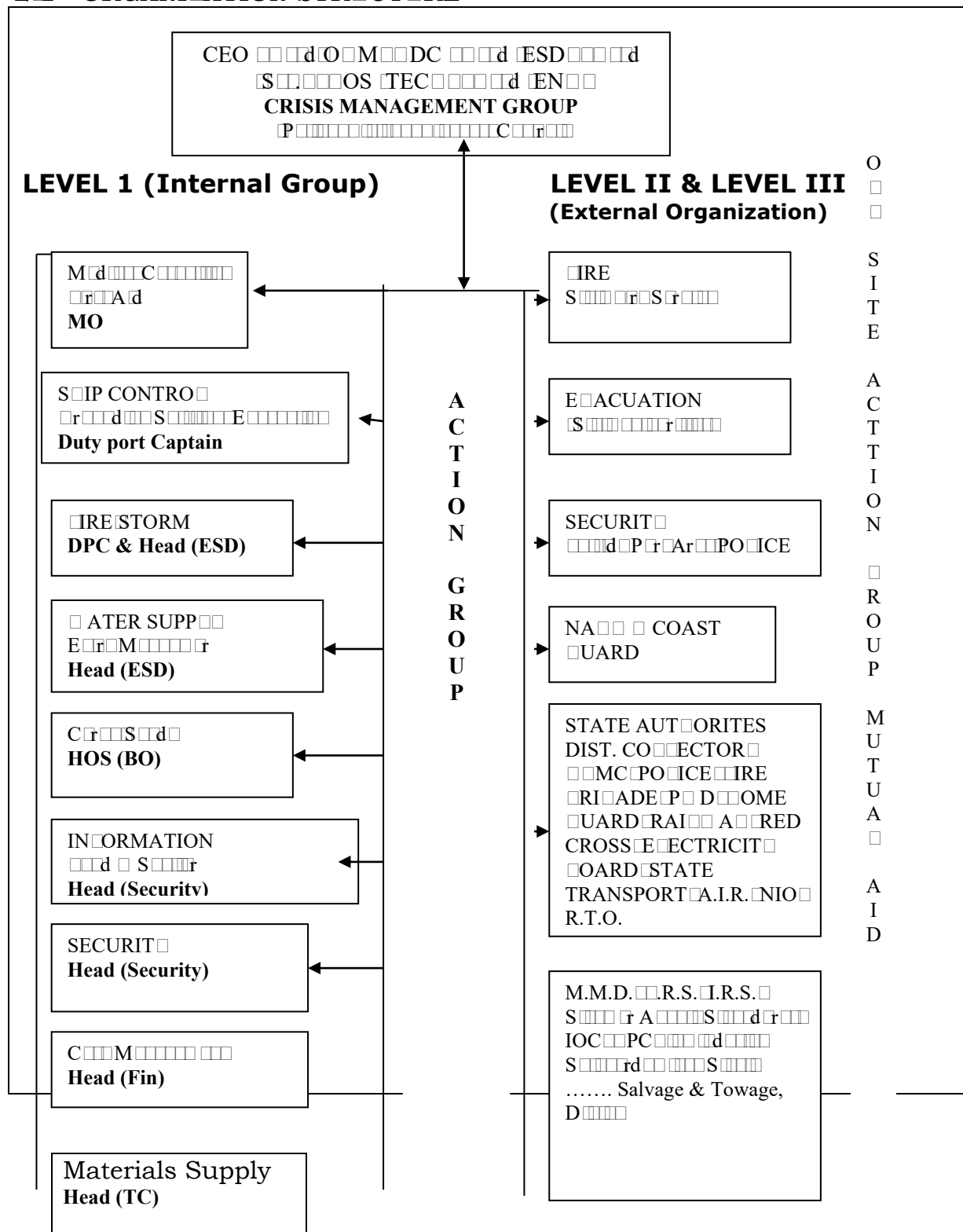
Then sound the disaster control bell

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 2	REV : 13	PAGE : 1 ☐ ☐ ☐ 14	DATE : 01 ☐ ☐ ☐ 2025

SECTION - 2

2.1 ORGANIZATION STRUCTURE



**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 2 of 14	DATE : 01/07/2025

2.2 CRISIS MANAGEMENT GROUP

A team consisting of the Chief Executive Officer, who is the leader of the team, assisted by the Head O&M, Deputy Conservator, Head ESD, Head Security, Head Tech and Head Environment will form the core of the Crisis Management Group. The team may, depending on the type and extent of the crisis, co-opt representatives of the external organizations.

The responsibilities of the Crisis Management Group

- Setting up a Crisis Control Room.
- Identifying the crisis zone.
- Co-ordinating with the external organizations.
- Monitoring and analysing reports from the Action Group and making alterations in the mode of action-if necessary.
- Support the Action Group with men and materials.
- Monitor that all actions envisaged under this plan are being carried out by the designated personnel and organizations.
- Review the situation, draw conclusions and the necessary lessons on completion of Crisis.

2.3 CRISIS LEVEL

Level I Crises:

Crisis of all nature, which can be handled by Adani Gangavaram Port Ltd Staff.

It will not affect other organizations in the adjacent area.

It involves only Marine and the Department in whose area the crisis has taken place.

Crisis Management Group Leader – Deputy Conservator.

Level II Crises:

Crisis of bigger nature

Affecting only Port Area.

Help required from outside agencies.

Crisis Management Group Leader – Chief Executive Officer

Level III Crises:

Crisis of serious nature.

Affecting not only Adani Gangavaram Port Ltd but also adjacent areas.

Requiring help and coordination from outside agencies to contain crisis.

Law and order may be affected.

Crisis Management Group Leader – District Collector.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 3	DATE : 01/07/2025

**2.3 ACTION GROUP AND CRISIS MANAGEMENT GROUP FOR ANY
CONTINGENCY IN ADANI GANGAVARAM PORT LTD**

The crisis group for any contingencies of level 2 or level 3 comprises of Chief Executive Officer and all other Heads of Departments as members. The action group for all contingencies of level 1, 2 and 3 will function under the leadership of Duty port Captain and all other Dy. Heads of Departments of the port as members.

Action Group

Duty Port Captain
 OS BO OS Mech. Head F&S FSO Tugs Maintenance Mgr. SSID Head IT OS Security Head TC

Crisis Management Group

CEO
 Head O&M Dy. Conservator SVP ESD Head Security OS Tech Head Environment

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 4 ☐ ☐ 14	DATE : 01/07/2025

2.4 EMERGENCY TEAM

The telephone Nos. of the members of Crisis Management Group and Action Group are given in Annexure-I.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 5 of 14	DATE : 01/07/2025

2.5 ORGANISATION RESPONSIBILITIES

Crisis Emergency Controller
Crisis Event Unit Officer
Internal Security Crisis Event Unit Officer
Head of M

- Establish Crisis Control Centre.
- Declare Crisis Zone.
- Approve information to media.
- Co-ordinate with External organisations.
- Mobilise Internal co-ordinator.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 6 of 14	DATE : 01/07/2025

<u>Chief Incident Controller</u> Duty Controller <u>Incident Supervisor Duty Controller</u> Duty Port Controller

- Takes over central responsibility from the site incident controller.
- Decides level of crisis and whether to activate off-site emergency plan.
- Instructs SIC [Site Incident Controller] to sound appropriate alarm.
- Directs the shutting down, evacuation and other operations at the port in consultation with Head [O&M].
- Monitors on site and off site personal protection, safety and accountability.
- Monitors that casualties if any are given medical aid and next of kin informed.
- Exercise direct operational control of the emergency related work outside the affected area.
- To monitor control of traffic movements within the port.
- To liaise with the senior operating staff of the fire, police and statutory authorities.
- To issue authorised statements to the news media.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 7 of 14	DATE : 01/07/2025

Site Incident Controller
Duty Port Control

In the absence of Duty Port Control
Tu Mott Mott

- Incharge of all crisis action plan and rescue operations.
- Deploy manpower and floating craft.
- Liaise with ship master.
- Maintain constant contact with CEO / Head O&M/ DC
- Liaise with Coast Guard, Navy & Fire Service.
- Activate Action Group.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 8 of 14	DATE : 01/07/2025

Emergency Coordinator
Head ESD

Intersite Head ESD
HOS ELEC

- Arrange/isolate electrical supply/lighting to the affected area if required.
- Arrange for bulldozers - mobile cranes - fork lifts or any other specialised equipment.
- Arrange for fabrication of any special equipment that may be needed for emergency operation.
- Mobilise cargo handling equipments.

ADANI GANGAVARAM PORT LIMITED

CRISIS MANAGEMENT PLAN

SECTION : 2	REV : 13	PAGE : 9 of 14	DATE : 01/07/2025

Emergency Control
Head Emergency

Inters Head Emergency
Head Tank

- Recommendations to minimise the impact of an accident on the environment, for which it would develop methodologies to control hazardous spills.
- To monitor cooperation with emergency response squads to conduct the actual clean up work during and after the emergency.
- In case of fire and especially if the fire involves toxic/flammable materials, to ensure responsible actions for containing the run off fire water and other water from the damaged units.
- Determine the level of contamination of the site as a result of the accident.
- During cyclone/floods monitor sand bags. Transfer important plans & documents to safer places.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 10 of 14	DATE : 01/07/2025

Gd HOS Cr Hd Cdr t r
Hd O r t s

I t s Hd O r t s
HOS B r t O r t s

- Prepare ships to vacate harbour.
- Arrange to segregate cargo sheds and ships.
- Submit consolidated list of dangerous goods in port.
- Co-ordinate with ship owners, agents for above.
- Mobilise staff to remove cargo in sheds, wharves, etc. out of danger area.
- Operations staff to assist Fire Dept in any emergency.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 11 of 14	DATE : 01/07/2025

Losses Controller
Head Terminal Cargo Replenishment

Interships Head TC
HOS TC

- Provide fire fighting equipment/chemicals, spill dispersant.
- Monitor stock of fire fighting equipments, chemicals and Pollution control equipments.
- To be ready to meet the replenishment needs of Fire Station/Tugs Maintenance Manager SSID
- Co-ordinate with Finance Dept for emergency release of funds.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 12 □□14	DATE : 01□07□2025

S□□ur ty C□□rd□□t□r

H□□d S□□ur ty□

I□ t□□ □□s□□□□ □□H□□d S□□ur ty□

HOS S□□ur ty□

- Transport people to Evacuation Centres/Temporary shelters.
- Arrange/Regulate Traffic.
- Cordon off necessary areas.
- Restrict entry of unauthorised personnel.
- Mobilise security staff.
- Liaison with Police/Arrange for wireless communication as required.
- Arrange to issue warning by loud hailers.
- Prevent looting.
- Assist in orderly evacuation.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 2	REV : 13	PAGE : 13 □ □ 14	DATE : 01/07/2025

Medical Controller

H□□d □HR □ IR□

Int□□□□s□□□□□H□□d □HR □ IR□

HOS □HR □ IR□

To Coordinate with Medical officer and

- Arrange First Aid Stations.
- Arrange for treatment of casualties.
- Arrange for sufficient ambulances.
- Contact all hospitals, nursing homes for mobilising para medical people.
- Arrange additional medical aid/e□uipments as re□uired.

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 2	REV : 13	PAGE : 14 □□14	DATE : 01□07□2025

1r Md Crd tr

Head Court Arts

I t s H d C r r t A r s

HOD \$urty

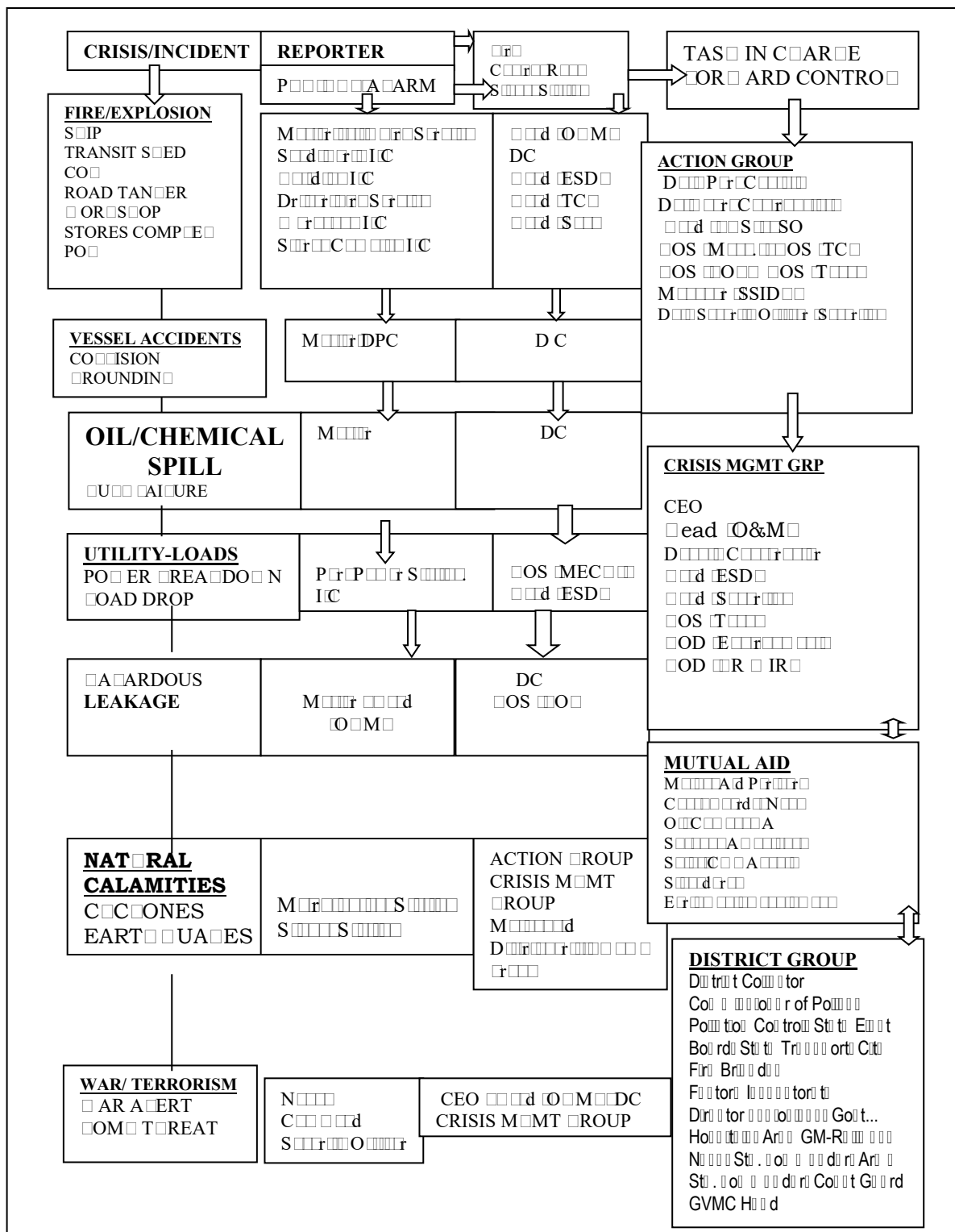
- Arrange for food & beverage, rooms.
- Arrange to communicate with relatives of employees.
- Liaise with media.
- Mobilize vehicles for personnel & equipments.
- Maintain head count of casualties/missing people.

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 3	REV : 13	PAGE : 1 001	DATE: 01 07 2025

SECTION – 3

3.1 COMMUNICATION-COMMAND AND RESPONSE STRUCTURE



**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 4	REV : 13	PAGE : 1 of 3	DATE : 01/07/2025

SECTION - 4

EMERGENCY FACILITIES

4.1 EMERGENCY CONTROL ROOM

The Emergency Control Room is set up in the Port Operations Building, in the office of the Deputy Conservator. A copy of the On-Site Emergency Action Plan will be permanently placed in the emergency control room. The Action Plans for every contingency are available for ready reference. As soon as the control room comes into operation, one representative from each department shall report for duty to the overall-in-charge.

The control rooms shall have the following equipment:

- Telephones - 1 direct, 1 EPABX Ext., 1 Mobile
- VHF Set - 1 VHF Set Channel 16 and 14.
- Flip Charts with felt pens.

The Secondary Control Room shall be set up in Chief Executive Officer's Office with Head Security in attendance for level III crisis.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 4	REV : 13	PAGE : 2 of 3	DATE : 01/07/2025

4.2 Port Fire Fighting Resources

Fire Fighting Equipment	No.	Capacity	Location
Water Fire Tender	1	12,000 L Water	Fire Station
Multi purpose Fire Tender	1	11000 L Water + 1000L Foam	Fire Station
Fire Pickup (Bolero) hired	1		Fire Station
Trailer Mounted Fire Pump	2	1,800 L / min	Fire Station
Portable Fire Pumps	3	275 L / min	Fire Station
Fire Hydrants	39	Portable	Berths 2nos & Piers 37nos
Foam Compound AFFF	25 L	Drums	Fire Station
Fire Extinguishers – DCP 5 kg / 6 kg - 193 nos. / DCP 25 kg – 13 nos. / CO ₂ 4.5 kg / 5 kg – 169 nos. / Mech. Foam 50 L – 12 nos. / Water type 9 L – 12 nos. CO ₂ - 22L G-06Nos DCP- 75L G-02Nos With New Fire Tender Came	407	Various	In various locations all around the port
Fire hoses	55		Fire Station
BA Set	1	35 – 45 min.	Tugs
Fire Proximity Suit	1		Tugs
VHF Set	1		Port Control
UHF Set	3		Fire Station and Duty Fire & Safety Officer

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 4	REV : 08	PAGE : 3	DATE : 01/07/2025

4.3 PORT OIL POLLUTION RESPONSE EQUIPMENT

- Floating Rigid Oil Boom - 300 mtrs. With magnetic connectors
- Oil Dispersant Chemical Spray Unit with monitor - 1 no. Fitted on Tug “DOPIN”
- Oil Skimmer Capacity 25 m³/hr. - 1 no.
- Wooden Boat with crew - 1 no.
- Oil absorbent pads - 10 bales
- Oil absorbent roll - 1 bale
- Dispersant chemical - 2000 kg.
- Reception facility on Tug Dolphin 12 - 26 Cu. M.
- Reception facility Tug Dolphin 22 - 20 Cu. M.
- Reception facility shore tanks - 30 Cu. M.

SECTION : 5	REV : 13	PAGE : 1 002	DATE : 01/07/2025

EVACATION

By

- Lead TC shall ensure to provide adequate drinking water to the evacuated people.

ADANI GANGAVARAM PORT LIMITED

CRISIS MANAGEMENT PLAN

SECTION : 5	REV : 13	PAGE : 2 of 2	DATE : 01/07/2025

OS BO to inform the entire cargo work contractor.

Head Security will do the overall supervision of the work and report/complaints to CEO within two hours of the warning received.

The temporary evacuation centre shall be looked after by the following officers

Head Security shall ensure that temporary evacuation centres are established in the schools/colleges as per the list at Annexure – VIII.

Head R & IR & Medical Officer shall ensure to provide necessary medicine and medical assistance at the temporary evacuation centres.

OS Admin shall provide food at the temporary evacuation centres.

Head ESD shall ensure lighting at the temporary shelters.

Head Security shall provide sufficient number of vehicles as may be required for evacuation purpose.

5.2 EVACUATION ROUTES

- Natural Calamities - Route No. I.
Through Custom Gate to Main Gate outwards.

Route No. II.
Through RIN Access Gate

Temporary Shelter
As per the list at Annexure – VIII & Section 7 (Page 1 of 4)
- For Fire at Berth - Assemble at the extreme west end of berth No. 2 and if necessary move out through Custom Gate outwards.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 6	REV : 13	PAGE : 1 of 4	DATE : 01/07/2025

SECTION - 6

MEDICAL FIRST AID AND RELIEF CENTRE

6.1 Risk Controls

Sr No.	Risk Control	BSNL	EPABX	Mobile
1.	Dispensary / First Aid Post- Harbor gate	2889999	40600	7674900100
2.	Ambulance Service	2889999	40600	7674900100

6.2 Contact Details of Specialist Doctors and Resident Hospital Committyd

Sr. No.	Doctor	Hospital BSN EPABX		Residence BSN	Mobile
1.	C. M. O. & Surgeon				
2.	Physician	2517599			
3.	Gyn. cum Obst.	2517599		-	
4.	Duty Medical Officer	2762211			

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 6	REV : 13	PAGE : 2 004	DATE : 01 07 2025

6.3 USE OF ANTIDOTES FOR SELECTED POISONING

POISON	ANTIDOTE	MECHANISM	ADULT DOSE	PEDIATRIC DOSE	CAUTIONS
Alcohols					
Methanol Ethanol Isopropanol	Ethanol solution 50% alcohol (Antidote)	Inhibits Metabolism to toxic products	Lethal dose (LD) 0.6g/kg or 50-100g dose (MD) 109 mg/kg/r. For oral or intravenous doses, treat with 50% solution	Symptoms develop	Additive effects of toxic alcohol load may be 100-200 mg (22-24 mg/kg/L)
Cyanide	Cyanide Antidot Kit (Lasker) Amp 1 ml/ml ampoule	Converts Fricit HCN to Fricit HNCN which is excreted from body as urea.	Breathes cyanide gas at time of accident avoid further exposure for 15-30 minutes before treatment begins.	Symptoms develop	Oxygenation for hypotension. Avoid if HCN of over 300.
	Sodium thiosulfate 3g in 10 ml of water.	Antifreeze thiosulfate	10 ml of 3% solution (300 mg) 1.0 g/kg max 3-5 ml.	6-8 mg/kg 2 (or 0.3 mg/kg) oral 3-5 ml do not exceed 10 ml.	Avoid Airway obstruction. Excessive oxygen may oxidize the redox state of the blood.
	Sodium thiosulfate 25g in 50 ml of water.	Proteinuria increases proteinuria to proteinuria of CN to toxic products.	50 ml. Of 25% solution max oral 10g treated.	30-40 mg/kg 2 (or 1.65 mg/kg)	
Metals Arsenic Mercury	Dithionite (BAL) 100 mg/kg 3 ml of water.	Conversion of free metal	35 mg/kg daily 1.M. oral 4 ml for 2 days total oral 4 – 12 ml for all to 7 days	500 mg/kg 2 (or 24 mg/kg) 24 ml. Dithionite doses oral 4 ml. for 5 days.	Oxygenation for proteinuria. Total proteinuria may decrease proteinuria
	Dithionite (BAL) 100 mg/kg 3 ml of water	do-	50-75 mg/kg/4 ml daily 1.M. 2 dithionite doses or oral 1.0 g/kg (total dose oral 12.24 ml) for all to 5 days. No oral total 500 mg/kg/oral	1000 mg/kg 2 (or 50 mg/kg) 24 ml daily 1.M. dithionite doses oral 8-12 ml for 3-5 days to all. of 2 mg/kg.	Proteinuria may increase proteinuria may increase proteinuria.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 6	REV : 13	PAGE : 3	DATE : 01/07/2025

POISON	ANTIDOTE	MECHANISM	ADULT DOSE	PEDIATRIC DOSE	CAUTIONS
	Phosphorus (Inorganic)	-do-	250 mg / 4 tablets for 5-10 days	600 mg / M2 (0.30/24 hr. or 2 tablets daily to 100 mg. of 100 mg.)	Do not induce vomiting. Do not give milk or oil. Do not give any food or drink.
Nitrofurantoin	Nitrofurantoin (Nitrofurantoin)	Contraindicated for renal impairment	0.4-2 mg 1.V. Prolonged treatment up to 10 days.	0.01 mg / 1.V. Prolonged treatment up to 10 days.	Adverse reaction to the drug. Do not give to children.
Nitrite	Methylene Blue (100 mg.)	Reduction of methemoglobin to normal level	1.2 mg / 1.1 mg 100 mg. Oral 5-1	Same as adult	Treatment not recommended. Do not give to children. 730 mg. Adverse reaction. Do not give to children.
Hydrofluoric Acid	Antidote	2 to SCC – 100 mg of Calcium gluconate 10% solution			--
Cyanide	Antidote	Adverse reaction to (1) VOX (2) DIOVOL (3) AMINOFFILLIN INJECTION (1) Dithionite (2) Bismuth (3) Dithionite (4) Sodium			
Organophosphorus or Carbamate Poisons - PARA. ETHION- ENDO-	Antidote MALATHION PHURATE SULPHON ETC.	Adverse reaction Atropine PAM Injection	Same as adult		
AMMONIA	Antidote First Aid	ADMINISTER OXYGEN. GIVE WARM MILK. THOROUGHLY WASH THE AFFECTED PART. APPLY 0.9% TO 1% ALUM WATER OR 5% SOLN. OF ACETIC, CITRIC, TARTARIC & SULPHONIC ACID. TAKE THE VICTIM TO FRESH AIR IF OXYGEN NOT AVAILABLE.			

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 6	REV : 13	PAGE : 4 004	DATE : 01/07/2025

6.4 SOME COMMON INDUSTRIAL EXPOSURES AND THEIR FIRST AID TREATMENT

[illegible]

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 7	REV : 13	PAGE : 1 □□6	DATE : 01□07□2025

SECTION - 7
FIRE □ EXPLOSION RESPONSE PLAN

7□1 ACTION PLAN IN CASE OF FIRE ON A SHIP ALONGSIDE BERTH

- **ANYBODY NOTICING A FIRE ON BOARD SHIP□ SHALL IMMEDIATELY**
- Inform the ship's officer who shall be responsible for raising the alarm.
- Inform Port Fire Station on 2889999 E□t 40604 or V□F channel 14
- Inform Port Signal Station on Tel No.0891-2889987, 9000234479, V□F channel 14/16
- **MASTER/CHIEF OFFICER OF SHIP** to raise internal fire alarm and blow continuous blasts on Ship's whistle to alert the Port.
- Inform Port Signal Station on V□F Ch. 16, 14 or on Tel. No. 0891-2889987 or Mobile 9000234479 and Fire Station on V□F Ch. 14
- Suspend cargo work/ballast operation/bunkering and close all valves.
- Start fire fighting & cooling adjacent areas & prevent spreading of fire.
- □eep main engines ready.
- Disconnect hoses, if any.
- Signal Station to inform Dy. Conservator, Duty Port Captain and Action Group.
- Duty Port Captain to proceed and board the ship with □ead □F&S□and fight the fire. Assess crisis level. If at □evel - II or III inform crisis management group through Signal Station. Consult with Master and if necessary, decision to be taken to unberth the vessel in consultation with DC.
- Duty FSO with Fire Tender to be standby at berth for firefighting/rescue operations and await instructions from Duty Port Captain. To arrange for additional manpower and chemicals if re□uired. Direct the fire jeep with megaphone to proceed to port area and announce the location and nature of fire and direct the concerned staff to proceed to the location immediately.
- Tugs DO□P□IN 12, DO□P□IN 22 and Tug Bahuda to start their pumps for fire-fighting and proceed to vessel for cooling adjacent areas. Wait for further instructions from DC/Duty Port Captain/Ship's Master.
- Signal Station to raise fire alert and co-ordinate between various agencies.
- Mooring crew to proceed to berth and standby for casting off/cutting off mooring ropes.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 7	REV : 13	PAGE : 2	DATE : 01/07/2025

- Wooden Boat to proceed to the berth with Tug Maintenance Manager SSID and his staff and standby for instruction of DPC to assist in casting off and rigging of oil booms.
- OS BO to stop cargo operations at the berth and shift cranes. Ensure that the electric power supply is switched off after shifting of cranes. Arrange to shift all inflammable cargo from site. Ensure jeep, truck and ambulance standby at the berth. Arrange for additional fire pump and foam compound. Standby with Messengers.
- OS Security to immediately cordon off the berth. Keep all available vehicles standby at the berth for transferring additional manpower and firefighting equipment.
- Head R & IR/ Medical Officer to alert hospital staff for emergency and arrange for additional staff. Instruct the ambulance with staff to proceed to the berth.
- OS Mech. to stop operations at Coal & Ore berths. Take up the unloaders / loader arms. Put off all electrical power supply to equipment. Put on standby all firefighting equipment at the Plant and Electrical Sub-Station.
- MASTER or Chief Officer of vessels in adjacent berths shall take precautionary steps to keep all the firefighting equipment ready for use and prepare to vacate berth if required.

ON ARRIVAL

- Head O&M to proceed to harbour and take charge from OS IO.
- OS Mech. to proceed and take over charge of machineries.
- DEPUTY CONSERVATOR
 - To supervise the overall firefighting operation.
 - To co-ordinate and to advise Police, GP Fire Brigade & VSP Fire Brigade.
 - To update information given to CEO.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 8	REV : 13	PAGE : 3	DATE : 01/07/2025

7.2 ACTION PLAN IN CASE OF FIRE ON SHIPS AT ANCHORAGE

In case of fire on a vessel at anchorage, she will directly inform the Signal Station on VHF channel 16 & 14. Besides, she will sound continuous blast on the whistle.

The Duty Signaler will contact the Tug Maintenance Manager (SSID), Dy. Conservator, & Duty Port Captain. The Duty Signaller will also inform the Fire Station on EPABX 289999-40604 or 7675900100 or UHF Channel 14.

The duty port Captain is to report to the Port Craft berth immediately.

The Tug Maintenance Manager (SSID) to inform the available tugs and Boat crew to be stand-by for further action. OS Admin to ensure that the drivers of the pickup and ambulance are stand-by and ensure that an ambulance is available at the Dispensary.

Duty Port Captains to board the ship by tug along with fire brigade personnel. Tugs will proceed to the vessel for fire-fighting / shifting. Deputy Conservator to inform CEO, Head O&M, Head Security, S-I-C MMD and agent of the vessel.

Duty Port Captain should consult the Master about the seriousness of the fire and whether it can be controlled. The information gathered should be conveyed to the Deputy Conservator and according to the seriousness of the fire, necessary action will be taken by Duty Port Captain in consultation with the Dy. Conservator.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 7	REV : 13	PAGE : 4	DATE : 01/07/2025

**7.3 ACTION PLAN IN CASE OF FIRE AT M⁰⁰⁰⁰⁰⁰⁰⁰⁰¹ S⁰⁰⁰ L⁰⁰⁰d⁰⁰r / 00-
l⁰⁰⁰d⁰⁰r Syst⁰⁰⁰**

The emergency action Plan is to be followed, whenever a fire occurs at S⁰⁰ / SU⁰⁰ as detailed below. Any fire, even if it is minor in nature has the potential to develop into a major fire resulting in loss of port property human lives/productivity loss etc. Hence, prompt action is required to be taken by all concerned without loss of time.

In S⁰⁰ /SU⁰⁰ the fire can occur due to the following

- Running Conveyor beltings
- Electrical fires
- Coal stack fires
- Non-electrical fires

The following actions are required to be taken immediately

7.3.1 Running Conveyors & Non-Electrical Fires

- Fire incidents of running conveyors are caused normally due to heavy friction between running conveyor belting and jammed/ceased carrying rollers.
- Whenever there is a fire, the Running Conveyor is required to be kept in running condition so that the heat generated is not confined to a particular location. In case of (a) Running Conveyors as well as (b) Non-electric fires, the Operators, Attendants, electrical staff posted/available on duty at the spot should use the fire extinguishers from nearby/location or with the help of sand or water, whatever is available in the vicinity to extinguish the fire. They can take the assistance of other staff available around the site of fire incident.
- Removal of inflammable materials if any in the vicinity.
- The operator and or Attendant to inform CCR and Shift-in-Charge regarding the fire incident.
- The Shift-in-charge to sound the fire alarm at CCR and also contact the Fire Station.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 7	REV : 13	PAGE : 5 of 6	DATE : 01/07/2025

7.3.2 Electrical Fires

- Location - Sub Station, CCR, Electrical houses of mobile machines viz Stackers, Re-claimers, Ship-loaders and Coal Un-loaders etc.
- In case of electrical fires, the Operators, Attendant, Technicians (Elec.) available on the machines or duty spot should immediately isolate electrical power supply to the machines or equipments by switching off the isolators provided on the machines if possible, and also inform Sub-Station to switch off the concerned feeder.
- The Operators, Attendant or Electrical staff available on duty at the spot should use fire extinguishers, sand or ore or whatever is available in the vicinity to extinguish the fire. It should be noted that water should not be used for extinguishing electrical fires. Water can be used ONLY after ensuring that the electrical supply is totally switched off and safe.

7.3.3 Coal Stacks Fires

- Anyone noticing fire at the coal stack yard shall inform the Fire Station / Shift-in-charge / Signal Station.
- Shift-in-charge / Signal Station shall inform the Fire Station.
- Duty FSO at the Fire Station shall immediately dispatch the fire tender to the site.
- Shift-in-charge shall ensure that sprinkler system for coal dust suppression is started and the water line is charged for connecting fire hoses for fire fighting.
- Fire brigade shall use the fire tender and fire hose connections from the sprinkler water line for dousing the fire.

7.3.4 Duties and responsibilities of all employees of OHS/CHS

- The Operators, Attendant, Tech. (E) who are posted on machines/drive houses etc. on detecting the fire shall immediately inform their superiors and CCR and simultaneously shall make all out efforts to extinguish the fire to the extent possible as explained earlier.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 7	REV : 13	PAGE : 6	DATE : 01/07/2025

- **Tank Superintendent** shall immediately switch on the fire/emergency alarm and inform **OS Mech./ Head ESD**. He shall also contact the Fire Station and Port Signal Station. Thereafter he shall immediately rush to the spot of the accident and mobilize all man power, equipment, etc. as required. He should also brief **OS Mech./ Head ESD** regarding the gravity of the situation.
- **Head ESD** shall visit the site of the fire depending upon its gravity, depending upon the extent of the fire and damage done by the same. All steps should be taken to ensure that the fire is extinguished at the earliest and report is made to investigate the cause of the fire and steps required to be taken to avoid similar instances in future. He shall also take immediate steps for necessary corrective action so that the effect on the **S / SU** operations is minimal. Further action should be taken to intimate **DC, Head O&M** and **CEO** as required under the circumstances.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 8	REV : 13	PAGE : 1 of 4	DATE : 01/07/2025

SECTION - 8
OIL/CHEMICAL SPILL RESPONSE PLAN

8.1 ACTION PLAN IN CASE OF OIL SPILL/POLLUTION BY A VESSEL AT ANCHORAGE OR AT BERTH

A. MASTER OF SHIP TO INFORM :

THE PORT SIGNAL STATION ON V.F. C. 16/14 AND FURNISH PARTICULARS SUCH AS

- i. Name of the ship
- ii. Likely cause of oil spill.
- iii. Extent of spill.
- iv. Nature of assistance required.
- v. Any other relevant information.

B. ANY PERSON NOTICING OIL SPILL:

To inform Port Signal Station on Mobile No. 9000234479 by using telephone provided at Berth no... or on V.F. C.16/14 to Signal Station available with shore staff.

C. ANY CREW MEMBERS OF PORT CRAFTS NOTICING OIL SPILL:

To inform Port Signal Station on V.F. C. 16/14 with maximum relevant information.

D. ACTION TO BE TAKEN AUTOMATICALLY BY STAFF ON DUTY

1. DUTY PORT CAPTAIN & CHIEF ENGINEERS OF TUGS DOLPHIN 28 AND DOLPHIN 30

- To immediately proceed on the spot by tugs to board the vessel and collect oil/bilge water sample as well as sample of polluted sea water around the vessel in containers, supplied by the Tug Maintenance Manager. Samples shall be collected in the presence of Master, Chief Engineer, Duty Engineer, and Duty Deck Officer of the vessel. The samples shall be sealed in their presence and their signatures obtained with date and time on each container. The duty port captain and Tug Chief Engineer shall also sign the containers in their presence and handover the same to Deputy Conservator.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 8	REV : 13	PAGE : 2 □□4	DATE : 01□07□2025

- Duty Port Captain & Chief Engineer of tug will obtain the oil spill report in detail in the following form, from the Master of the vessel□
 - a□ Name of the vessel.
 - b□ Name of the Master.
 - c□ Name of the Owner & Charterer
 - d□ Name of the □ocal Agent.
 - e□ Call sign of the ship, Flag, □ear built
 - f□ Ne□t port of call.
 - g□ Date and Time of Occurrence.
 - h□ Cause of Oil Spillage.
 - i□ □ocation of Oil Spillage.
 - j□ Type and □uantity of Oil spilled.
 - k□ Immediate Action taken.
 - l□ Weather Conditions.
 - m□ Any other relevant information.
 - n□ P&I Club name, validity of cover, contact details of local correspondent
 - o□ Status of oil record book
 - p□ Signature of Master with Ship Stamp.

□□□□ **T□GS MAINTANACE MANAGER □SSIDL□**

- Shall collect re□uired lengths of oil booms from Berth No.1 to contain the floating oil. The oil containment booms are stored at berth no.1 store room.
- Shall proceed to the spot with his staff and re□uired staff of shore gang to deploy the oil booms as re□uired.
- Shall arrange Tug at the spot for collecting floating oil.
- When the job is entrusted to the contractor, the Tugs Maintenance Manager □SSID□□ shall proceed with contractor to the spot for cleaning the oil spill under his supervision. □e shall actively assist the contractor.
- After completion of the operation the waste materials will be brought ashore by the contractor and his staff for disposal by his truck, under the supervision of Tugs Maintenance Manager □SSID□□
- Re□uest □OS □BO□to keep a truck stand-by if re□uired to facilitate and e□pedite the operation.
- Tugs Maintenance Manager shall summon additional staff during out of office hours to assist him. The contact details are given below□

Shri □esava narasimhan, Tugs Maintenance Manager, Tel No.
8980016403

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 8	REV : 13	PAGE : 3	DATE : 01/07/2025

GENERAL MANAGER MARINE

- We shall collect samples and hand over to the laboratory to carry out analysis. We will obtain report duly signed by the authorised officer of the Lab together with their charges and to hand over the same to DC.

DEPUTY PORT CAPTAIN

- We will issue specific orders to tug DOPEIN 28 and/or tug DOPEIN 30 to proceed to the spot to lay the oil containment booms around the spilt oil and start skimming the oil with the help of Skimmer. Remaining traces of oil may be dispersed by spraying Oil Spill Dispersant (OSD). No OSD shall be used without obtaining approval of the Coast Guard.
- All expenditures towards use of port Boat, tugs, oil dispersant chemicals, port vehicles, spill containment equipment, fees for carrying out oil sample analysis, charges of the contractor for carrying out the cleaning operations including private launches etc. will be maintained by the DPC and consolidated bill including overhead element on labour, overhead on materials be levied. Invoice will be prepared and intimated to the Master/Agent for settling the bill prior to sailing of the vessel.
- We will inform the various authorities and agencies concerned as detailed in Annexure-II.

**MASTERS / CHIEF ENGINEERS OF TUGS DOLPHIN 12
DOLPHIN 22 & BAHADA**

- On orders of the DPC, they will proceed to the spot to lay the oil containment booms around the spilt oil & start skimming the oil with the help of oil skimmer. They shall ensure trouble free operation of oil spill dispersant chemical spray unit.

DEPUTY CONSERVATOR

- To keep CEO and Head O&M informed about the progress of cleaning of oil spill.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 8	REV : 13	PAGE : 4	DATE : 01/07/2025

- To write to the Master of the ship, holding him responsible for the pollution and steps likely to be taken to combat oil spill and cleaning operations, if any, indicating likely expenditure to clear oil spill and directing certain amount to deposit with Head Office before sailing, under intimation to the Local Agents of the ship.
- If required, to appoint contractor and direct him to proceed to the spot with his staff to clear oil spill under the supervision of the Tug Maintenance Manager.
- Inform Nautical Advisor (DG Shipping), Mumbai Tel. 022 – 22670863/22610606
- Inform Surveyor In Charge, MMD Tel. 2729431 / 2502148
- Inform Coast Guard 0891-2547266
- Inform the State Dept. of Environment/The Pollution Control Board, Tel. No. 0891-2755356/2719380

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 9	REV : 13	PAGE : 1 of 2	DATE : 01/07/2025

SECTION - 9

NEIGHBOURING ORGANISATIONS

9.1 ASSISTANCE FROM NEIGHBOURING ORGANISATIONS

There are possibilities of mishap occurring due to accidental fire, toxic gas release, or pollution in the harbour etc., should such an eventuality arise a large number of resources will be required in the shortest possible time in terms of trained personal, fire tenders, fire fighting personnel, breathing apparatus, personal protective equipments, etc. in order to counter such a mishap. Since it is not practicable to maintain a huge inventory by any single unit to meet an eventuality, it is ideal to seek assistance from neighbouring organisations.

The following organisations/resources may be contacted to seek assistance:

- Visag Steel Plant (RIN)
- Hindustan Shipyard Ltd.
- A.P. Fire and Emergency Services (Pedagantyada)
- Indian Navy
- Indian Coast Guard
- Hindustan Petroleum Corporation Ltd.
- Visakhapatnam Port Trust

The following Nuisance organisations are listed in the Annexure-IX

Emergency Condition:

Emergency condition, with all its related expressions, shall mean and include the occurrence or any other following eventualities viz.

- Fire
- Toxic Gas Release
- Explosion
- Any other mishaps similar mishaps.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 9	REV : 13	PAGE : 2 of 2	DATE : 01/07/2025

Individual Company's resources are not adequate to control over situation then the resources can be mobilised from neighbouring organisations to control the situation.

Resources available:

The available resources that can be spared during emergency from neighboring organisations are to be ascertained from the organisation from the contact persons as per Annexure – IX.

Standards to be followed:

All types of equipment required for fire fighting for using under this scheme should preferably be according to relevant BIS with ISI marking.

Replenishment:

All the materials from neighbouring organisations consumed during emergency control operation for example, dry powder, foam, CO₂ and other material can be replenished with similar type of material at the earliest.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 10	REV : 13	PAGE : 1 of 4	DATE: 01/07/2025

SECTION - 10

VESSEL ACCIDENTS RESPONSE PLANS

10.1 ACTION PLAN IN CASE OF GROUNDING OF A VESSEL IN PORT

- The Master/Pilot shall contact Adani Gangavaram Port VTS Control on VHF channel 16/14 and give detailed information about the grounding of the vessel.
- Port Control shall mark the position of the grounded vessel on Radar display screen. Thereafter he shall inform Dy. Conservator, Duty Port Captain. Port Control shall maintain a proper log for recording all the messages passed between the ship and port authorities. Port Control shall also pass messages to all ships giving information about the position of the grounded vessel.
- Duty Port Captain shall board the vessel immediately and assess the situation, the state of tide, wind, etc. If required, the Dy. Conservator will also board the vessel, for giving assistance for carrying out re-floating operation.

Dy. Conservator to inform the CEO and Head O&M and Surveyor- In-Charge
– MMD.

- The vessel shall display a day and night signal indicating that the vessel is grounded.
- Tugs Maintenance Manager (SSID) shall get all available tugs/Boat and crew standby and await orders of the Dy. Conservator/Duty Port Captain.
- General Manager (Marine) shall proceed to the grounded vessel in survey launch with his staff and obtain soundings along the vessel by using echo sounder and hand lead, plot them on a chart and submit the same to Harbour Master on board the vessel. He should also fix the exact position of the grounded vessel on Harbour Chart.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 10	REV : 13	PAGE : 2 of 4	DATE: 01/07/2025

- The Master shall frequently obtain soundings of all tanks and maintain a record. The Master shall also obtain hand-lead sounding right round the vessel and plot them on a chart. Immediately after grounding, the Master shall instruct the Chief Engineer of his vessel to change over to the high suction for cooling water purpose for the machinery. After ascertaining the situation, action shall be taken to transfer oil and pump out bilges or transfer of cargo to lighten the draft of the vessel as per the soundings available on the grounded area. The ship shall prepare all her tow ropes including the insurance wire if required for pulling the vessel from the grounded position.
- Depending on the way the vessel is grounded and the available high tide on the day in question, all advance preparation shall be made to commence the towing operation at least two hours before the high water. If possible ship's engine should also be kept standby for using while trying to re-float the vessel.
- The salvage pumps available with the ship repairing firms may be requisitioned if required by the Dy. Conservator.
- If required, the assistance of the following local diving firms may be requisitioned.

Sr No	Name of Firm	Office Tel No	Resd Tel No	Mobile
1.	M/s. Sri Bhavani Underwater Services, Viag.	2508644		9440191414 9440188587
2.	Samuna Diving Services, Viag.			9849102368 7661887097

- In case the vessel cannot be re-floated within a day, a navigational warning should be sent to the Chief Hydrographic Officer, Dehradun, and same shall also be transmitted through Signal Station VF.
- A Harbour Notice shall also be issued to all concerned by Dy. Conservator.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 10	REV : 13	PAGE : 3 □□4	DATE : 01□07□2025

10.2 ACTION PLAN IN CASE OF COLLISION

ACTION TO BE CONSIDERED	ACTION BY PORT	ACTION BY VESSEL
IMMEDIATE ACTION 1.Slow down and stop main engines 2.Sound Emergency Alarm: 3.Check for possibility of oil pollution 4..Effect appropriate damage and pollution controls		OOW / Master
INITIAL RESPONSE-COMMAND CENTRE 1-Establish communication with other 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-owners Supdt 5-Secure evidence and maintain adequate records	Action Group DPC & Tugs Maintenance Manager with standby tugs	Command Centre
FURTHER RESPONSE-EMERGENCY TEAM		
1-Inspect/assess damaged area-reports to Command Centre-In case oil leakage determine whether separating vessels will increase oil spill rate 2-Ascertain oil pollution-ascertain leak source- if pollution requests port for immediate assistance 3-DPC shall board both vessels for inspection & keep tugs standby. 4-Sound all bilge, ballast and fuel tanks 5-Transfer oil from leaking tanks 5-Check damage stability and stress criteria 6-Effect damage control and temporary repairs to stop oil leakage with the assistance of port action group and underwater welding team or salvage group	Action Group u/w welding Salvage	Emergency team
SECONDARY RESPONSE- SUPPORT TEAM		
1-Provide First Aid 2-Prepare Lifeboats 3-Shut All W/T doors and vents 4-Assist as directed		Support Team Support Team Support Team Support Team
FURTHER RESPONSE-ENGINEERS TEAM		
-Attend engine room controls and services 2-Investigate engine room for damages and water ingress 3-Check switchboard for low insulation 4-Check steering gear 5-Report status of main engine and auxiliaries to Command Centre and Duty Port Captain 6-If vessels have blocked channel-tugs standby and vessels taken to repair berth/anchorage awaiting class surveyors recommendations	Duty Port Captain	Engineers Team

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 10	REV : 13	PAGE : 4	DATE : 01/07/2025

10.3 ACTION PLAN IN CASE OF SINKING OF VESSEL WITHIN THE PORT

ACTION TO BE CONSIDERED	ACTION BY PORT	ACTION BY VESSEL
IMMEDIATE ACTION		Master
1. Maneuver vessel clear of channel, turning basin to appropriate area		
2. Duty Port Captain to proceed to area with tugs	Action Group	
3. Rescue Personnel	Action Group	
4. Mark wreck area with buoys and inform Signal Station to broadcast	Tugs Maintenance Mgr. (SSIDL)	

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 11	REV : 13	PAGE : 1	DATE : 01/07/2025

SECTION - 11

UTILITY RESPONSE PLAN

11.1 ACTION PLAN IN CASE OF TOTAL FAILURE OF POWER SUPPLY

11.1.1 AT SL / S/L:

The power to S /SU is fed by 33 KV Feeder from Eastern Power Distribution Company of Andhra Pradesh Ltd EPDC. The worst crisis would be when Simadri power plant fails.

Following steps are suggested to meet such crisis

Engineer-in-charge Electrical Sub Station I & II will contact Main Receiving Sub Station MRSS of EPDC to find out the exact cause and likely duration of power failure and

- Prepare for starting standby generators wherever provided and operate change over switch at Sub-Stations for working of P.A. System.
- Switch on the emergency lights and provide supply to water pumping station.
- Announce on the Public Address System to alert working employees not to indulge in any activity which could lead to an accident.
- Undermentioned to be informed in the following order
 - a) CCR
 - b) Security at Main Gate and Custom Gate
 - c) Head ESD
 - d) OS Mech.
 - e) CEO
 - f) Head O&M
 - g) DC
 - h) Signal Station.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 11	REV : 13	PAGE : 2	DATE : 01/07/2025

- Depending upon the level of crisis, contact the Eastern Power Distribution Company of Andhra Pradesh Ltd EPDC to arrange restoration of electricity Department Supply.
- Offer necessary help that may be needed by the Electricity Department.

11.1.2 TOTAL POWER FAILURE AT PLACES OTHER THAN SL/SAL:

Persons to be contacted:

- Contact Sub-Station I or II /S / SU
- Inform
 - a Port Signal Station
 - b Port Fire Station
 - c Other concerned department
- Have the stand by Diesel Generator Set started immediately.
- Depending upon the level of crisis, contact the Eastern Power Distribution Company of Andhra Pradesh Ltd EPDC to speed up supply of electricity supply.
- Offer necessary help that may be needed by the Electricity Department.

11.2 ACTION PLAN IN CASE OF MAJOR EQUIPMENT FAILURE

Persons to be contacted:

- Intimate all concerned departments who are affected by the non-availability of the equipment and approximate period of non-availability from breakdown.
- Investigate to assess extent of the breakdown and damages caused, if any, to other components, etc.
- Refer to manufacturer's/supplier's manuals for laid down/prescribed guidelines, if any, to attend to the breakdown and spares required for replacement.
- Check position of required spares with Head TC
- Contact other Ports or Organizations using similar equipment for spares/technical guidance etc.
- Contact manufacturers/suppliers of the equipment by telephone/email/fax or other possible means in respect of any doubts/clarifications, necessary spares required/services required, etc., if found necessary.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 11	REV : 13	PAGE : 3	DATE : 01/07/2025

- List down step by step procedures/methods recommended to be adopted to attend to the breakdown of the equipment.
- Plan and organize properly sectional/departmental facilities, staff, tools, tackles, etc. for attending the equipment under breakdown on round the clock basis.
- Contact other departments also for any additional facilities/services etc. required from them and for their availability when required at short notice.
- Contact outside local/outstation agencies/contractors for any of their services/facilities required.
- Follow step by step methods prescribed/worked out to attend to the equipment under breakdown for necessary repairs/replacements.
- Re commissions the equipment after necessary trials.
- Inform all concerned about commissioning of the equipment.
- Investigate in detail causes of failure and remedial steps to prevent recurrence.

11.3 ACTION PLAN IN CASE OF CRISIS IN WATER SUPPLY

The water supply to Port is received from Greater Visakha Municipal Corporation (GVMC). The approximate quantity of water received from GVMC per day is 800 Cu.M. The port has one over head tank of capacity 200 Cu.M and one underground reservoir of capacity 2000 Cu.M.

To meet an emergency arising out of poisoning/contamination of water supply sources, the matter should be brought to the notice of any one or all of the following officers at their office or residence depending on the time of the incidence, who will take immediate needed steps.

Sr. No.	Designation	Office BSN EPABX		Residence BSN	Mobile
1.	OS Mech.	2889999	40709		9989099799
2.	OD/ESD	2889999	40516		9727784691
3.	OS Civil	2889999	40765		9248091940

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 11	REV : 13	PAGE : 4	06	DATE : 01/07/2025

□ OS □ Mech. □ will be nodal officer

In case of electrical/mechanical assistance for pumping out of contaminated water etc. the matter will be brought to the notice of the following officers by □ ead □ ESD □ who will render immediate assistance □

Sr. No.	Designation	Office BSN □ EPABX		Residence BSN □	Mobile
1.	□ ead □ ESD □	2889999	40516		9727784691
2.	□ OS □ Mech. □	2889999	40709		9989099799
3.	□ OS □ BO □	2889999	40632		8978180333

In case of contamination of water supply to ships, barges etc., either from hydrants or through water barge, the matter should be brought to the notice of the following officers for needful action □

Sr. No.	Designation	Office BSN □ EPABX		Residence BSN □	Mobile
1.	DC	2889999	40591		7675992111
2.	DPC	2889999	40593		9246639400

For meeting any emergency needed for security of wells, pipelines, sumps etc. the following officers will be contacted by □ ead □ ESD □ / □ OS □ Civil □ who may render required assistance.

Sr. No.	Designation	Office BSN □ EPABX		Residence BSN □	Mobile
1.	□ OD □ Security □	2889999	40508		7227020722
2.	□ OS □ Security □	2889999	40781		9989387888

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 11	REV : 13	PAGE : 5	006	DATE : 01/07/2025

To take emergency steps to treat the patients suffering from consuming contaminated water, contact

Sr. No.	Doctor	Office BSN	EPABX	Residence BSN	Mobile
1.	Medical Officer	288999	40601		7013781538

Head F&S and FSO shall mobilise staff and form groups one for informing each and every building and other places of consumption regarding contamination of water and another for mobilising the water tanker through contractor to collect water from sources not contaminated after conducting test with the help of Environment Cell staff / Manager and making sure of its potability to supply to operational areas, offices etc. The Fire Tender attached to the Fire Brigade shall also be made use of for this purpose.

Head ESD shall simultaneously alert the DC and Head Security

Head Security shall be intimated immediately so that he can take charge of transporting patients who have consumed contaminated water, to the nearest hospital. Head Environment shall also be requested to test the water from different sources to verify its potability and also for assessing the nature of contamination and to advise remedial measures to be taken in the shortest possible time.

In case of any contamination of water by bacteria causing jaundice etc. all occupants of the building and other places of consumption will be advised to drink water only after boiling it for half an hour and filtering.

DC/DPC will be advised to alert the ships that water supply will be either limited or will not be supplied with any water depending on the severity of the situation. DC will also be requested to keep the Fire Tender in readiness to assist any cases arising out of consumption of contaminated water.

OS Security will also be alerted to keep a strict vigil against acts of further sabotage and contamination by poisoning etc. so that he can arrange posting of required personnel along the pipeline and at other water supply installations like sump well, jetty, workshop etc. The alert will be removed once the condition comes back to normal.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 11	REV : 13	PAGE : 6	DATE : 01/07/2025

11.4 ACTION PLAN IN CASE OF PERSON FALLING IN THE DOCK/ATERS

- Person noticing the incident
 - To raise alarm and throw life buoy placed at all berths and in Port Crafts.
 - Inform signal station on mobile no. 90002 34479, Tel. no. 0891-2889987 or VHF Ch.14/16 as soon as possible.
- Signal Station to alert
 - Tugs/Boat and direct pilot/mooring launch to proceed to the incident scene immediately.
 - Mooring crew to reach the spot to assist in rescue operation.
 - Fire & Safety to reach the scene with ambulance.
 - Concerned head of the dept. and Head O&M
 - Inform DC
- In case the person fallen overboard is not found
 - Head O&M to engage diver in consultation with DC/DPC
 - Head Security to inform the local police in case of casualty of the person.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 12	REV : 13	PAGE : 1 ☐ ☐ 11	DATE: 01 ☐ 07 ☐ 2025

SECTION – 12
NATURAL CALAMITIES

12.1.1 ACTION TO BE TAKEN IN CASE OF STORM WARNING NO.1

1. Monitor IMD web site for location of the depression and forecast issued.
2. Circulate weather bulletin to all departments issued by IMD for their information.
3. Inform the management regarding forecast.
4. All HOD's are to be informed regarding the storm forecast during daily Operations meeting.

12.1.2 ACTION TO BE TAKEN IN CASE OF STORM WARNING NO.2

1. Monitor IMD web site on regular basis for location of the depression/ cyclone and forecast issued.
2. Circulate cyclone warning bulletins to all departments issued by IMD for their information and necessary precautions.
3. Keep the management updated with the forecast and track of the cyclone.
4. Port Control to monitor weather parameters closely and record wind speed, wind direction, sea state and barometric pressure every 4 hrs and if the weather deteriorates further then even at shorter duration.
5. All vessels in the port, including at anchorage, are to be advised regarding approaching cyclonic storm. Vessels at berths are to be advised regarding additional precautions to be taken.
6. All HOD's are to be informed regarding approaching cyclonic storm during daily Operations meeting.

12.1.3 ACTION TO BE TAKEN IN CASE OF STORM WARNING NO.3 & 4

1. Monitor IMD web site on regular basis for location of the cyclonic storm and forecast issued.
2. Circulate cyclone warning bulletins to all departments issued by IMD for their information and necessary precautions.
3. Keep the management updated with the forecast and track of the cyclone.
4. Port Control to monitor weather parameters closely and record wind speed, wind direction, sea state and barometric pressure every 2 hrs.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 12	REV : 13	PAGE : 2	DATE: 01/07/2025

5. All vessels in the port including at anchorage are kept advised regarding approaching cyclonic storm by VHF through Port Control. All vessels at berths are to be advised to keep their vessel in state of readiness to suspend cargo operations and vacate berths to shift to anchorage.
6. All HOD's are to be informed regarding the expected intensity and track of the storm during daily Operations meeting.
7. Staff of the port crafts to be instructed regarding precautions to be taken.

The Dy. Conservator shall inform the CEO and Head O&M.

The DC/DPC shall contact all the ship agents on telephone and ships in Port by a special messenger or on VHF. He should ask all ships in Port to be standby on VHF channel 16. OS Mech. will take steps for safety of the Plant and cranes. Head O&M should warn all stevedores and if necessary get the cranes shifted to safer positions. If the vessels are surging, Head O&M may stop cargo work at his own discretion. He should inform OS BO to secure all the cranes in position and also take precautionary measures for safeguarding cargo which is lying at the wharf area. OD Security to contact the Supdt. of Police who in turn will be required to contact the Director of Fisheries and other concerned officials of the State Govt.

Tugs Maintenance Manager SSID shall instruct the tugs and launches to keep their engines standby. He shall inform the ships alongside berths to double up their moorings and he will direct the shore mooring crew to assist the vessels in providing additional moorings. They should also ensure that the ships are provided with extra springs.

Tugs Maintenance Manager SSID shall ensure that all idle crafts are shifted to no.9 Berth. Necessary action in this regard should be reported to the Harbor Master.

Duty Pilot shall proceed to the Harbour on receiving information from the Signal Station/ Deputy Conservator and should ensure that the ships have their engines ready and sufficient crew on board, and check up all moorings of vessels alongside berths including port crafts. He should contact all the vessels at anchorage and ensure that they keep their engines standby. Duty Pilot and the Deputy Conservator should ensure that extra cable is laid off by vessels at anchorage and Masters should be directed to keep the second anchor standby. Duty Pilot to patrol the harbor in pilot launch to ensure that, all the vessels have taken safety measures.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 12	REV : 13	PAGE : 3	DATE : 01/07/2025

12.1.4 ACTION PLAN IN CASE OF STORM SIGNAL 5 TO 7

1. Monitor IMD web site on regular basis for location of the severe cyclone and forecast issued.
2. Circulate cyclone warning bulletins issued by IMD to all the departments for their information and necessary precautions.
3. Keep the management updated with the forecast and track of the cyclone.
4. Port Control to monitor weather parameters closely and record wind speed, wind direction, sea state and barometric pressure every 2 hrs.
5. All vessels in the port including at anchorage are kept advised regarding approaching cyclone by V/F through Port Control. All vessels at berths are to be advised to keep their vessel in state of readiness to suspend cargo operations and vacate berths to shift to anchorage at short notice.
6. Berths are vacated by the vessels as decided by the port.
7. All HOD's are to be informed regarding the expected intensity and track of the storm during daily Operations meeting and they are advised to take relevant necessary measures to prevent damage to equipment and machinery and reduce manpower to the minimum to maintain essential services.
8. Activate crisis control centre.
9. Secure berth areas.
10. Advise Operations department
 - To suspend cargo operations
 - To secure cargo handling equipment at their respective storm locking positions.
 - To secure all loose items which are likely to shift and cause damage.
 - To shift cargo away from water front area.
 - To evacuate labourers from the berth areas.
 - To secure go downs.
 - To evacuate all vehicles and mobile equipment from the berth areas.
11. Advise Engineering Services department
 - To secure cargo handling equipment at their respective storm locking positions.
 - Conveyors to be vacated free of cargo.
 - To secure all loose items which are likely to shift and cause damage.
 - To evacuate manpower from the berth areas.
 - To evacuate all vehicles from the berth areas.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 12	REV : 13	PAGE : 4	DATE : 01/07/2025

12. Advise fire station to prepare for any flood situation due to heavy rain.
13. Inform port crafts to vacate berth and remain at anchor in the turning circle. Engines may be used to maintain position.

12.5 ACTION PLAN IN CASE OF STORM SIGNAL 8 TO 10

1. Monitor IMD web site on regular basis for location of the very severe cyclone and forecast issued.
2. Circulate weather bulletin to all departments issued by IMD for their information and necessary precautions.
3. Keep the management updated with the forecast and track of the very severe cyclonic storm.
4. Port Control to monitor weather parameters closely and record wind speed, wind direction, sea state and barometric pressure every hour and keep DC / DPC informed.
5. To evacuate all personnel from port area.
6. To advise security department regarding no entry to port premises.
7. To keep port management informed of the situation.
8. To keep Medical Team standby for first aid.
9. Port crafts to take all necessary measures to ensure they remain in the turning circle and away from berths.

12.6 ACTION WHILE EXPERIENCING STORM

1. No entry is permitted to the port.
2. Port Control to monitor weather parameters closely and record wind speed, wind direction, sea state and barometric pressure every hour and keep DC / DPC informed.
3. Monitor IMD web site closely for location of the very severe cyclonic storm and forecast issued.
4. Circulate cyclone warning bulletins issued by IMD to all the departments for their information and necessary precautions.
5. Keep in contact with port crafts and monitor their positions.
6. To keep port management informed of the situation.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 12	REV : 13	PAGE : 5 of 11	DATE : 01/07/2025

12.17 ACTION TO BE TAKEN BY SL/SOL STAFF IN STORM

A. Sumps - 1st:

- Machine to be travelled to the designated location.
- Anchoring bolts to be fixed in position.
- Rail clamps to be tightened.
- Grab bucket to be rested on the hopper in fully open condition.
- Doors and windows of the E-house to be closed and bolted.
- All the doors and windows of the Operators Cabins to be closed and bolted.
- Outgoing feeder to be switched off at the Sub-Station.

B. Stacker and R-1st:

- Machine to be travelled to the designated position.
- Boom to be slewed into the forked stand but not rested.
- Slew locking bolts to be fitted.
- Anchoring arrangements to be made for base frame.
- Rail clamps to be tightened.
- All wheels, particularly of the tripper car, to be wedged.
- E-house and Operators cabin windows and doors to be closed and bolted after switching off all the drives.
- Outgoing feeder in sub-station to be switched off.

C. Sumps - 1st:

- Conveyors to be cleared of all the cargo.
- C. T. be brought to locking position and locked.
- Close all the doors and windows of the front operator's cabin and operations continue only from the rear cabin.
- Boom to be hoisted and locked.
- Travel the machine to the designated location and fix anchors.
- Rail clamps and C. T. brakes to be tightened.
- Tripper car wheels to be wedged.
- Close all the doors and windows of the E-house and Operators Cabin after all drives are switched off.

D. Drums House and E-House:

- All doors and windows to be closed and bolted after putting off all the respective switches.
- Outgoing feeders to be put off from Sub- Station.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 12	REV : 13	PAGE : 6	11	DATE : 01/07/2025

E□ C□□□□y□rs:

- Inclined portion of all the conveyors should be tied down after clearing the belts.

F□ M□□□□ E□u□□□ □□t:

- The mobile e□uipment will be parked in a protected shed in the case of storm.

12.1.8 ACTION TO BE TAKEN AFTER EXPERIENCING THE STORM FOR RESTORATION OF NORMAL OPERATIONS

1. Carry out hydrographic survey of the channel, turning circle and berth face areas to ascertain available depth of water required for safe navigation and berthing of vessels.
2. Check location and working status of channel marker buoys and other navigational aids.
Ensure all channel marker buoys are in proper position before permitting navigation of vessels in the channel.
3. Engage divers to carry out under water inspection of berth face areas for any fallen material/ objects which may cause obstruction to safe berthing of vessels.
- 4□ Engage divers to carry out under water inspection of berth pilings etc for structural integrity prior berthing of any vessel.
- 5□ Check functioning of VTMS comprising of radar system, AIS, V□F communication and weather monitoring system.
- 6□ Check the condition of berth fenders.
- 7□ Verify Structural condition of all berths and take confirmation from civil engineering department prior berthing of any vessel.
- 8□ Check functioning of fire - fighting e□uipment and pollution response e□uipment.
- 9□ Take confirmation from port crafts regarding their availability and efficient operational status.

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

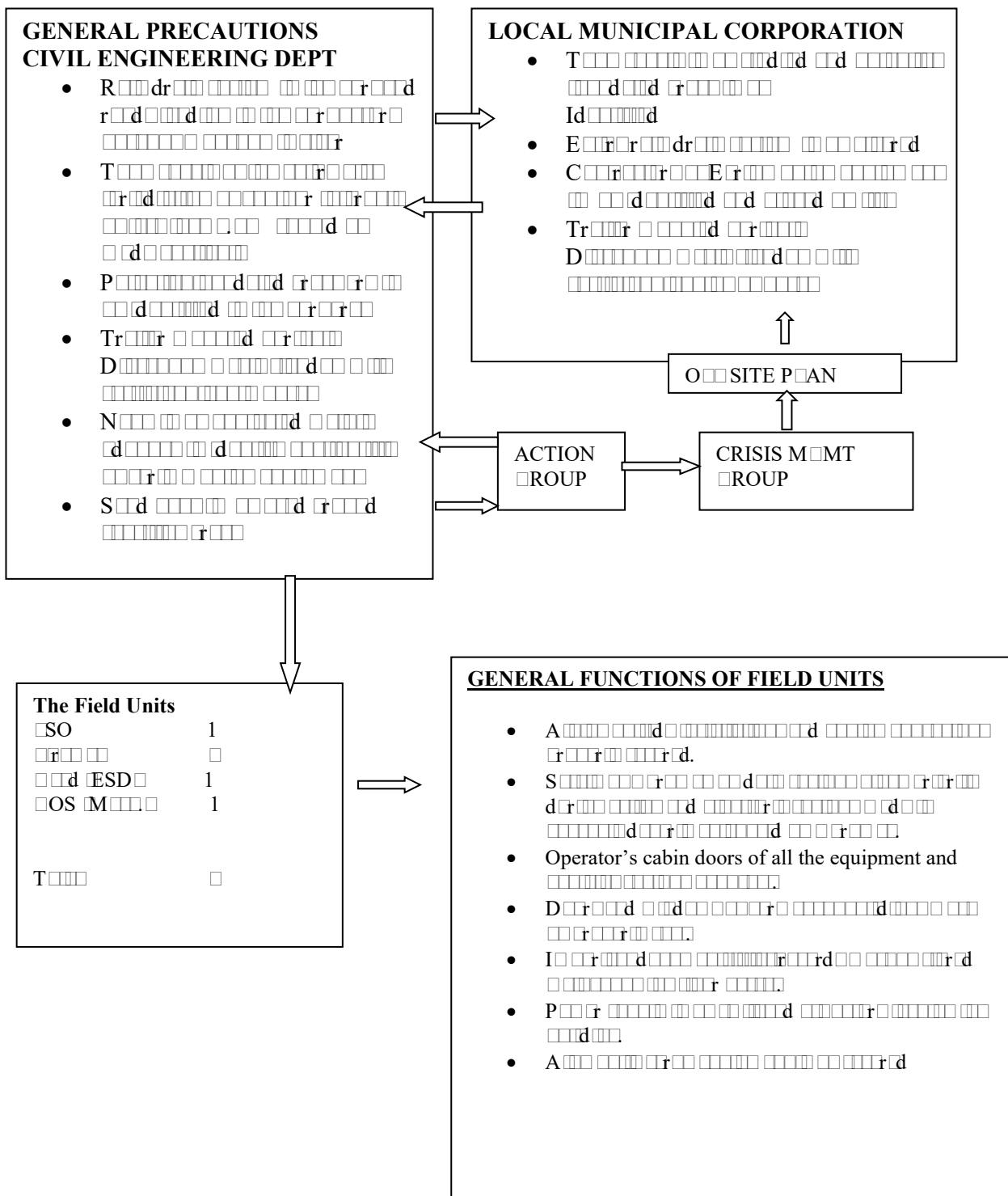
SECTION : 12

REV : 13

PAGE : 7 of 11

DATE : 01/07/2025

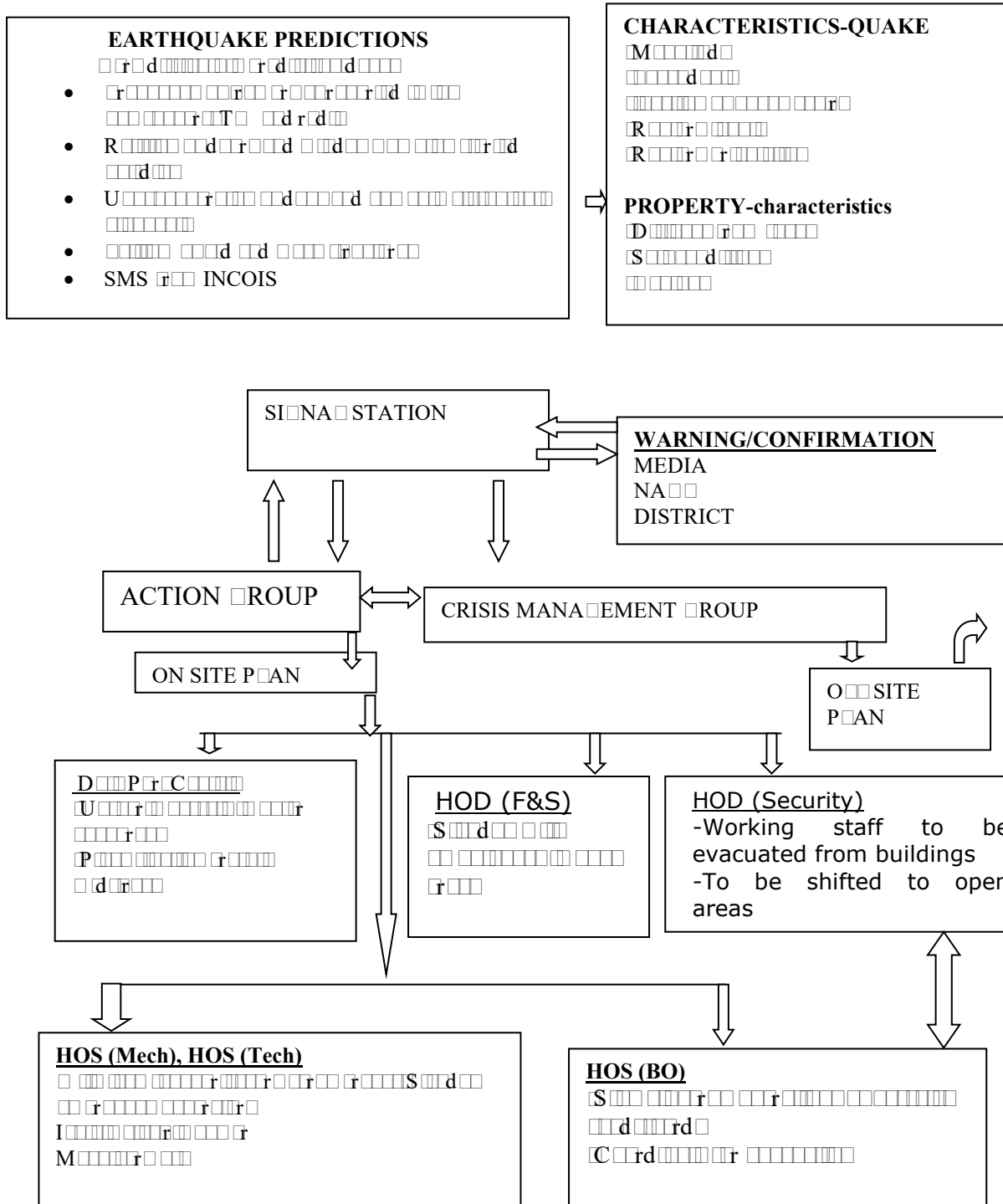
12.2 ACTION PLAN IN CASE OF FLOODS



ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 12	REV : 13	PAGE : 8	DATE : 01/07/2025

12.3 ACTION PLAN IN CASE OF EARTHQUAKE



ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

SECTION : 12	REV : 13	PAGE : 9	DATE : 01/07/2025

- Earthquakes may or may not give any warning before it hits. Sometimes, low magnitude tremors may be felt before a bigger one hits. But usually the time is too short to realise and act. Before anyone can act, the damage and devastation is done. Similar is the case with flash floods.
- Assess the extent of damage and mobilise relief work accordingly. Surrounding areas are likely to be affected and relief work will have to be carried out there as well.
- Earth-moving equipment, cranes, medical help, manpower, fire fighting equipments may be required. External help from the Navy/Army may be required as they are trained to help in such calamities. AGPP personnel and equipment will co-ordinate with Army/Navy for relief work, if required.
- All HODs to assemble and co-ordinate in the relief work under charge of the CEO. Department wise action plan in case of natural calamities is placed at Appendix – A.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 12	REV : 13	PAGE : 10	11	DATE : 01/07/2025

12.4 ACTION PLAN IN CASE OF TSUNAMI

- ◆ PREDICTIONS – If any, may be received from INCOIS. Will have to rely on TV, radio report and Central Govt. agencies for forewarnings, if any. Tsunami may be caused due to earthquake in the region.
- ◆ CHARACTERISTICS – Tsunami is to be expected when there is a sudden, unexpected fall in water level. On the beach, it is apparent by a sudden unexpected drying up of the beach due to fast receding water.
- ◆ OBSERVATIONS – Tidal level should be monitored continuously and compared with expected levels. A variance between the two is likely to indicate the presence of a Tsunami in the region.
- ◆ ACTION PLAN – All non essential personnel to be evacuated to a higher ground – at least 30mtrs. above sea level or proceed at least 3kms. by distance. All other actions to be taken as per action plan in case of an earthquake. All vessels must proceed to sea, into deeper waters, at least more than ten miles from the coast. Other vessels which cannot go to sea must attend to their mooring ropes continuously. Crew to wear life jackets. Vessels to maintain communication link with Port Signal Station.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 12	REV : 13	PAGE : 11	DATE : 01/07/2025

12.5 RELIEF OR WILL BE DISTRIBUTED AS FOLLOWS:-

CEO	Overall in-charge
DC	To liaise with Navy, Army, etc. To see to the safety of ships and port crafts at the berths.
Head ESD	To provide earthmoving equipments, cranes, forklifts, bulldozers, pneumatic hammer. Also to ensure his dept. maintains electric supply and safety of cranes, etc.
OS Tech	Deployment of Engineers and staff for directing/guiding earthmoving/crane equipments in the removal of debris.
Head Security Medical Officer	To provide food, transport and other relief measures, also to coordinate with Police, Collector, Army, and Navy as required. To provide ambulance and medical relief.
Head O&M	To ensure safety of godowns and cargo.
Head Security	To deploy full strength for assisting in rescuing trapped persons and for safeguarding against pilferage.
Head F&S	To help in clearing debris and rescuing trapped persons.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 13	REV : 13	PAGE : 1	DATE : 01/07/2025

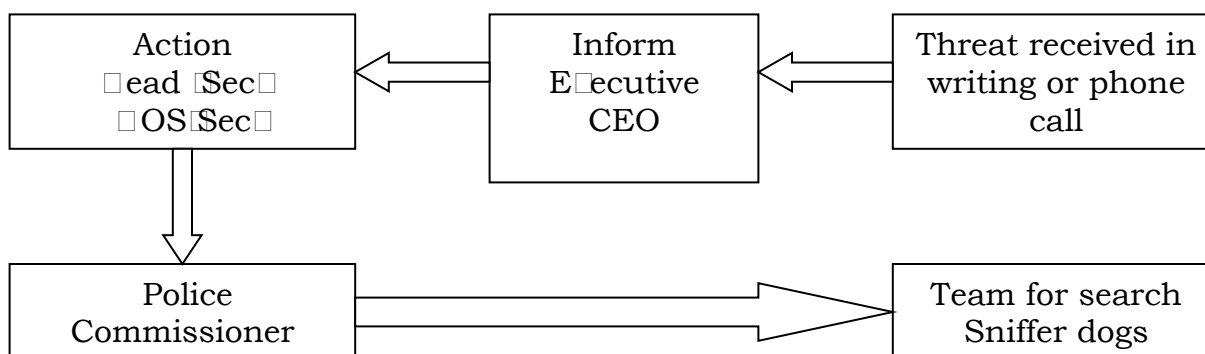
SECTION – 13

13.1 AR/TERRORISM

13.1.1 BOMB THREAT

Objectives:

- To avoid loss to lives and property.
- To eliminate panic and build up confidence.
- To be prepared for the safe handling/disposal of a bomb.



Bomb threat is to be considered Level II or Level III Crisis.

Head Security/ HOS Security Responsibilities

- Apprise – CEO, Head O&M, Deputy Conservator and Duty Port Captain of contemplated action.
- Requisition fire tender and ambulance and station them at safe distance. Prepare threatened area for fire fighting, casualty handling, search and rescue operations.
- Prepare for partial/total evacuation as required by CEO.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 13	REV : 13	PAGE : 2	DATE : 01/07/2025

- Designate the team for bomb search – secure assistance from Police/ Sniffer dogs.
- On arrival of BDDS, Chief Security Officer to provide all necessary assistance.
- Chief Security Officer may seek assistance from PFSO or for liaison between departments of AGPP and outside agencies.

Bomb Detection and Disposal Squad (BDDS)

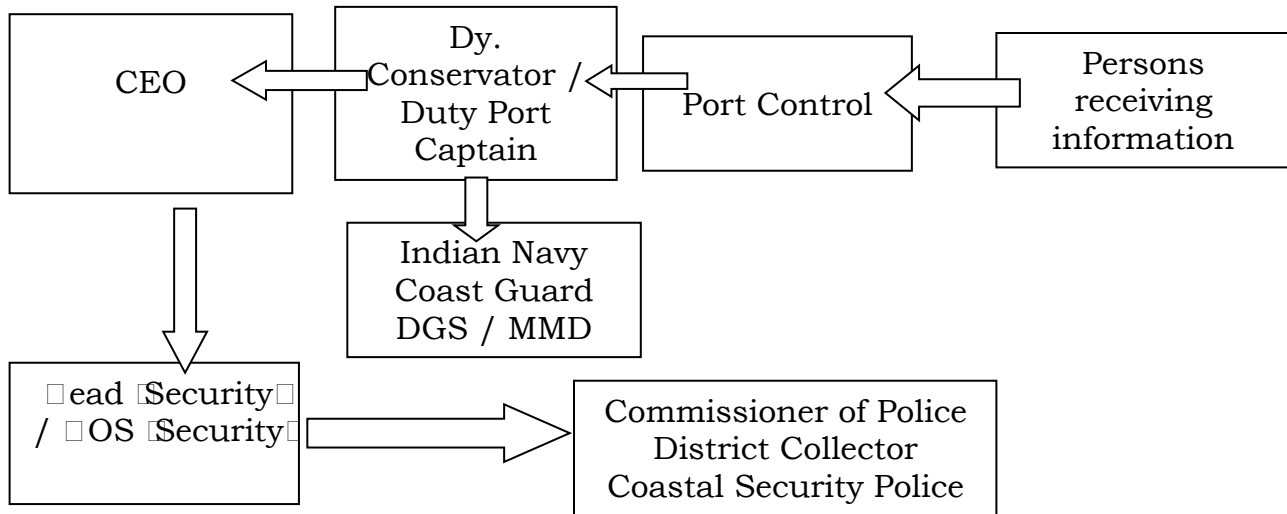
The telephone numbers are as follows

New Port Police Tel. no.0891-2707100, Mobile no.9440904309

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 13	REV : 13	PAGE : 3	DATE : 01/07/2025

13.2 HIJACKING OF VESSEL IN PORT LIMITS - HOSTAGE SITUATION



Hijacking of vessel in port limits and hostage situation is to be considered Level II or Level III Crisis.

Duty Conservator / Duty Port Control Responsibilities

- After getting information from Port Control appraise CEO and Head O&M and mobilize tugs to position themselves at the entrance of the harbour to prevent forced entry of the hijacked vessel into the harbour.
- Inform Indian Navy & Coast Guard of the emergency situation and requisition help with regard to negotiators/snipers etc.

Head Sec / HOS Sec Responsibilities

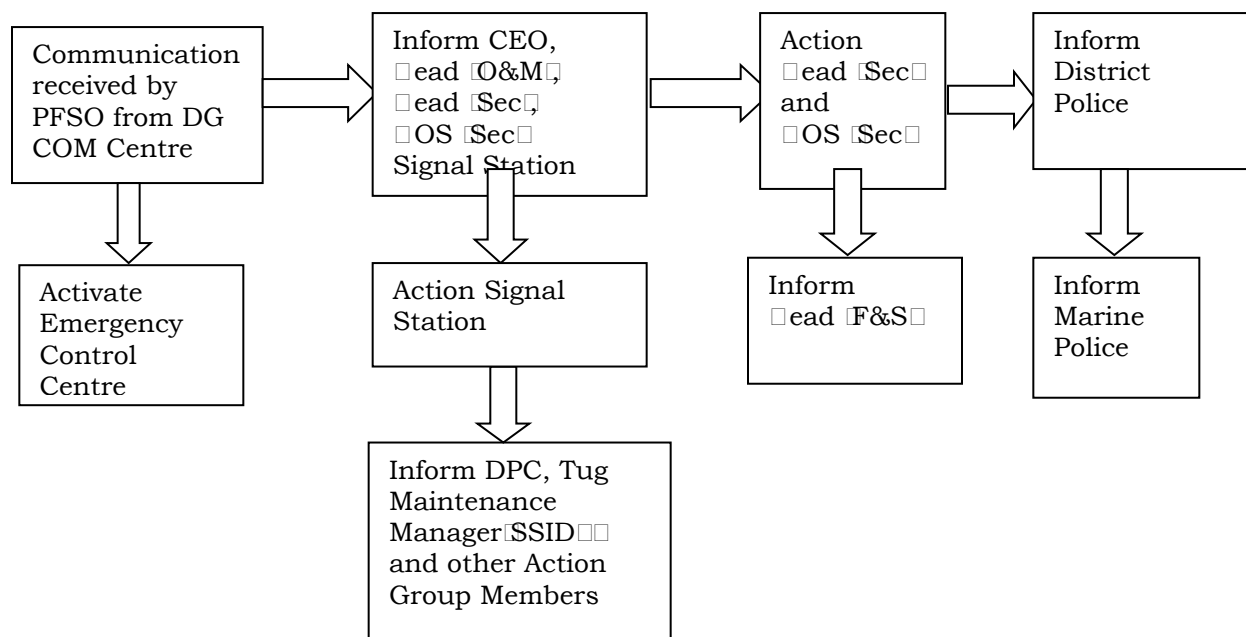
- Appraise CEO, Head O&M, Deputy Conservator & DPC of contemplated action.
- Prepare threatened area for firefighting, casualty handling, search and rescue operations.
- Inform State Police & Coastal Security Police and requisition help with regard to negotiators/snipers etc.
- Security personnel to cordon off area and deny access to persons hampering operations especially media and onlookers.
- Buy time for negotiators to arrive or for formalising proper plan of action.
- Police/Chief Security Officer shall assess the situation and based on the assessment, CEO may permit operation deemed fit to free hostages.
- Commissioner of Police VSP City
0891-2562763 / 0891-2562709 / 0891-2525500 / 0891-2569811

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 13	REV : 13	PAGE : 4	DATE : 01/07/2025

13.3 ACTIVATION OF SHIP SECURITY ALERT SYSTEM

13.3.1 IN PORT (ALONGSIDE BERTH)



RESPONSIBILITIES:

Head Security/HOS Security:

- Apprise CEO, Head O&M and DC of contemplated action.
- Requisition fire tender, ambulance and station them at safe distance.
- Cordon off the berth the ship is occupying.
- Prepare for fire fighting, casualty handling and search & rescue operation.
- Coordinate with District Police.

DC/PFSO:

- To coordinate with the Coast Guard and DG Com centre.

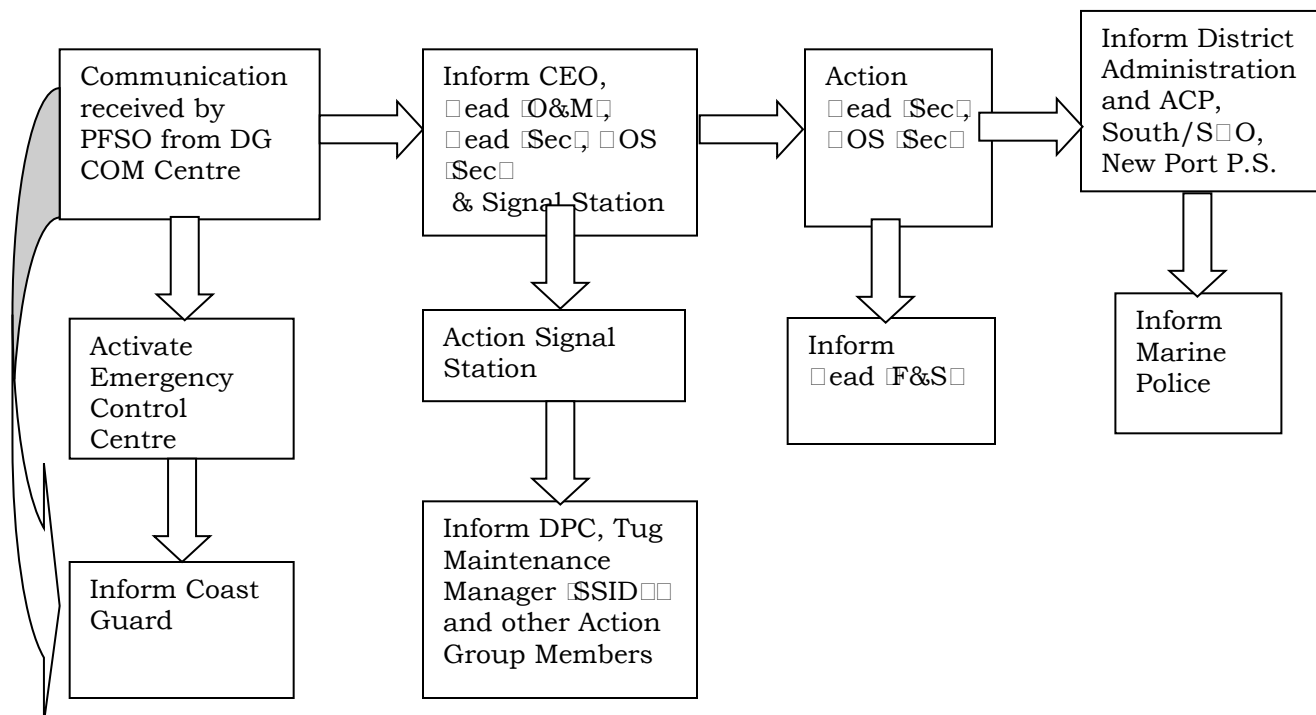
DPC /Action Group

- To proceed to the site and keep Emergency Control Centre apprised of the situation.
- Instruct Base Manager to keep Pilot, tugs & launches stand by for firefighting, combating pollution, un-berthing vessels from adjacent berths or render any other assistance that may be required.
- To keep oil pollution control equipment in readiness.
- To keep mooring crew stand by.

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 13	REV : 13	PAGE : 5	DATE : 01/07/2025

13.3.2 IN PORT AT ANCHORAGE



RESPONSIBILITIES:

HEAD SECURITY/HOS SECURITY

- Apprise CEO, Head O&M and DC of contemplated action.
- Requisition ambulance and station them at suitable berth.
- Prepare for casualty handling and search & rescue operation.
- Coordinate with District Administration and District Police.

DC/PFSO:

- To coordinate with the Coast Guard and DG Com centre.

DPC /Action Group

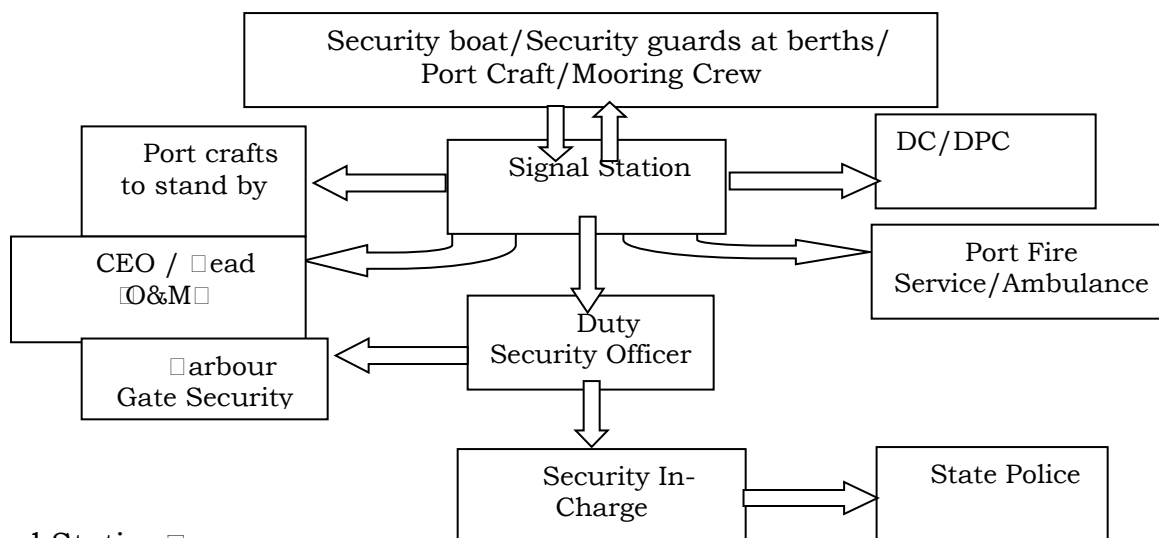
- To proceed to the site on a tug and keep PFSO/ Emergency Control Centre apprised of the situation.
- Instruct Base Manager to keep tugs & launches stand by for fire fighting, combating pollution or render any other assistance that may be required.
- To keep oil pollution control equipment in readiness.

ADANI GANGAVARAM PORT LIMITED

CRISIS MANAGEMENT PLAN

SECTION : 13	REV : 13	PAGE : 6	DATE : 01/07/2025

13.4 INTRUSION BY UNAUTHORIZED BOAT



Signal Station

1. Informs the security boat to intercept the unauthorized boat. V/F C.14/16 Informs duty Security officer U/F or EPBX 2704477, 2889999 – Intercom 40781/40790, Port fire service/Ambulance V/F C.14 or EPBX 2704477, 2889999 - Intercom 40604, Port Crafts V/F C.14, DC-7675992111/DPC-9000234479and Head O&M - 7738191831 /Head ESD 9727784691
2. Follow instruction issued by DC/DPC.
3. Record all occurrences and maintain communication link with the duty security officer.

Port Fire Service and Ambulance

1. To stand by in state of readiness along with ambulance.

Duty Security Officer

1. Mobilize RT to proceed to berth no.1 to board pilot launch to assist in interception of the boat.
2. Inform security in-charge and harbour gate.
3. Mobilize additional security to proceed to the site as informed by Signal Station

Security In-Charge

Co-ordinate with the state police

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 13	REV : 13	PAGE : 7 008	DATE : 01 07 2025

DPC

Inform Navy - 2547100/CG - 2547266/CEO/Head O&M/ Head ESD

DC

Co-ordinate with crisis management group and establish emergency control centre.

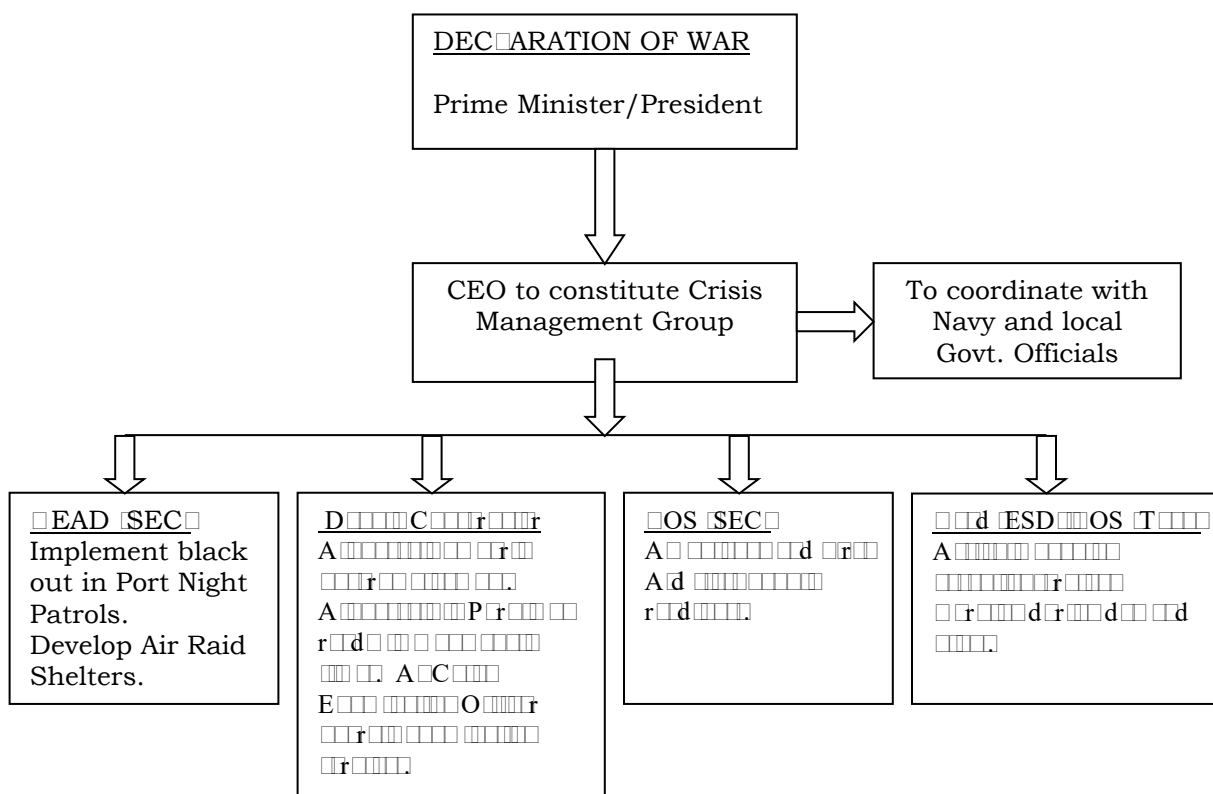
I **d** **t** **t** **y** **y** **rs** **t** **trus**

- Flash search light on the target
- Blow whistle/Raise alarm V F

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

SECTION : 13	REV : 13	PAGE : 8	DATE : 01/07/2025

13.5 DECLARATION OF WAR



All other MODs to carry out duties and responsibilities as per Emergency Action Plan.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 14	REV : 13	PAGE : 1	DATE : 01/07/2025

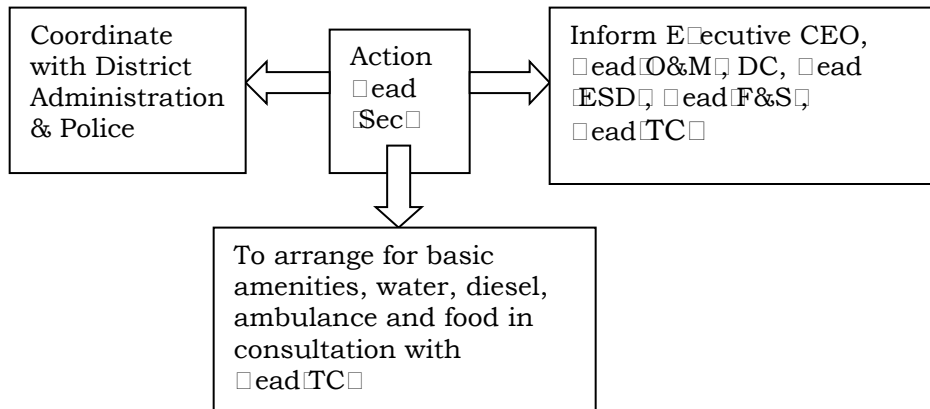
SECTION -14

CIVIL DISTURBANCE / LABOUR DISPUTE

14.1 CIVIL DISTURBANCE

Objectives:

- To deal with situations of break down of law and order.
- To avoid disruption of port operations.
- To prevent damage to port property.



RESPONSIBILITIES:

HEAD SEC:

- To keep in touch with the district administration & police.
- To keep CEO, Head O&M and all departmental heads apprised of the situation.
- To coordinate with OS SEC and keep Port Security in state of high alert.

Dy Chief Officer:

- To maintain marine services with the help of DPC/ Tugs Maintenance Manager SSID.
- To coordinate with DG COM Centre.

Head O&M:

- To sustain cargo handling operations with skeleton staff and labour.
- Rotate staff and labour to avoid fatigue.

Head ESD:

- To keep the water & electric supply and all utility services running.
- To ensure cargo handling equipments are operational.

Head F&S:

- To keep fire tender in state of readiness.

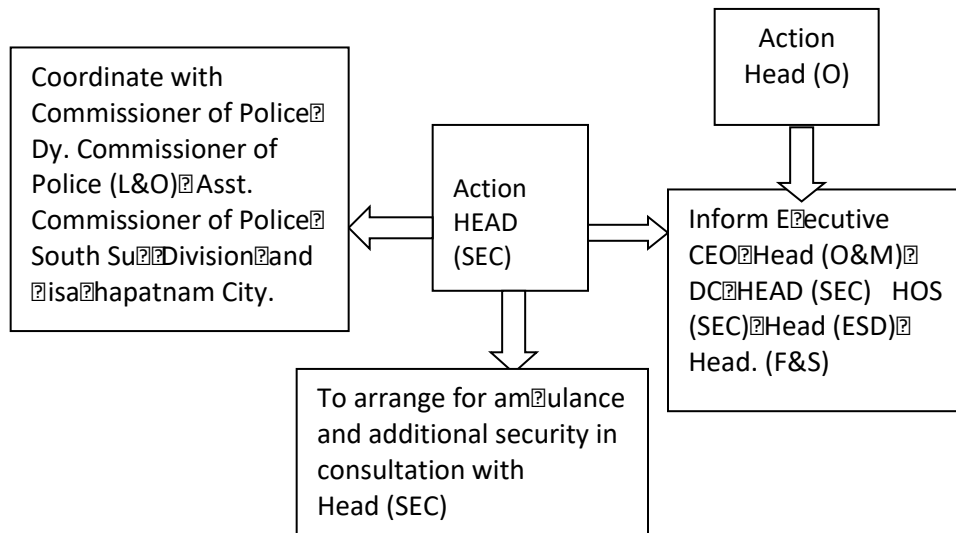
**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 14	REV : 13	PAGE : 2	DATE : 01/07/2025

14.2 LABOUR DISPUTE

Objectives:

- To avoid disruption of port operations.
- To prevent damage to port property.
- To deal with situations such as unruly behavior of labour.



RESPONSIBILITIES:

HEAD :

- To sustain cargo handling operations with skeleton staff and labour.
- Make alternative arrangement for labour in consultation with management to avoid disruption of cargo operations.

Dy Chief:

- To maintain marine services with the help of DPC/ Tugs Maintenance Manager SSID.

HEAD SEC:

- To keep in touch with the Commissioner of Police/ Dy. Commissioner of Police L&O/ Asst. Commissioner of Police, South Sub-Division, Visakhapatnam City.
- To keep Executive Chairman and all departmental heads apprised of the situation.
- To keep security in state of high alert.

HOS :

- To keep the water & electric supply and all utility services running.
- To ensure cargo handling equipments are operational.

Head FS:

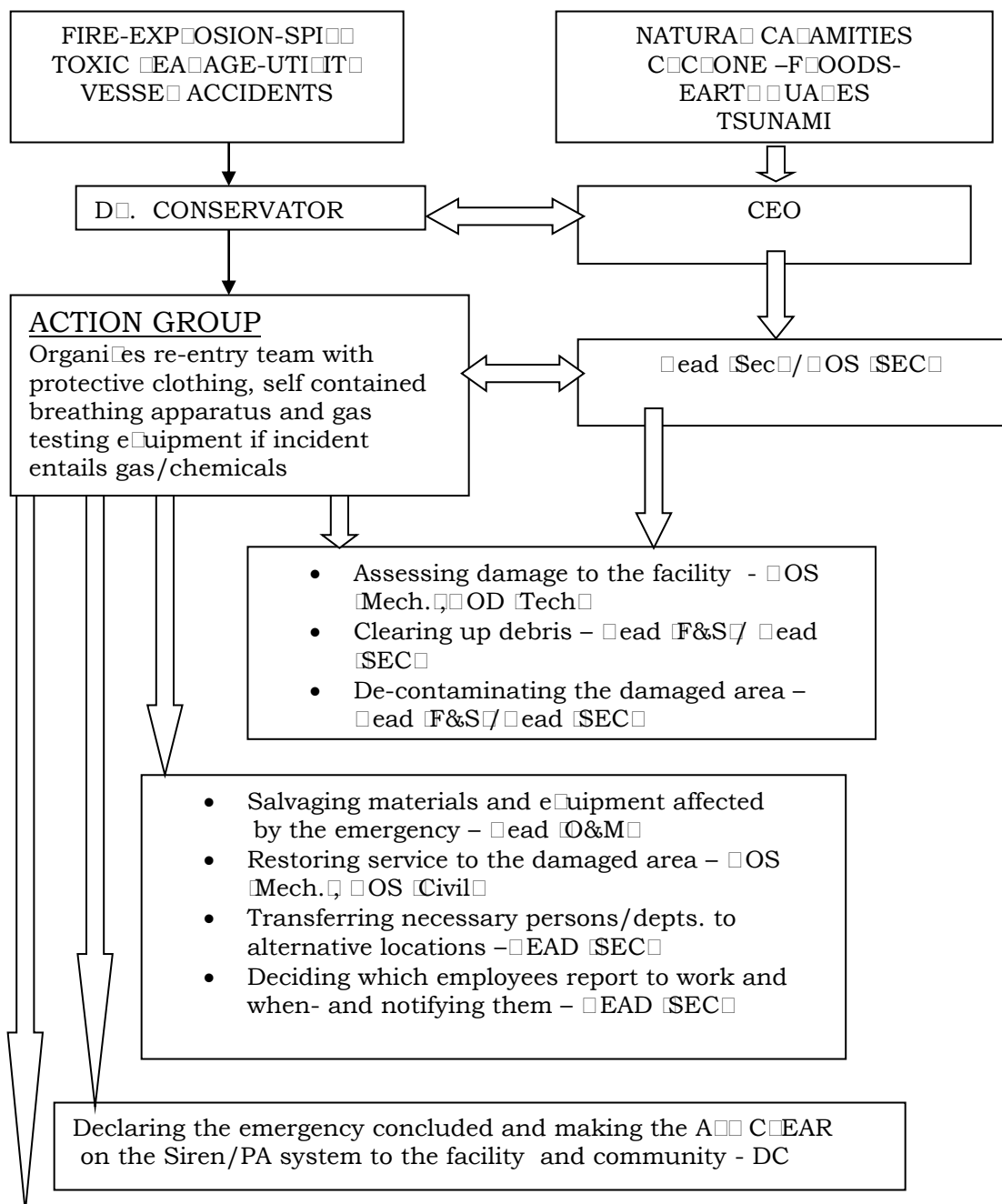
- To keep fire tender in state of readiness.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 15	REV : 13	PAGE : 1	DATE : 01/07/2025

SECTION 15

DE-ACTIVATION OF THE PLAN-RECOVERY-RE-ENTRY-RESTORATION



Note-For natural calamities etc at the District level-the District collector or District magistrate will make the necessary initiative through the paramilitary group. The Port Chief Executive officer may also request para military personnel to assist when the accidents have originated at the port premises

□ Action Group constitutes all Dy. □ODs under the overall-in-charge of DPC.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

SECTION : 16	REV : 13	PAGE : 1 □ □ 1	DATE : 01/07/2025

SECTION - 16

TRAINING □ MOC □ DRILLS

- A well coordinated programme of training exercise includes activities of varying degrees of interaction and complexity.
- The following exercises will be carried out during the year □
 1. Paper □Table-Top□ Exercises□ to check availability from the participants of their mutual aid resources, and check response-time.
 2. Mock Drill□To check the effectiveness of the resources, and monitor shortfalls, if any.
 3. □early Review□Meeting of off-site members to evaluate and update the Emergency Action Plan.
 4. TRAINING□ Train port personnel in activities which support the avoidance of a crisis. Programmes totally dedicated to the management of crisis are identified. They will be developed, and instituted, and upgraded as and when necessary to cope up with changing situations.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

APPENDIX - A

P 000 1 005

**DEPARTMENT OF IS ACTION PLAN
IN CASE OF NATURAL CALAMITIES**

A. ADMINISTRATION DEPARTMENT

HEAD (SEC) shall ensure setting up of the control room at A. O. Bldg. within two hours of warning and the matter reported to the CEO. He shall arrange to open the schools /community hall, etc. and keep them ready for accommodating the evacuated people.

He shall inform all the public/private companies operating in the port about the situation and tell them to evacuate the people and take necessary steps. List of Shipping Agents and Stevedores are placed at Annexure – X & XII respectively.

The staff attendance on days when the action plan is in operation shall be collected by HEAD (SEC) and reported to CEO every day with separate list of absentees. He will also ensure presence of staff by following the required action.

HEAD (SEC) will do the overall supervision of the work and report the compliance to CEO within two hours of the warning received. He will be overall in-charge for liaison work with State/Central Govt. Officials, IMD, etc.

All UODs shall send Action Taken Report to HEAD (SEC)/Control Room in writing by fax or telephone with regard to the action required of them as per the Action Plan. If report is not received from any of the UODs the officer in-charge, Control Room shall obtain the information and compile it and submit the same to CEO on 12 hourly basis i.e. twice a day.

PRESS MANAGEMENT

A cell headed by HEAD (SEC) shall be responsible for press management.

The Press Cell shall come into operation immediately in the office of HEAD (SEC) and it shall issue daily bulletin at 2.00 pm and 7.00 pm every day. It shall hire photographer/videographer as required and ensure that the photographs are taken to depict the situation as well as the work done by the port officials. The photography/video team will accompany CEO.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

APPENDIX - A

P 000 2 005

CASUALTY MANAGEMENT

The Casualty Emergency Room at Port Dispensary shall start functioning as soon as warning of the cyclone is received. EAD SEC will ensure that all doctor and medical staff are available during the period. The Casualty Emergency Rooms will function round the clock with posting of doctor and staff round the clock. Adequate number of chlorine pills should be distributed after cyclone to avoid epidemic from spreading. A report shall be submitted in the evening by EAD SEC every day to the CEO. EAD SEC will ensure that all staff members are on maximum alert during disaster for their own safety. Ambulances/vehicles with drivers to be kept standby awaiting further orders. We will also liaison with Control Room, Disaster Site/Spot.

Post disaster P 000s:

Tackling of Patients

1. Use of Ambulance will be purely on priority basis.
2. Line of treatment to be decided by attending doctors, such as indoor/outdoor/under observation, etc.
3. Cases will be attended depending upon the extent of injury/condition of case, i.e. very serious, serious, and stable.
4. Free of cost treatment is to be extended to all patients.
5. To ensure supply of adequate medicines and any other items.
6. Dead bodies to be shifted to Government Hospital for identification, disposal, and issue of death certificate, etc.
7. If needed be liaison with local medical practitioners, local hospitals, etc. as indicated earlier.
8. If need be, to arrange for outside ambulance.
9. Transfer of serious patients to Govt. hospitals is made.
10. To mobilise additional nursing/para medical staff to cope with additional work load.

PREVENTION OF EPIDEMICS:

1. Chlorination of drinking water at source.
2. Mass survey of residents on port colonies and adjoining areas.
3. To get chlorine tablets as required and arrange for distribution thereof.
4. To educate residents/public to promote hygienic condition in and around their dwelling place, use of boiled water.
5. To shift cases afflicted by contagious or infectious diseases to Govt. Hospital and bring such cases to the notice of State Authorities.
6. Antidotes of all the poisonous gases to be kept ready.
7. To provide on the spot medical aid at port premises.
8. Any further actions depending upon the conditions and restoration in the manner being decided by administration.
9. In life threatening condition of staff members – their evacuation.

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

APPENDIX - A

P 3 5

B SECURITY DEPARTMENT

HEAD SEC/ OS SEC shall remain in contact with the incharge of Control Room at Signal Station regarding the position of the cyclone.

He will make arrangements for announcements, with the coordination of police, through public address system mounted on vehicles. Security personnel will procure truck through HEAD SEC.

He shall ensure that all incoming traffic to the port is stopped except those, which are coming for rescue operations and essential services. He shall immediately erect temporary tents and post sufficient number of Port Security personnel in coordination with the Police, who shall identify which person has to be allowed. He shall also ensure that they do not cause any hindrance for those who are supposed to function as per the action plan.

C FINANCE DEPARTMENT

All ODs would make an assessment regarding the requirement of funds by them to meet the different exigencies which they may have to handle on account of the cyclone situation. The ODs would inform the HEAD F on telephone or in writing or through a messenger regarding their requirement of advances. The HEAD F, in turn, would examine the advances sought by the ODs and sanction the advances early without delay. The CEO would keep the Executive Chairman informed about the amount released by him and seek approval.

D IT SECTION

As soon as the cyclone warning signal No. 5 is hoisted, the HEAD IT shall monitor the weather through internet and give two hourly print out to CEO, Head O&M, DC, HEAD SEC, OS Tech, HEAD ESD. The following are the website codes, through which the required information regarding the position of the Cyclone can be ascertained.

- 1) www.imd.ernet.in
- 2) www.supertyphoon.com/indian.html
- 3) www.npmoc.navy.mil/products
- 4) www.solar.ifa.hawaii.edu/tropical/tropical.html
- 5) www.underground.com/tropical
- 6) www.maineforecast.net

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

APPENDIX - A

P 4 of 5

E MARINE OPERATIONS DEPARTMENT

As soon as warning of cyclone is received, following measures are proposed

- Setting up of Control Room at Signal Station.
- Pilots and other Supervisory staff of Marine Service provider shall reach their duty place even if they are on leave, to tackle emergency, if any.
- Evacuation of ships and securing all port crafts in shortest possible time.
- DC to ensure all operational staff including fire brigade staff, Pilots and ministerial personnel are available during emergency.
- Arrange for dewatering pump if required.

SECURING OF ALL CRAFTS

- DC/ DPC shall immediately arrange for securing all the port crafts at safer places so that there is no loss to the port and send a report to the Executive Chairman as early as possible after operation of this action plan. For parking of crafts in emergency, berth no.1 will be used.
- All Pilots to be available during emergency. DC/ DPC shall also ensure that all ships are moved out of the harbour at the earliest.
- In case of natural calamity, first start with rescue operations, restoration activities on war footing on the advice of CEO, Head O&M, DC/ DPC.

F OPERATIONS DEPARTMENT

After the warning of cyclone or any other natural calamity is issued at the port, Head OPS shall ensure that the loading/unloading operations at the port are stopped immediately, hatches closed, ships derricks properly secured and all labourers evacuated from the port area. He shall arrange for public announcement system to make announcements relating to the evacuation

during emergency. Head OPS shall also stop all loading and unloading operations immediately upon instructions from DC so as to enable the later to move the vessels out in time. The responsibility of evacuating the port shore workers and the private shore labourers rest with the Head OPS. Head OPS along with OS BO and EAD Sec shall ensure that the port is completely evacuated and there is no entry in the custom bonded area. EAD TC shall render necessary help to procure requisite no. of trucks for public announcement and evacuation. Head OPS shall inform all the stevedores and Cargo Handling Agents.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

APPENDIX - A
P 5 of 5

G ENGINEERING SERVICES DEPARTMENT

As soon as the message on anticipated cyclone/flood/natural calamity is received from concerned authorities, the same will be intimated to all the concerned under the Mechanical Engineering and Electrical Departments and will be instructed to be alert. All the staff members/officers should know that they shall come into action on their own as soon as the warning is issued without waiting for any further instructions.

SM Mech. shall ensure immediately that stackers/re-claimers/ ship loaders/mobile crane etc., are secured and properly locked and moved to safer stowage positions as per the procedure and report submitted to CEO and EAD O&M. OS Mech. to keep the staff at the electrical sub-station, CCR and to attend any emergency. OS Mech. to ensure all drive houses, electrical houses, mobile equipment, conveyors, etc. secured properly. Provide earthmoving equipment, cranes, forklifts, bulldozers, etc. as per the requirements. EAD ESD to ensure that his department maintains electrical supply.

H CIVIL MAINTENANCE DEPARTMENT

EAD ESD will ensure that water supply arrangements will be made to various sites of work/camps where the workers are shifted, etc. EAD ESD will be in-charge for supply of water to various destinations.

Civil Maintenance department will ensure that all road blockades are got cleared and the blockades caused in other port areas due to the falling of trees, walls, sheds, etc. got removed immediately. Further they shall ensure that the port areas are got cleared and wherever logging of water is found, the water is pumped out and disinfected. A report shall also be submitted to the CEO.

I VEHICLE POOL

As soon as this contingency plan comes into force, the vehicle pool stands formed. The pool shall be controlled by OS BO. All vehicles available with the departments especially the trucks and drivers will report to OS BO. He should ensure that all AGP vehicles and drivers are available with him. If more vehicles are required and to be hired from private contractors, he shall consult the same with EAD SEC and do so. All vehicles available with him should be parked in a safe location as decided by Dy. Conservator, from where it can be taken for immediate use as soon as the people move into action.

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEX-RE-I	REV : 13	PAGE : 1 of 2	DATE : 01/07/2025

LIST OF KEY TELEPHONE NOS. (GPL)

Sr. No	Name	Designation	Telephone Nos. - Visakhapatnam				
			Office		Residence	Fax	Mobile
			BSN	EPABX	BSN		
1	Amit Malik	CEO	2889999	40500		2703377	9099991057
2	Avtar Singh	COO	2701177	40501		2703377	7738191831
MARINE DEPARTMENT							
3	Capt. Rajesh Prakash	Dy Conservator	2889999	40591		2703377	7675992111
4	Duty Port Captain	Pilots	2889999	40593			9246639400
5	Shesava Narasimhan	Marine Manager	2889999	40596			8980016403
6	Port Control C-16/14		2889999	40605			9000234479
7	Fire Station		2889999	40604			
HR & ADMIN DEPARTMENT							
8	Anil Chilukuri	OD & Admin.	2889999	40527		2703377	8341777278
9	Sh.V.Sh.Raghunath	OS & IR	2889999	40532		2703377	7386698811
ENGG SERVICES DEPARTMENT							
10	Mavji Vaghamshi	SVP ESD	2889999	40516			9727784691
11	P. Shishore	OS Mech	2889999	40709			9989099799
12	CCR		2010880	40706	-	-	
CIVIL MAINTENANCE DEPARTMENT							
13	Sh.Srinivasa Rao	OS Civil	2889999	40765			9248091940
OPERATIONS DEPARTMENT							
15	Vijay Majji	OD	2889999	40657			9177945333
16	Sh.Viswanadh	OPS Berth	2889999	40632			8978180333
FINANCE & ACCOUNTS DEPARTMENT							
16	Avinash Patel	OD Finance		40503			7069083070
17	P.Srinivasa Rao	OS Finance	2889999	40572			8341119806

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX-RE-I	REV : 13	PAGE : 2 of 2	DATE : 01/07/2025

TECHNO COMMERCIAL DEPARTMENT							
18	Sachin Kumar Verma	OD Techno Commercial	2889999	40505			9501110769
19	Venkatpathy Raju	OS Stores	2889999	40750			9959762226
SECURITY DEPARTMENT							
20	B. Prishna	Head Security	2889999	40508		2703377	7227020722
21	B.Govind Varma	Pass Section Security	2889999	40781		2703377	9989387888
FIRE & SAFETY DEPARTMENT							
22	M.Parithi	Dy.Manager Fire&Safety	2889999	40604			8143569095
ENVIRONMENT DEPARTMENT							
23	N.Raju	Officer Environment	2889999	40692			8686086069
MEDICAL CENTRE							
24	Dr. Pranay	Medical Officer	2889999	40601			7013781538
IT DEPARTMENT							
25	M.Venkateswara Rao	OD IT	2889999	40555			9176868868
CONTAINER TERMINAL							
26	Capt.Anmol Agarwal	OD CT	2889999	40655			6358981380

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX-RE-II	REV : 13	PAGE : 1 of 1	DATE:01/07/2025

LIST OF IMPORTANT TELEPHONE NOS & SERVICES

		BSNL	
	FIRE	101	
1	AGPP Fire Station	2889999 Ext 40604	
2	Pedagantyada Fire Station	2517780	92475 86482
3	Indian Navy Fire Services	2571547	
4	Vilag Steel Fire Services , Vilag-31	2518401	
5	Divisional Fire Officer, Madhavadhara, Vilag-07	2561461	
6	Fire Officer, AP-Fire Station, Vilag-01	2563582	
7	Central Fire Station, Port Trust, Port Area, Vilag-01	2569411	
8	Headquarters Fire Services, Suryabagh, Vilag-20	2568905	
	AMBULANCE	108	
1	Adani Gangavaram Port	2889999	Ext.40600
2	R.O. Hospital, Chinagantyada	2517599	
	POLICE	100	
1	S.O, New Port Police Station, Pedagantyada, Vilag-44.	2707100, 2708100	94409 04309 94407 96034
2	Asst. Commissioner of Police, South Sub-Division, VSP City.	2513567 (O) 94407 96006	
3	Dy. Commissioner of Police (H&O)	2565194 (O) 2558850 (R)	94409 04348
4	Commissioner of Police, Police Barracks, Suryabagh, Vilag-20.	2562709 (O) 2562763 (O) 2525500 (R) 2569811 (R)	94406 27277
5	Marine Police Station, VMRDA Building, Vilag	2797272 2521802	
	OTHERS		
1	Main Receiving Sub-Station, MRSS Addl. Asst. Engineer, at GP	2549274	
2	Dust Suppression System, GP	2010598	
3	Under Ground Reservoir/Pump House, at GP Main Gate	2010597	
4	Manithi Pump House, Beleru Canal Pump House	2010596	

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEXURE-III	REV : 13	PAGE : 1 of 1	DATE: 01/07/2025

DISTRICT AUTHORITIES				
		EPABX	BSNL	VHF
1	Collector, Visakhapatnam		25632570 2526999R	
2	Special Officer (GP), R&R, Collector Office, Viag.		2525579	
3	COAST GUARD, Visakhapatnam		2547266, 2568875	
4	Mercantile Marine Dept., Surveyor-In-Charge, Port Area, Viag-35		2729431, 2502148	
5	Visakhapatnam Municipal Commissioner, GVMC, Viag-20		2568545	
6	EE, PWD, Viag-2		2717743	
7	Andhra Medical College, G, Maharaniipeta, Viag-2	2563413/ 2561157		

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX RE-IV	REV : 13	PAGE : 1 1	DATE : 01 07 2025

TELEPHONE NOS OF STATE GOVERNMENT OFFICIALS

Sr N	O	T 1 N s
		O
1.	Special Chief Secretary Infrastructure & Investment Dept.	0863 2442113
2.	Director of Ports, akina	0884-2363825
3.	Port Officer, akina	0884-2376129

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

ANNEX-RE-V	REV : 13	PAGE : 1 1	DATE : 01-07-2025

Riserty Isst N Ltd-RINL- EY PERSONNEL

Sr N	N	O T	R s T	M
1.	Commandant-CISF	2518257	2518223	
2.	AGM Materials	2518683		

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX-RE-VI	REV : 13	PAGE : 1 of 1	DATE : 01/07/2025

LIST OF MAJOR HOSPITALS

Sr No	Name of Local Hospital	Phone No	Type	No of Beds
1.	R. Hospital, Gajuwaka	2517599 2517081	Private	
2.	Dr. Sujatha Hospital, Gajuwaka	2742115	Private	
3.	King George Hospital, Viag-2	2564891 2542987	Govt.	
4.	Andhra Medical College, G, Visakhapatnam	2563413/ 2561157	Govt.	
5.	ESI Hospital, Opp. Scindia, Viag-5.	2577195	Govt.	
6.	Govt. Hospital for Chest & Communicable Diseases, Chinnawaltair, Viag-17	2552525	Govt.	
7.	Mental Hospital, Viag-3	2754918	Govt.	
8.	Victoria Hospital, Otharoad, Viag-1	2562637	Govt.	
9.	CARE Hospital, Daspalla Hills, Viag-3	2705343	Private	
10.	Seven Hills Hospital, Bagadam Junction, Viag-20	2533223	Private	
11.	Visakha Hospitals & Diagnostics Pvt. Ltd., Waltair Main Road, Viag-2	2714014	Private	
12.	Apollo Hospitals, Waltair Main Road, Viag-16	2712790	Private	
13.	Parus Hospitals, Waltair Main Road, Viag-2	2780780	Private	

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEXURE-VII	REV : 13	PAGE : 1 of 1	DATE : 01/07/2025

LIST OF LICENSED BLOOD BANKS & THEIR LOCATIONS

Type	Name of Blood Bank	Location	Telephone Number
Govt	Gov Blood Bank	Maharanipeta	2542987 2564891
Private	AS Raja Blood Bank	Ramnagar	2543436
	Rotary Blood Bank	Maharanipet, Village-2	2506678
	Seetarama Nursing Home Blood Bank		2706025

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX-RE-VIII	REV : 13	PAGE : 1 of 1	DATE : 01/07/2025

**LIST OF REHABILITATION CENTRES BEYOND 10 KMS RADIUS OF
EMERGENCY SITE**

1. Central School Navynagar, Malkapuram
2. Malkapuram High School & Jr. College.
3. Govt. High Sriharipuram.
4. St. Peter High School, Sriharipuram
5. St. Joseph College & School, Convent Junction

OTHER REHABILITATION CENTRES IN CASE OF NEED

1. Vikas College, Sheelanagar
2. Shree Ashoda Vidyalaya, Gajuwaka
3. Pedagantyada High School, Pedagantyada
4. Chaitanya College, Steel Plant
5. Little Angeles College & High School, Steel Plant

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEXURE-IX	REV : 13	PAGE : 1 of 2	DATE : 01/07/2025

LIST OF NEIGHBOURING ORGANISATION

Sr No	Neighbouring Industry/ Organisation	Neighbouring Leader	Telephone	Mobile
1.	Gangavaram Port	1. Port Control 2. Capt. Rajesh Prakash Dy. Conservator 3. Fire Station 4. Fire Officer	0891-2889999 Ext 40605 0891-2889999 Ext 40591 VHF Ch. 14 0891-2889999 Ext 40604 VHF Ch. 14 0891-2889999 Ext 40604	9000234479 7675992111 7675900100 7675900100
2.	Indian Coast Guard	1. Inspector General ----- District Commander 2. Comdt. ----- 3. Main Signal Office	2958900 2952518 2568879	
3.	AP Fire & Emergency Services	1. Dist. Fire Officer- 2. Station Fire Officer, Pedagantyada Fire Station	2568905 2517780/ 2515233	949991050 9963728664
4.	Visakhapatnam Port Trust	1. Dy. Conservator 2. Harbor Master 3. Signal Station	2565042 2562039 2562135	

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEXURE-IX	REV : 13	PAGE : 2 of 2	DATE : 01/07/2025

5.	Indian Navy	1. CMDE 2. Chief Staff Officer 3. Fire Officer	2816624 2811641 2578000- Etn6222	
6.	Indian Oil Corporation	1. Location In charge 2. Divisional institutional Business Head 3. Manager	0891-2708009 0891-2539575 0891-2854802	9490958026 9434738099 9491399859
7.	Vishag Steel Ltd.	1. Commandant 2. CISF Control Room	2518257-2250 2518515	9866248290
8.	Indian Petroleum Corpn. Ltd.	1. Chief Manager Fire & Safety 2. Sr. Manager Fire	2740183 2577592	9985001853 9849281805

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEX-RE-X	REV : 13	PAGE : 1 of 6	DATE : 01/07/2025

LIST OF SHIPPING AGENTS:

A V Bhanoji Row, Garuda Pattabhiramayya & Co.	D.No.71-52-15, Harbour Approach Road, Next to NMDC Building, Near Port Main Gate, Visakhapatnam-530001	9848196587	ops@avbgpr.com accts@avbgpr.com fp@avbgpr.com
ACT Infraport Ltd.	402/A, Door No. 10-1-9/1, Vinayagar Heights, Sampath Vinayagar Temple Road, Visakhapatnam - 530003	8886299771 9440431434	vi@ag.actship.com info@actship.com
Admiral Shipping Ltd.	Plot no. 1, Door No. 25-8-105, Prashant Paradise, 1st Floor, SRST Ward, Main Road, Visakhapatnam - 530001	9848196979 9177596979	vi@ag.admiralshpg.com admiral@admiralshpg.com
An-line Shipping Private Limited	D.No.25-12-40, 1st Floor, PVR Chambers, Godeyyavari Street, Near 1 town Police Station, Visakhapatnam - 530001	9000123479 9347582117	vi@ag.anline.in agency@anline.in
ARVI NAVIGATION PRIVATE LIMITED	50-95-2/6, Ground floor, N.E.Layout, Seethammadhara, Visakhapatnam - 530013	9004770769	operations.vi@ag.arvi- shipping.com
Asthraa Shipping and Logistics	20-70-42, Asipapa Street, Near Mrs. A.V.N.College, Visakhapatnam - 530001	7680054333 7416443005	asthraashipping@gmail.com ops@asthraashipping.com agency@asthraashipping.com
Atlantic Global Shipping Pvt. Ltd.	Flat No. 1, D.No.25-8-105, Prasanth Paradise, First Floor, SRST Ward, Main Road, Visakhapatnam - 1	9848196979 9177596979	ags@atlanticglobalshipping.com vi@ag.atlanticglobalshipping.com
Ben Line Agencies India Pvt. Ltd.	.No.11-6-33, First Floor, Rock Dale Area, Maharanipeta, Visakhapatnam - 530 00	9848531393 9030022113	vsk.mgr@benlineagencies.in v.ramprasad@benline.com vsk.ops@benlineagencies.in india.general@benlineagencies.in

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEX-RE-X	REV : 13	PAGE : 2 of 6	DATE : 01/07/2025

Bothra Shipping Services Private Limited	28-2-47, Daspalla Centre, Suryabagh, Visakhapatnam-530020	9963988100 8978804794 9848633542	agency@bothragroup.com ops@bothragroup.com
Chowgule Brothers Pvt. Ltd.	F-6, Marine Towers, 25-9-14/11, Rajavari Street, Visakhapatnam-530001	9848160570 7420904787	vi@ag.cb@chowgule.co.in
Cross Trade Shipping	Nirmal Bhavan, 2nd Floor, D.No.76-13-79, current Office Road, Ujji nagar, Bhavani puram, Vijayawada, Ap-520012	9428506392 9909226895	operations@crosstradeshshipping.in ops.andhra@crosstradeshshipping.in
Deblines Private Limited	15-14-4/2, Ground Floor, Buddavarapu Gardens, Krishna Nagar, Maharani-peta, Visakhapatnam-530002	9849110579 9849618573	vi@ag.operations@deblines.com info@deblines.com debgroupvi@ag@gmail.com
Esdi Maritime Private Limited	Plot No. B-104, 1st Floor, B-Block, Marine Enclave, Old Post Office, Visakhapatnam - 530 001	9347060203 9701365906	vi@ag@esdimaritime.in agency@esdimaritime.in
Eswar Shipping Services	FF-1, Sri Ambica Nivas, 21-20-2, SunnapuVeedhi, Visakhapatnam - 1	9246622205 9246622701	adm@eshwarshipping.com
Everett India Private Limited	F9, Marine Towers - 1, 25-9-14/12, Rajavari street, Visakhapatnam - 1	9848194994	everett-vi@ag@everett.co.in
GAC Shipping India Pvt. Ltd.	Silver Willow Bldg, 3rd Floor, D.No.30-15-58, Dabagardens, Visakhapatnam - 530020	98481 84923 7095883388	venkata.giridhar@gac.com shipping.vi@ag@gac.com
Gagan Shipping Services	D.No.39-9-9, Tanneti Nagar, Murali Nagar, Visakhapatnam - 530007	9866105677 9347953664	gagan@gaganship.com crew@gaganship.com
Global Shipping Services	Flat NO.-122, R.Duple apartments, Besides Visakha Museum, MCA, Beach Road, Visakhapatnam - 530017	7995361180 7337337222	ops@globalshippingservices.co.in info@globalshippingservices.co.in

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEX RE-X	REV : 13	PAGE : 3 6	DATE : 01 07 2025

Glory Faith Shipping Agencies	25-12-36, Roychat Building, Godeyvari Street, Visakhapatnam 530001	9848522512 9985086461	ops@gloryfaithshipping.com info@gloryfaithshipping.com
GPR Maritime Agencies	.No.Flat No.1/4, Daspalla Towers, Naoroji Road, Visahapatnam - 530 002	9849116587 9866073404	agency@gprnco.com
Imperial Shipping Co.	9-30-3, 2nd Floor, Balaji Nagar, Siripuram , Visakhapatnam - 530 003	984855652 9100111435	kak@imperial.co.in isckkd@gmail.com
Infinity Shipping Private Limited	Door No. 11-9-1/1, First Floor, Opp. Mutyalamma Temple, Daspalla Mills, Visakhapatnam - 530003	8008928666 9704808547	infinityvi@ag@gmail.com vi@ag@infinityshipping.i accounts@infinityshipping.in
Integral Trading & Logistics	31-33-115/1/2, Darshan Paradise, Opp. Mamatha Press, Assam Gardens, Nellammavepachettu, Visakhapatnam - 20	9246960558 9295014222	vi@ag@integraltrading.net
Interocean Shipping India Pvt. Ltd.	IV/1,sunrise apartments, Beach road,Pandurangapuram, Visakhapatnam 530003	9989061159	gangavaram@interocean.in
ISS Shipping India Private Limited	First Floor, D.No.25-12-14, Rajavari Street, Godeyvari Ward, Visakhapatnam- 530001	9030193050 9491801592	youriss.vi@ag@iss-shipping.com
Jain Shipping & Logistics	7-22-10/10, Plot No.18, Flt No.301, Jayadeep Apartments, Tirilampudi Layout, Beach Road, Visakhapatnam - 530 017	9963944100 7095101125	niraj@jainshipping.com
James Mackintosh & Co. Private Ltd.	Door No. 25-12-44, Mehdi Building, 1st Floor, Block No. 109, Godavari Street, Visakhapatnam - 530001	7673962777 9703679992	ops.vi@ag@jamesmackintosh.com brao@jamesmackintosh.com
Janani Shipping & Marine Services	14-37-24/28, 3rd Floor, Flat No. 301-B, Brindavan Apartments, Krishna Nagar, Maharanipecta, Visakhapatnam - 530002	9348120001 9912110727	bhuvan@jananishipping.com agency@jananishipping.com jsmsvsp@gmail.com

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX-RE-X	REV : 13	PAGE : 4 of 6	DATE : 01/07/2025

Jigsan Shipping Private Limited	IG-13, Gourav Vihar, Madhuban, Paradip, 754142, Odisha, India.	9437072155 6281943795	operations@jigsan.com jigsanshipping@gmail.com
JM Bai & Co.	Indu Mansion, 25-12-35, Godevari Street, Near SBI 1 Town Branch, Visakhapatnam 530001	8008401007 8008401006	nagarajub@jmbari.com jmboperations-vi@jmbari.com jmbaccounts-vi@jmbari.com
Jyothi Shipping Agencies	11-9-16/B 1, Flat No. 100, Sri Vishnu Apartments, Dasapalla Mills, Visakhapatnam - 530003	9640744444 9460722222	ops@jyothigroup.com finance@jyothigroup.com
K. Ramabrahmam and Sons Pvt. Ltd.	Platinum House, 25-12-6, Godeyvari Street, Visakhapatnam - 530001	9848189003 9848189008 9248023011	agency@krsons.in vi@krsons.com info@krsons.com
Lotus Marine Services pvt. Ltd.	D.No.15-1-117/4, Flat No.4, First Floor, Sindhuvilla Apartments, Nowroji Road, Maharani Peta, Visakhapatnam - 530002	9866388459 9346155523	lotusmarinevi@ymail.com rajulotusvi@yaho.co.in
Merchant Shipping Services Pvt. Ltd.	D.No.10-50-58/1, R.Estates, 2nd floor, Wlatair Main Road, Ramnagar, Opp Lions Club, Viag - 2	9393393943 9705289361	p.narayana@merchantspg.com mersvi@merchantspg.com
Monship Agency Services	Marine Towers, Block No.2, 25-9-14/8, Godavari Ward, Visakhapatnam -1	9848198540 9848307102	operations@monship.in
Navship Marine Services Pvt. Ltd.	31-1-29/2, NSN Towers, Flat No.104, Vivekananda Colony, Allipuram, Visakhapatnam-530004	80080 02119 97044 99399	vi@navship.co.in, ops@navship.co.in navship.vi@gmail.com
OS Shipping Agencies India Private Limited	D.No. 50-44-8/1/2, P&T Colony, Gandhi Nagar, Seethammadhara, Visakhapatnam-530013	9840185158 7997483233	ops.tramp@oslindia.com
Parekh Marine Agencies Pvt. Ltd.	2nd Floor, Fountain Plaza, 30-15-190, Dabagardens, Visakhapatnam - 530020	9010227754 9248171292	agency.vi@pmapl.com

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEX RE-X	REV : 13	PAGE : 5 6	DATE : 01 07 2025

Pennon Shipping Pvt. Ltd.	D.No.23-35-2/15, Flat No. 403, 4th Floor, Marine Enclave II, Main Road, Visakhapatnam - 530 001	9840199255 9949474732 9246621237	viopns@pennonshipping.com
Poseidon Logistics Pvt. Ltd.	D.No.10-1-47, 3rd Floor, Flat No.305P, Dutt Island, Siripuram, Visakhapatnam - 530 003	8008511300	poseidonvsp@hotmail.com admin@poseidonindia.co.in
Pravv Shipping services	21-2-34, Chengalarao peta, Panja Junction, Visakhapatnam - 530001	9393023225 70361 23266	agency.pravvshipping@gmail.com general@pravvship.com
Puy Vast Maritime India PVT. Ltd.	203-B, 2nd Floor, Duttisland Complex, Siripuram, Visakhapatnam -530003	9246648623 9246648624	puyvastv@gpuyvast.co.in
Rich Mark Shipping & Logistics Pvt. Ltd.	11-9-39, C-2, Indira Apartment, Dasapalla Mills, Visakhapatnam - 530 002.	9866301444 8125184515	vizag@richmark.co.in admin@richmark.co.in
SAI SAMRAT SHIPPING AND LOGISTICS	50-63-3, 2nd Floor, Rajendra Nagar, Seethammampeta, Visakhapatnam -530016	9849114236 9014312020	operations@saisamrat.co
SAVUS SHIPPING SERVICES PRIVATE LIMITED	Regus i-tech City, Level – 2, Oval Building, ilabs Centre, Madhapur, Hyderabad – 500 081	7995088117 7032888159	agencyvifag@salvusshipping.in
Samsara Shipping Pvt. Ltd.	D.No.10-50-58/1, R.Estates, 2nd floor, Wlatair Main Road, Ramnagar, Vizag - 530003	9393393943 9705289361	venkata.satyanarayana@samsarashipping.com samsvifag@samsarashipping.com
Samudra Marine Services Pvt. Ltd.	D.No.25-12-60, GF2-Room No.2, Ground Floor, Attili Enclave, Visakhapatnam - 530001	7093246222 9246645203	vizag@samudragroup.com agency@samudragroup.com. accounts@samudragroup.com
Sarat Chatterjee & Co. Visakhapatnam Pvt. Ltd.	28-2-47, 1st Floor, Daspalla Centre, Suryabagh, Visakhapatnam - 530020	9963988100 8978804794 9848633542	agency@bothragroup.com ops@bothragroup.com

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

ANNEX-RE-X	REV : 13	PAGE : 6 of 6	DATE : 01/07/2025

Seaport Shipping Pvt. Ltd.	1st Floor of "Archana Building", 11-2-15/1, Daspalla Mills, Visakhapatnam - 530 003	98665 83677 98495 39977	viag@seapol.com
Seatrans Marine Pvt. Ltd.	Prasanth Paradise, Flat No. G 2, Beside Shyam Prayer Hall, Visakhapatnam - 1	9346738883	seatrans.viag@seatrans.co.in ravi@seatrans.co.in
Seaways Shipping and Logistics Ltd.	10-1-31, 3rd Floor, Signature Towers, CBM compound, Visakhapatnam-530003	9769029217 7797723900 9951531052	info@seawaysindia.com viag@seawaysindia.com
Seaworld Shipping and Logistics Private Limited	NC BLDG., 8TH FLOOR, BANDRA-URVA COMPLEX, BANDRA EAST-MUMBAI-400051	9491992792 8985018162	seaworldops@seaworldship.com viagops@seaworldship.com
Spartrans Marine Services Pvt. Ltd.	D.No.9-25-3/4, 6th Floor, Pent House, Saisree Vihar, Near Timpany School, CBM Compound, Visakhapatnam - 530003	7893020001 9908834266 8919500877	spartansmarine@gmail.com operations@spartans.co.in
Sri Srinivasa Marine Agencies	D.No.25-12-14, Ground Floor, Rajavari Street, Godeyvari Ward, Visakhapatnam -1	0884 - 2355653	govind12987@gmail.com ssekkd@gmail.com ssmaviag@gmail.com
Swan shipping Services	D.No.50-63-2/B1, Rajendra Nagar, Seethammampeta, Visakhapatnam - 16	8008401020 9849123377	swanshipviag@gmail.com
TM International Logistics Limited	Vasthav Executive Centre, D.No.47-10-1/8, 3rd Floor, 2nd Lane, Dwarakanagar, Visakhapatnam-530 016	0891 2555491	agencyvi@tmilltd@gmail.com
Walter Cuminns Shipping Services	Office No.03B, 3rd Floor, Isnar Plaza, Dwarakanagar, Visakhapatnam-530016	9963405665	opsviag@waltercuminns.com
Wilhelmsen Ships Service	Flat No.102, 1st floor, Krishna residency, D.No.11-2-18, Daspalla Mills Visakhapatnam - 03.	0891 2509526	wss.viag@wilhelmsen.com Rohit.Bojja@wilhelmsen.com

ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN

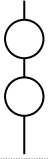
ANNEX RE-XI	REV : 13	PAGE : 1 1	DATE : 01 07 2025

PORT POSITION	OFFICE TEL		RESIDENCE TEL	MOBILE
CRISIS MGMT GROUP	BSNL	EPAB X	BSNL	
Chief Executive officer	2889999	40500		8980015105
Head O&M	2889999	40501		7738191831
Head Operations	2889999	40657		9177945333
Head HR & Admin	2889999	40527		8341777278
Deputy Conservator	2889999	40591		7675992111
Head ESD	2889999	40516		9727784691
Head Security	2889999	40508		7227020722
Head Safety	2889999	40604		8826390533
ACTION GROUP	FORWARD CONTROL			
Duty Port Captain	2889999	40593		9246639400
Tugs Maintenance Manager	2889999	40596		8980016403
Head F&S	2889999	40500		9099991057
Head BO	2889999	40632		8978180333
Head Mech.	2889999	40709		9989099799
Head Civil	2889999	40765		9248091940
Head TC	2889999	40505		9501110769
Head IT	2889999	40555		9176868868
Head Security	2889999	40781		9989387888
Head Fire & Safety	2889999	40604		8826390533

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX-RE-XII	REV : 13	PAGE : 1 002	DATE : 01-07-2025

CHART OF WEATHER WARNINGS

Signal No.	Symbol Day	Symbol Night	Type of Warning	Description
I			Coastal Fog	Thick Fog in coastal waters within 12 miles of the shore. Visibility less than 1 mile.
II			Sea Fog	Sea Fog in coastal waters.
III			Coastal Fog	Partial Fog in coastal waters.
IV			Sea Fog	Thick Fog in coastal waters within 12 miles of the shore. Visibility less than 1 mile. Fog in the open sea.
V			Dense Fog	Thick Fog in coastal waters within 12 miles of the shore. Visibility less than 1 mile. Fog in the open sea. <u>Warning</u> in the Port.
VI			Dense Fog	Thick Fog in coastal waters within 12 miles of the shore. Visibility less than 1 mile. Fog in the open sea. <u>Warning</u> in the Port.
VII			Dense Fog	Thick Fog in coastal waters within 12 miles of the shore. Visibility less than 1 mile. Fog in the open sea. <u>Warning</u> in the Port.

ADANI GANGAVARAM PORT LIMITED CRISIS MANAGEMENT PLAN

ANNEX RE-XII	REV : 13	PAGE : 2 2	DATE : 01 07 2025

[illegible]R d



	□		□ □ □ □ □ □ □		□ □ □ □ □ □ □

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX RE-XIII	REV : 13	PAGE : 1 2	DATE : 01 07 2025

LIST OF ABBREVIATIONS

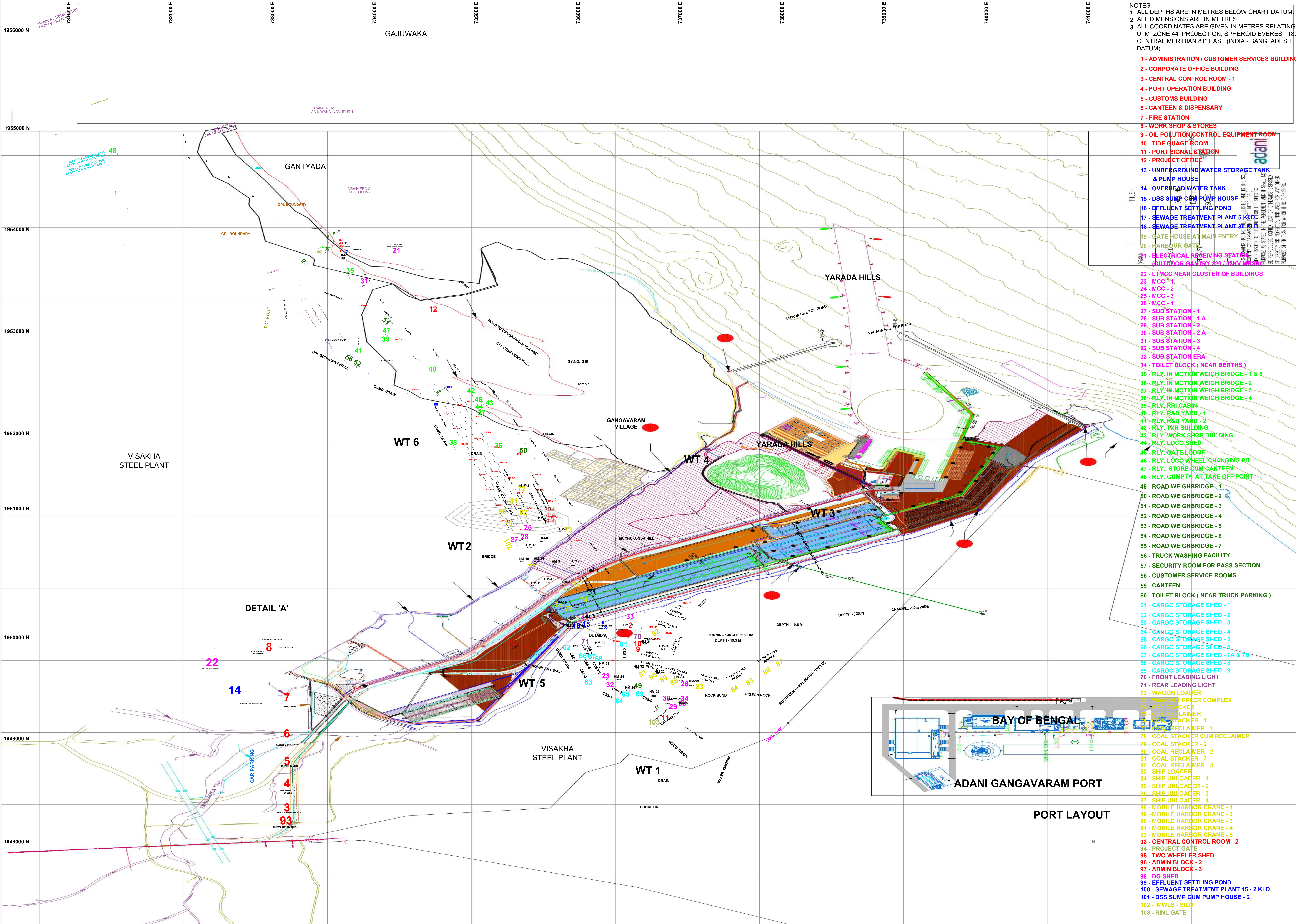
ADM	Administration
AIR	All India Radio
ASST	Assistant
BIS	Bureau of Indian Standards
BO	Berth Operations
BSN	Bharat Sanchar Nigam Limited
CCP	Central Control Panel
CCR	Central Control Room
CEO	Chief Executive Officer
O&M	Operations & Maintenance
DC	Deputy Conservator
DGM	Deputy General Manager
DPC	Duty Port Captain
ENV	Environment Department
ESD	Engineering services Department
F& S	Fire & Safety Department
F/Fin	Finance Department
FSO	Fire Safety officer
GM	General Manager
IPC	Indian Petroleum Corporation
OD/Head	Head of the Department
OS	Head of the section
Q	Headquarter
SP	Indian Shipyard Limited
IMC	Indian Molasses Company
IMD	Indian Meteorological Department
IOC	Indian Oil Corporation
IRS	Indian Register of Shipping
ISI	Indian Standards Institution
ISPS	International Ship and Port Facility Security
IT	Information Technology department
RS	Lloyds Register of Shipping
MD	Managing Director
MGMT.	Management
MM	Materials Manager
MMD	Mercantile Marine Department
MO	Medical Officer
MO&P	Mechanical Ore Handling Plant
NIO	National Institute of Oceanography

**ADANI GANGAVARAM PORT LIMITED
CRISIS MANAGEMENT PLAN**

ANNEX RE-XIII	REV : 13	PAGE : 2 2	DATE : 01 07 2025

LIST OF ABBREVIATIONS

OPS.	Operations
P & I	Protecting & Indemnity
P & T	Post & Telegraph
PA	Personal Assistant
PFSO	Port Facility Security
PFSO	Port Facility and Security Officer
PFSP	Port Facility and Security Plan
PI	Police Inspector
PO	Petroleum Oil Lubricant
PRO	Public Relations Officer
PS	Personal Secretary
PWD	Public Works Department
R.T.O.	Radio Technician Operator
S/S	Sub Station
SEC	Security Department
SIC	Site Incident Controller
S	Ship loader
SU	Ship Unloader
SSID	Shanti Sagar International Dredging Limited
TC	Techno Commercial



NOTES:
1 ALL DEPTHS ARE IN METRES BELOW CHART DATUM
2 ALL DIMENSIONS ARE IN METRES.
3 ALL COORDINATES ARE GIVEN IN METRES RELATING TO UTM ZONE 44 PROJECTION, SPHEROID EVEREST 1830, CENTRAL MERIDIAN 81° EAST (INDIA - BANGLADESH DATUM).

- 1 - ADMINISTRATION / CUSTOMER SERVICES BUILDING
- 2 - CORPORATE OFFICE BUILDING
- 3 - CENTRAL CONTROL ROOM - 1
- 4 - PORT OPERATION BUILDING
- 5 - CUSTOMS BUILDING
- 6 - CANTEEN & DISPENSARY
- 7 - FIRE STATION
- 8 - WORK SHOP & STORES
- 9 - OIL POLLUTION CONTROL EQUIPMENT ROOM
- 10 - TIDE GAUGE ROOM
- 11 - PORT SIGNAL STATION
- 12 - PROJECT OFFICE
- 13 - UNDERGROUND WATER STORAGE TANK & PUMP HOUSE
- 14 - OVERHEAD WATER TANK
- 15 - DSS SUMP CUM PUMP HOUSE
- 16 - EFFLUENT SETTLING POND
- 17 - SEWAGE TREATMENT PLANT 5 X 10
- 18 - SEWAGE TREATMENT PLANT 30 X 10
- 19 - GATE HOUSE AT MAIN ENTRY
- 20 - HARDEN GATE
- 21 - ELECTRICAL RECEIVING STATION (OUTDOOR GALLERY 220 / 33KV MISC)
- 22 - LTMCC NEAR CLUSTER OF BUILDINGS
- 23 - MCC - 1
- 24 - MCC - 2
- 25 - MCC - 3
- 26 - MCC - 4
- 27 - SUB STATION - 1
- 28 - SUB STATION - 1 A
- 29 - SUB STATION - 2
- 30 - SUB STATION - 2 A
- 31 - SUB STATION - 3
- 32 - SUB STATION - 4
- 33 - SUB STATION ERA
- 34 - TOILET BLOCK (NEAR BERTHS)
- 35 - RLY. IN MOTION WEIGH BRIDGE - 1 & 5
- 36 - RLY. IN MOTION WEIGH BRIDGE - 2
- 37 - RLY. IN MOTION WEIGH BRIDGE - 3
- 38 - RLY. IN MOTION WEIGH BRIDGE - 4
- 39 - RLY. RRI CABIN
- 40 - RLY. R&D YARD - 1
- 41 - RLY. R&D YARD - 2
- 42 - RLY. PKR BUILDING
- 43 - RLY. WORK SHOP BUILDING
- 44 - RLY. LOCO SHED
- 45 - RLY. GATE LODGE
- 46 - RLY. LOCO WHEEL CHANGING PIT
- 47 - RLY. STORE CUM CANTEEN
- 48 - RLY. GUMPTY AT TAKE OFF POINT
- 49 - ROAD WEIGHBRIDGE - 1
- 50 - ROAD WEIGHBRIDGE - 2
- 51 - ROAD WEIGHBRIDGE - 3
- 52 - ROAD WEIGHBRIDGE - 4
- 53 - ROAD WEIGHBRIDGE - 5
- 54 - ROAD WEIGHBRIDGE - 6
- 55 - ROAD WEIGHBRIDGE - 7
- 56 - TRUCK WASHING FACILITY
- 57 - SECURITY ROOM FOR PASS SECTION
- 58 - CUSTOMER SERVICE ROOMS
- 59 - CANTEEN
- 60 - TOILET BLOCK (NEAR TRUCK PARKING)
- 61 - CARGO STORAGE SHED - 1
- 62 - CARGO STORAGE SHED - 2
- 63 - CARGO STORAGE SHED - 3
- 64 - CARGO STORAGE SHED - 4
- 65 - CARGO STORAGE SHED - 5
- 66 - CARGO STORAGE SHED - 6
- 67 - CARGO STORAGE SHED - 7A & 7B
- 68 - CARGO STORAGE SHED - 8
- 69 - CARGO STORAGE SHED - 9
- 70 - FRONT LEADING LIGHT
- 71 - REAR LEADING LIGHT
- 72 - WAGON LOADER
- 73 - WAGON TIPPLER COMPLEX
- 74 - ORE STACKER
- 75 - ORE RECLAIMER
- 76 - COAL STACKER - 1
- 77 - COAL RECLAIMER - 1
- 78 - COAL STACKER CUM RECLAIMER
- 79 - COAL STACKER - 2
- 80 - COAL RECLAIMER - 2
- 81 - COAL STACKER - 3
- 82 - COAL RECLAIMER - 3
- 83 - SHIP LOADER
- 84 - SHIP UNLOADER - 1
- 85 - SHIP UNLOADER - 2
- 86 - SHIP UNLOADER - 3
- 87 - SHIP UNLOADER - 4
- 88 - MOBILE HARBOR CRANE - 1
- 89 - MOBILE HARBOR CRANE - 2
- 90 - MOBILE HARBOR CRANE - 3
- 91 - MOBILE HARBOR CRANE - 4
- 92 - MOBILE HARBOR CRANE - 5
- 93 - CENTRAL CONTROL ROOM - 2
- 94 - PROJECT GATE
- 95 - TWO WHEELER SHED
- 96 - ADMIN BLOCK - 2
- 97 - ADMIN BLOCK - 3
- 98 - DG SHED
- 99 - EFFLUENT SETTLING POND
- 100 - SEWAGE TREATMENT PLANT 15 - 2 KLD
- 101 - DSS SUMP CUM PUMP HOUSE - 2
- 102 - IMWLS - SILO
- 103 - RINL GATE

ANNEXURE-3

**ENVIRONMENT MONITORING
MEASURES ADOPTED BY AGPL ARE
SUMMARISED**

1. The environment monitoring measures adopted by AGPL are summarised:

a. Mechanical Dust Suppression System (MDSS)

Mechanical Dust Suppression System (MDSS) is mounted on each of the mobile hoppers. Plain water fog systems are provided at receipt points. A dry fog system is installed at the discharge point. The system consists of one water tank mounted on a hopper, two (1 working + 1 standby) pumps for each mobile hopper are provided.



Dust control is achieved by blending dust particles with finely atomized water droplets. The collision between the water droplets and dust particles plays an important role in the process of blending and heavier mass thus formed settles down to the source.

Plain water dust suppression has been considered for the top of the Mobile hopper & Truck receipt area discharge chute. The system has been designed to control dust nuisance of the working environment during un-loading of coal from Grab & at the peripheral location of discharge chute of belt feeder towards wagon or rake,

b. PLC based Mechanical Dust Control System:

AGPL provided PLC based Mechanical Dust Suppression System to control the fugitive emission from the dry bulk cargo storage areas i.e., coal and iron ore stockyards and handling areas.

The total area covered with the water sprinkler system of the facility is classified into seven sections or segments. Two types of sprinklers are provided in the water sprinkling

system. Water is sprayed through 176 no. of cannons. The cannons are operated in a cycle for the period of approximately 10 to 15 minutes per shift.



All the 8 sections shall be operated sequentially. The operation of MDSS will be 6 times per day during dry weather conditions and twice per day in the winter season.

There are two types of sprinklers/cannons. Type 1 sprinklers are 9.5mm/h and Type 2 sprinklers are 6mm/h respectively. The Type 1 sprinkler line will be operated for 10 minutes and the Type 2 sprinkler line will be operated for 15 minutes. The sprinklers are mounted on sprinkler posts of 6 meters height. It enables uniform water sprinkling on stockpiles height of approximately 13 meters.

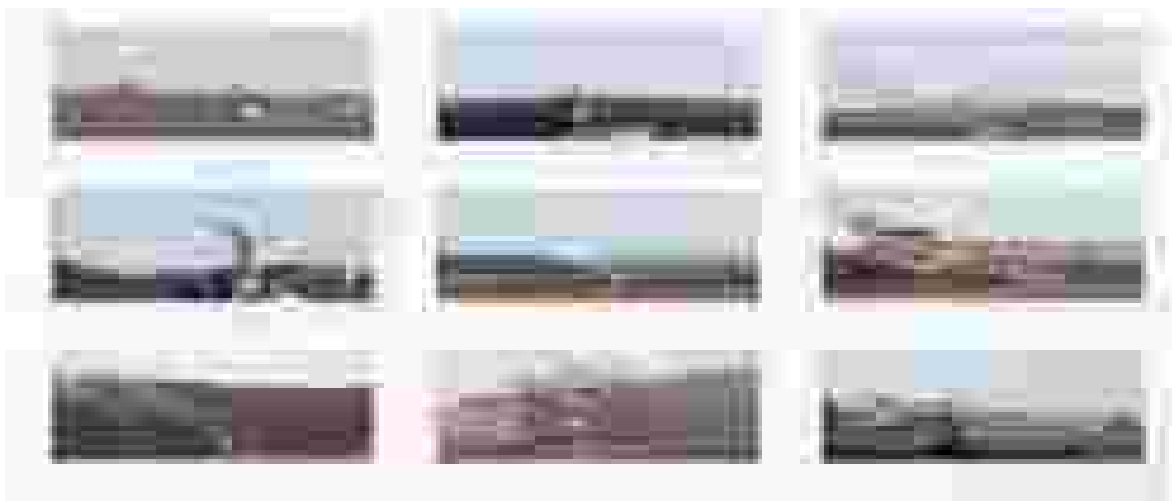
AGPL provided 176 numbers of sprinklers at stack yards. The throw distance is 50 meters at a working pressure of 6.0 kg/cm². The sprinklers are of the swiveling type.

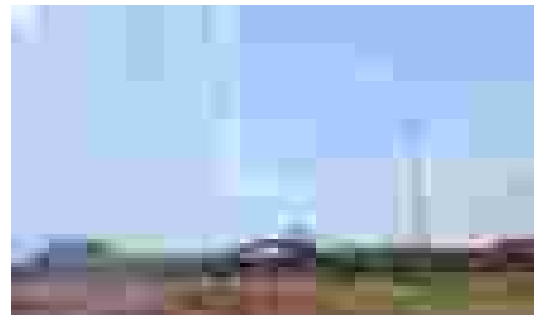
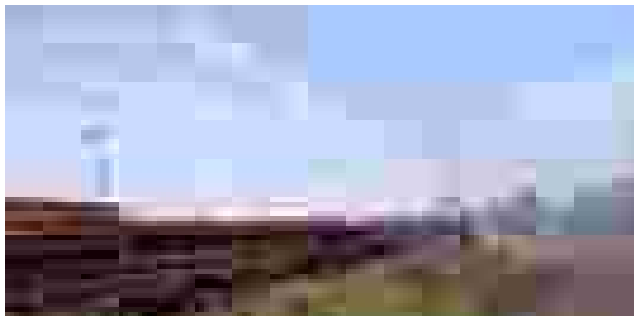
Water will be sprayed over the stockpile through 1800 swiveling type (Part or half Circle) sprinklers mounted on pipe taping raised to a height of 2 to 2.5 meters above ground level with one solenoid valve & one butterfly valve. These are on both sides of the stockpile to effectively cover the entire stockpile area and form a blanket of mist and the mist captures the dust emissions that become heavier and settle down. The formed mist would not allow any dust to fly along with wind. The mist formation facilitates maintaining required moisture levels in the cargos and lasts for longer period.

- The water cannons cover a radius of approx. 50 meters & sprinkles waters up to 15 meters' height and rotate in 360° directions. The distance between two sprinklers is 100mts to cover total cargo stack area.
- Two dedicated Pump houses for DSS system with redundant circuit to meet 24X7 Dust control operations. Storage water reservoir level will be monitored online with PLC and

sensor systems. All DSS control systems are being monitored through SCADA from Central control room.

PLC based MDSS in the Yards





c. Dozing the Cargo spillages:

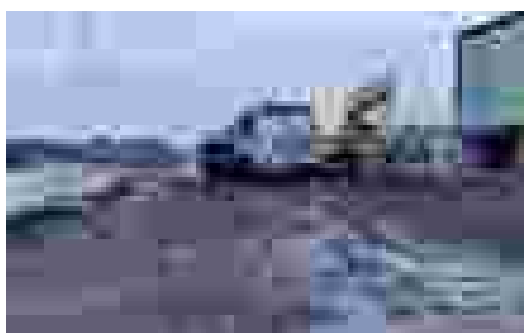
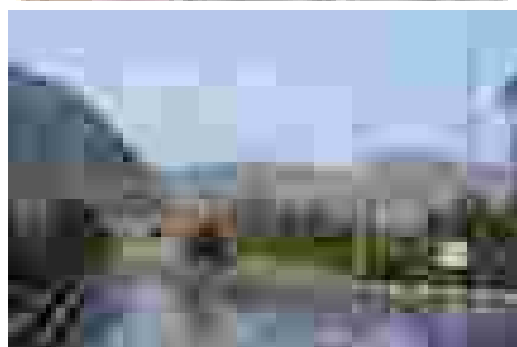
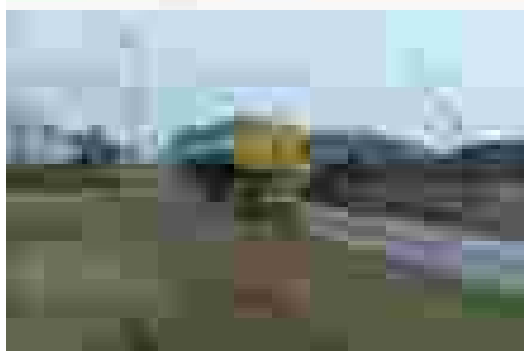
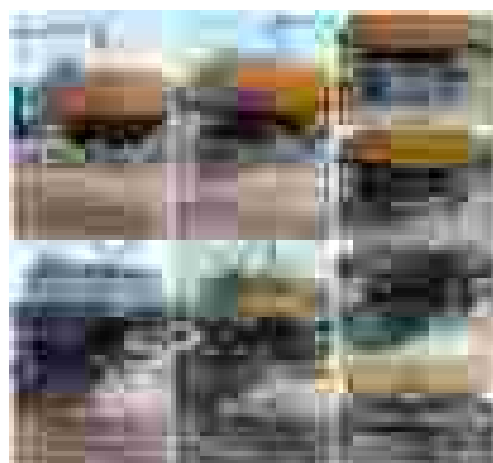
AGPL has been lifting the cargo spillages if any, during the transit within the Port.



d. Mobile Dust Suppression:

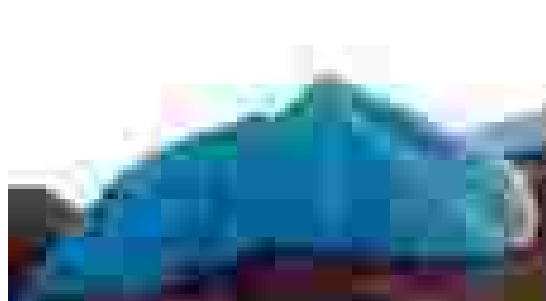
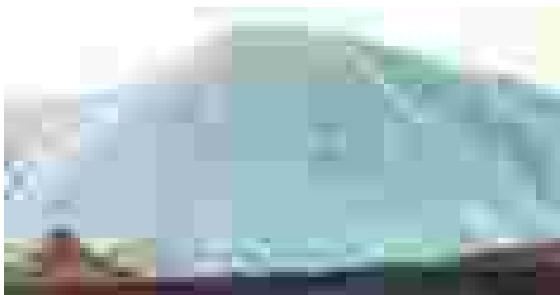
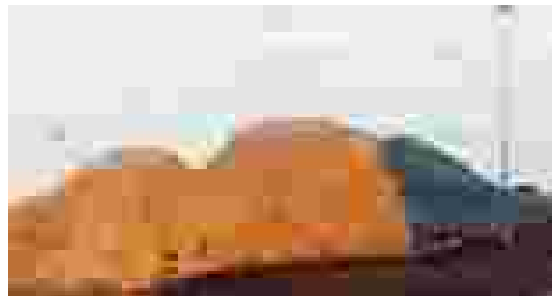
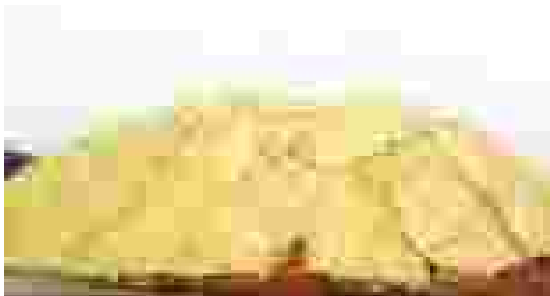
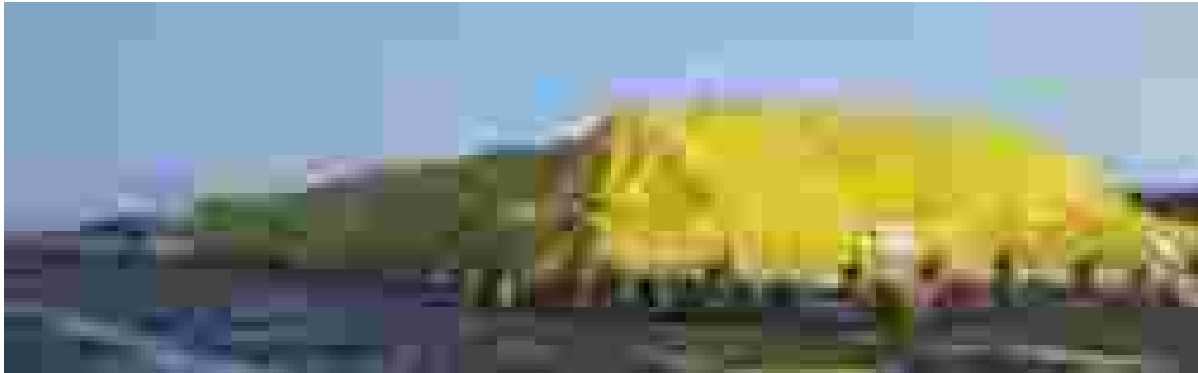
Deployed 20 Mobile DSS cannon mounted tankers for dust suppression at berth area, back up areas, at all transfer points & roads, for which AGPL is operating water pump houses at 8 Locations for water distribution throughout the Port through DSS Tankers.

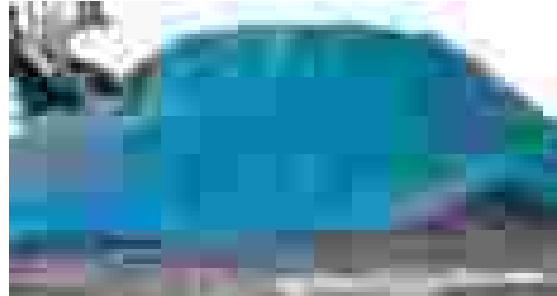
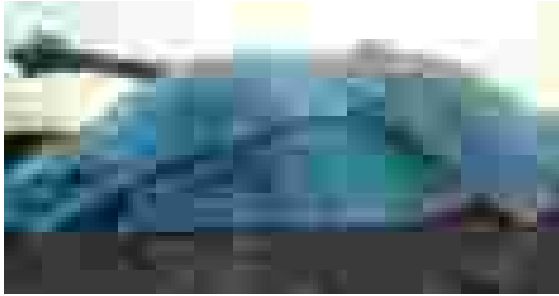
Dust suppression through Tankers



e. Maintaining tarpaulin coverage on cargo heaps.

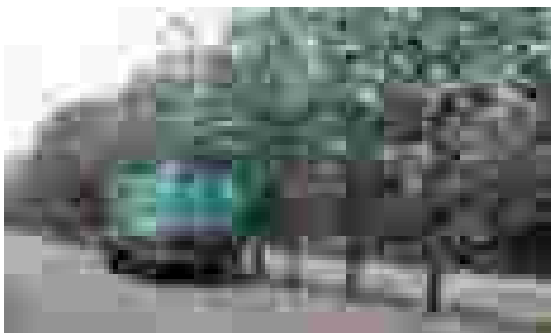
AGPL has been maintaining the tarpaulin covering on the cargos to the extent possible to avoid fugitive emissions.





f. Deployment of Road Sweeping Machines

Laid BT roads internally and 5 No. of sweeping machines were deployed for the cleaning of berths, back up areas and roads.



Road Sweeping machines



Road Sweeping machines

The sweeping machines are being operated during nighttime also



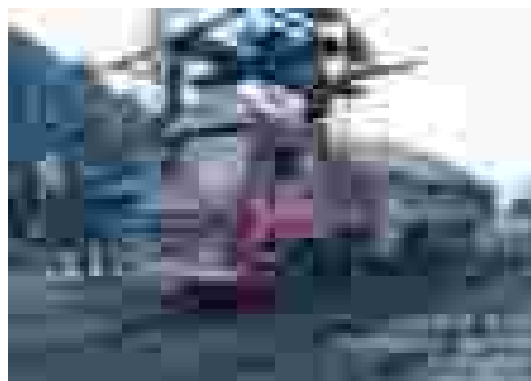
g. Mechanical & Manual Cleaning of roads outside the Port

AGPL has been cleaning the internal roads including the operational areas & 4 Lane Road manually on regular basis in addition to the mechanical clearing (through Sweeping Machines) to avoid fugitive emissions.

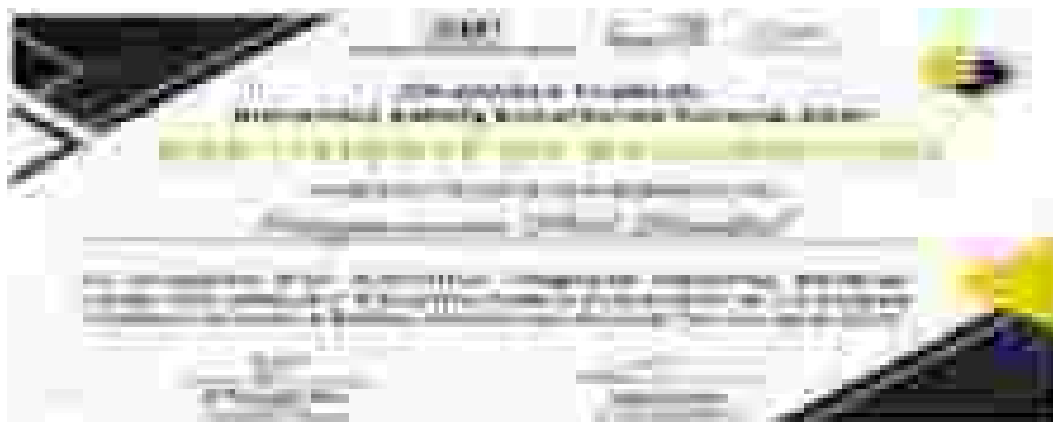


h. Truck/Tarpaulin Covering:

- AGPL established 16 No. of semi mechanized truck tarpaulin covering stations at various locations within the Port to facilitate and ensure all the outgoing cargos by Trucks are covered with tarpaulin.
- AGPL ensuring that the tarpaulin is covered in all sides of the truck and tightly tied with rope so that the tarpaulin should not be uncovered while traveling until the truck reaches the destination without any transit spillage.



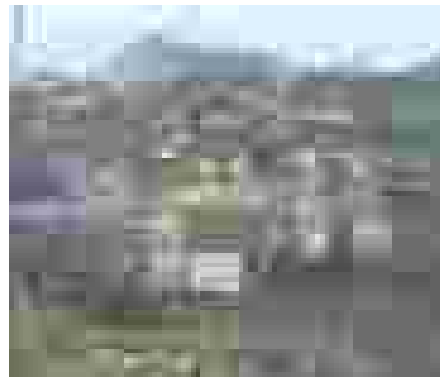
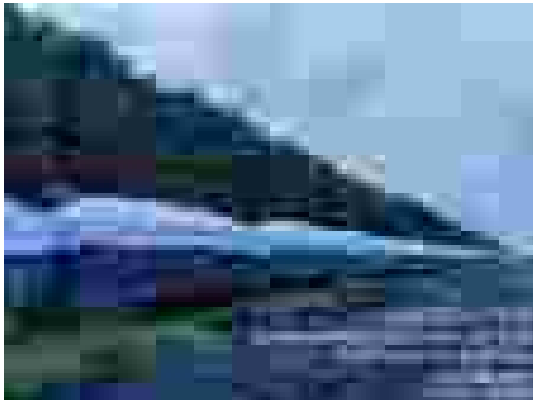
For this innovative invention, AGPL received "Industrial Safety Excellence Award – 2021 from the Confederation of Indian Industry (CII.)"



i. Railway Wagon Tarpaulin Covering Station

AGPL established a semi mechanized railway wagon tarpaulin covering station at Silo location within the Port to facilitate and ensure all the outgoing cargo rakes are covered

with tarpaulin and tightly tied with rope so that the tarpaulin should not be uncovered while traveling until the wagon reaches the destination without any transit spillage.



j. Truck Tyre Washing Facility

Provided 2 no. of automatic sensor-based truck/tyre washing facilities to ensure two stage wheels washing of all the outgoing vehicles to avoid dust passage on to outside roads.



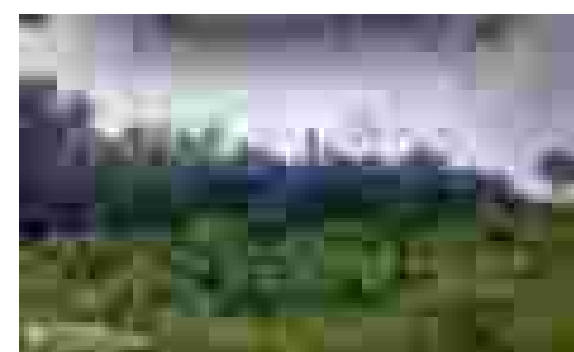
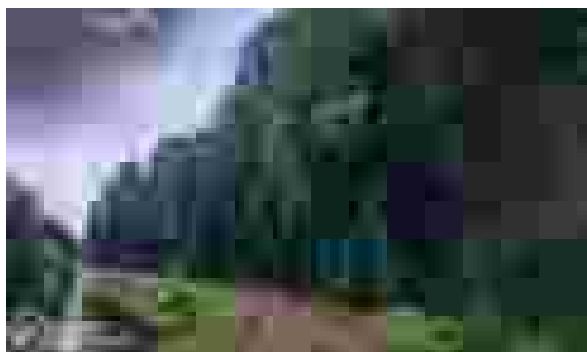
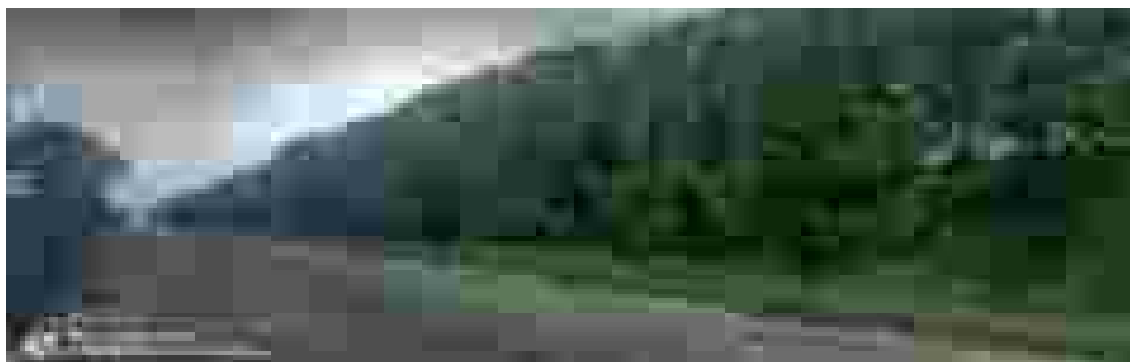
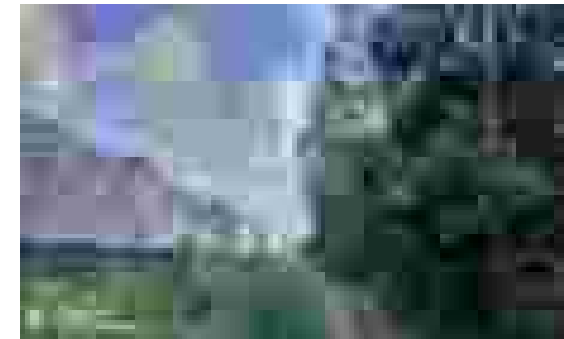
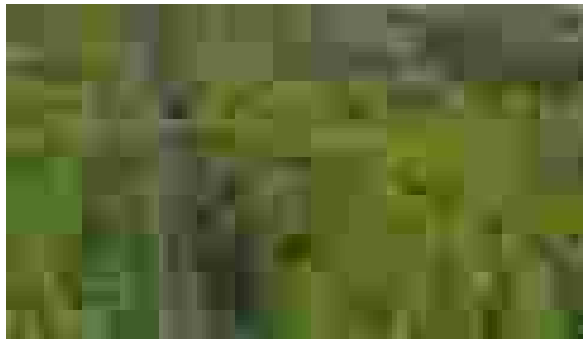
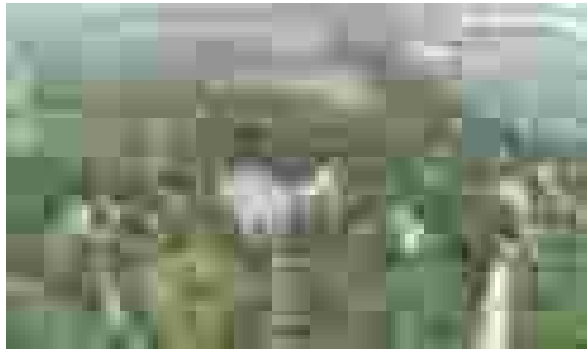
k. Specific measures towards Habitation:

Erected wind breaking walls towards Gangavaram village and HB Colony to prevent any dust transfer to habitation and a thick green belt developed supporting to the wind breaking wall, 10 layers in North-West direction to arrest the dust emissions to the villages.



Wind breaking wall towards HB Colony & Gangavaram (V)

Plantation at - GPL Site Office & all along North boundary wall side plantation supporting Wind screen towards Gangavaram village, towards Kongapalem & Venkannapalem Villages



ANNEXURE-4
MECHANIZED OPERATIONS DETAILS

Mechanized Operations

Mechanized Terminals: Majority of Port operations (80%) are carried out through mechanized terminals and through sophisticated cargo handling equipment to avoid cargo spillage and dust emissions during the cargo handling activities.



Container handling equipment



Ship Loader & unloaders



Mechanized Loader & unloaders

1. **Mechanized Cargo Operations:** Sophisticated equipment are established for cargo handling operations of bulk cargo to minimize cargo spillage during operations and the equipment includes Ship Loader for bulk exports, Ship Un-loaders for bulk imports, Mobile Harbour Cranes for handling bulk/break bulk cargo, associated hooded conveyer system for transportation to and from stack yard, Stackers & Re-claimers for stack yard operations and silos , Wagon loader & Wagon tippers for handling Railway rakes.





HMC Equipment

2. **Hooded Conveyor System for internal cargo transport:** More than 80% of the cargo transport from berth to stack yards and vice versa is handled through closed conveyor to prevent cargo emissions into the air.



Hooded conveyor belts



Cladding to conveyor belt



Closed cargo shed

3. **Mechanized Outbound Transport:** More than 90% outbound cargo from the stack yards is being transported through closed conveyors and railway rakes to avoid possible

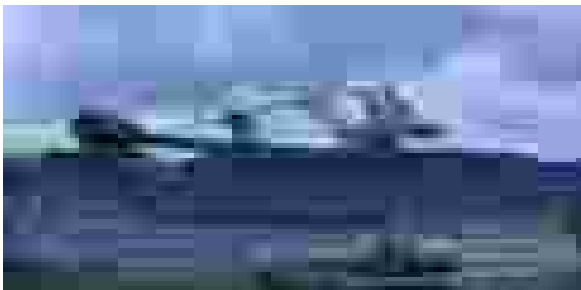
cargo spillage and dust emission. A dedicated conveyor is provided to transport coal directly to Vizag Steel Plant stack yard.



Silo



Staker

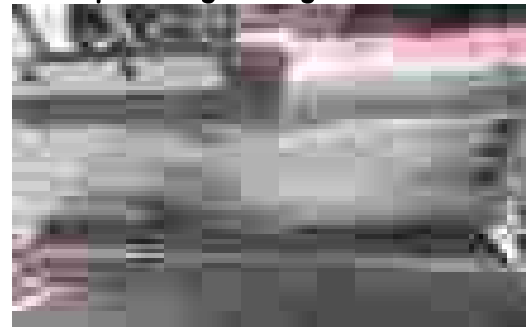
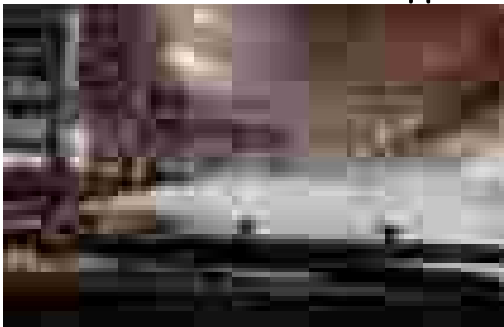


Staker cum Reclaimer



Mechanized Transfer towers

Mechanized Staker supported by water sprinkling arrangement



Wagon Tippler House

2.8 Cargo handled

AGPL is presently operating with 9 berths with a consented capacity of 51.0 MMTPA and an Iron Ore Screening & Crushing unit. The consented quantities are as below:

S. No.	Name of the cargo	Existing permitted Commodities
1	Containers	5.00 MMTPA
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	8.00 MMTPA
3	Coal	26.00 MMTPA
4	Iron ore **	5.50 MMTPA
5	Fertilizer	2.50 MMTPA
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50 MMTPA
7	Liquid cargo (edible oil, caustic lye) *	0.50 MMTPA
	Total Cargo handling	51.0 MMTPA
a.	Screened Iron Ore Fines **	1.0 Lakh TPM
b.	Crushed Iron Ore **	1.0 Lakh TPM

* AGPL has not yet started handling liquid cargo

With the Port demonstrating successful operations in terms of volume and diversity of cargoes with many new prospective users and new cargoes in the hinterland of AGPL, augmented the cargo handling capabilities at the port by way of adding new facilities as well as improving upon the existing receipt and dispatch systems, and obtained Environmental & CRZ clearance from MoEF& CC vide EC & CRZ Clearance dated 24.12.2021 for handling up to 60.95 MTPA with wide variety of cargo and due to various demand requirement and detailed engineering assessment.

Further, AGPL obtained CTE from AP Pollution Control Board vide Order dated 16.08.2022. The approved cargo handling capacities are given in Table 1-1.

S. No.	Name of the cargo Existing	Volume (MTPA)
1	Containers	8.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	12.70
3	Coal	28.25
4	Iron ore	5.50
5	Fertilizer	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50
	Total	60.95

Based on the market requirements, AGPL proposed Phase wise implementation of the project within the approved 60.95 MMTPA and in the process, under Phase – I development obtained CTO from APPCB for the below cargo handling capacities vide Order No: APPCB/VSP/113/CTO/HO/2009 dated 22.08.2024 as furnished in **Table 1-2**.

S. No.	Name of the cargo Existing	Volume (MTPA)
1	Containers	5.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	8.00
3	Coal	26.0
4	Iron ore*	5.50*
5	Fertilizer	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50
	Total	51.00
*	Screened Iron Ore Fines (Lakh Tons/ Month)	1.0
*	Crushed Iron Ore (Lakh Tons/ Month)	1.0

AGPL has handled 11.44 MMT of above-mentioned cargoes during the Financial Year from April-2023 to March 2024 against the consented quantity of 40.95 MMTPA.

ANNEXURE-5
SAFETY MOCK DRILL DETAILS



SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No	: 01
Scenario Title	: Snake Bite
Date	: 23.08.2025
Time of Trigger of MD	: 12:18 Hrs.
Location	: Line No:11
Persons	:
Incident Controller	: Mr. V. Chandra Sekhar
Observer (Safety)	: Mr. G. Roop Kumar

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, during routine cleaning of wagons and coal at the T-coal yard LINE-11, Moran Sihah Age-35 was bitten by a snake. Nearby workers promptly noticed the incident and immediately informed the site Safety-Supervisor Mr. Prasad. He Immediately informed to the Port control, The victim was shifted to a safe area Subsequently, the Port Control was informed about the situation to EMC team. As for the emergency response protocol, the Medial team responded promptly, provided First Aid, and shifted the victim to the AGPL Emergency Medical Center (Dispensary) for further treatment.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Security team Response good.
- Ambulance Response was Very good.

Recommendations for better coordination / response

- During emergencies, any activity should be suspended until all clear signals.
- Sufficient water and Rest places need at workplaces.
- While working in open areas there's a need for breaks to rest and relax.
- All the team members must have proper communication during emergency situations.
- During any emergency related safety kits must be at the incident location.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Mechanical team	Port Control	By Mobile	2Min.	1Min	5
Port Control	Medical	By VOIP Phone	3Min.	2Min	5
Port Control	Security	By VOIP Phone	3Min.	2Min	5
Port Control	Safety	By VOIP Phone	3Min.	2Min	5

*(Deduct 01 Number for every 60Sec delay)

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)

Location In charge	3Min.	3Min.	5
Medical Team	8Min.	4Min.	5
QRT	8Min.	4Min.	5
Safety	8Min	4Min	5

Personnel Performance:

Functionaries

Rating (Max. 5 Marks/item)

1) Location in-charge response	5
2) QRT response	5
3) Medical Team	
4) Safety Team	5

Emergency Equipment/Systems:

Rating (Max. 5 Marks/item)

All Medical staff, Security staff, Safety staff and working crew wore helmets, shoes and reflective jackets.

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	The medical team response was prompt well in time	The Safety team response was good.
2	Some of the workers are not know of the Emergency Contacts.	Communication in TBT Meetings	Some of the workers are not aware of the Emergency Contacts	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head









SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No	: 01
Scenario Title	: Electrical fire
Date	: 25.09.2025
Time of Trigger of MD	: 01:42 Hrs.
Location	: CSS No:6, MBU No:3
Persons	:
Incident Controller	: Mr. V. Chandra Sekhar
Observer (Safety)	: Mr. S. Srinivasa Raju

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, during routine working hours, the Bagging Plant in running operation with 34 manpower including the technician team. At 01:42 AM, smoke was observed emitting from the DB panel board of the conveyor system, indicating a short-circuit fire. 01:43 AM Mr. Naveen Kumar (Electrical Technician) observed the smoke from DB panel & immediately pressed the Emergency stop of the equipment, alerted the workers to move to a safe location, and reported the incident to the Port control, Mr. Naveen Kumar attempted to control the fire using a Co2 extinguisher. Port control alerted the ISCR, Fire & Safety team, medical team and Security team. All emergency teams arrived the location, Fire crew successfully controlled the fire using Co2 Extinguisher.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Fire Tender was reached on time & controlled the fire.
- The security team response was prompt and diverted the traffic.
- Ambulance Response was good.

Recommendations for better coordination / response.

- During emergencies, any activity should be suspended until all clear signals.
- Maintain good housekeeping.
- Hazardous substance all the fire team must wear fire suits with SCBA.
- Fire team must know the MSDS before compact with fire.
- All the team members must have proper communication during emergency situations.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Warehouse Team	Port Control	By Mobile	2Min.	1Min	5
Port Control	Fire Station	By VOIP Phone	2Min.	1Min	5
Port Control	Medical	By VOIP Phone	2Min.	1Min	5
Port Control	Security	By Walkie Talky	2 Min.	2Min	5

***(Deduct 01 Number for every 60Sec delay)**

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)
Location In charge	3Min.	1Min.	5
Fire Team	5Min.	3Min.	5
Medical Team	5Min.	3Min.	5
Security Team	5Min	3Min	5

Personnel Performance:**Functionaries****Rating (Max. 5 Marks/item)**

1) Location in-charge response

5

2) QRT response

5

3) Medical Team

4) Fire Team

5

5

Emergency Equipment/Systems:**Rating (Max. 5 Marks/item)**

All Fire staff, Security staff, medical staff and working crew wore helmets, shoes and reflective jackets.

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	The medical team response was prompt well in time	The Fire & Safety team response was good.
2	Some of the workers are not aware of the Emergency Contacts.	Communication in TBT Meetings	Some of the workers are not aware of the Emergency Contacts	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head









SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No	: 01
Scenario Title	: Cardiac arrest
Date	: 12.10.2025
Time of Trigger of MD	: 11:26 Hrs.
Location	: Balaji Garage
Persons	:
Incident Controller	: Mr. V. Chandra Sekhar
Observer (Safety)	: Mr. S. Srinivasa Raju

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, in the vehicle garage (Balaji garage), Balaji worker Mr. Shankar was performing hot work (Welding) at height using a man basket attached to a hydra boom for the construction of a new shed. During the activity, Mr. Shankar felt pain on the left side of his chest and collapsed inside the man basket. The helper immediately alerted the hydra operator to lower the boom and informed the supervisor and concerned AGPL Executive Mr. Ramakrishna. The victim was safely brought down and shifted to a safe area. Subsequently, the Port Control was informed about the situation. As for the emergency response protocol, the Medical team responded promptly, provided First Aid , and shifted the victim to the AGPL Emergency medical center (Dispensary) for further treatment.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Security & Traffic team response was prompt and barricaded the area with safety cones to restrict unauthorized movement.
- Ambulance Response was good.

Recommendations for better coordination / response

- During emergencies, any activity should be suspended until all clear signals.
- Sufficient water and Rest places need at workplaces.
- While working in open areas there's a need for breaks to rest and relax.
- All the team members must have proper communication during emergency situations.
- During any emergency related safety kits must be at the incident location.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Mechanical team	Port Control	By Mobile	2Min.	1Min	5
Port Control	Medical	By VOIP Phone	3Min.	2Min	5
Port Control	Security	By VOIP Phone	3Min.	2Min	5
Port Control	Fire & Safety	By VOIP Phone	3Min.	2Min	5

***(Deduct 01 Number for every 60Sec delay)**

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)
Location In charge	3Min.	3Min.	5
Medical Team	8Min.	5Min.	5
QRT	8Min.	6Min.	5
Fire & Safety	8Min	5Min	5

Personnel Performance:**Functionaries****Rating (Max. 5 Marks/item)**

1) Location in-charge response	5
2) QRT response	
3) Medical Team	5
4) Fire & Safety Team	5

Emergency Equipment/Systems:**Rating (Max. 5 Marks/item)**

All Medical staff, Security staff, Fire & Safety staff and working crew wore helmets, shoes and reflective jackets.

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	The medical team response was prompt well in time	The Fire & Safety team response was good.
2	Some of the workers are not know of the Emergency Contacts.	Communication in TBT Meetings	Some of the workers are not aware of the Emergency Contacts	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head









SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No	: 01
Scenario Title	: Vehicle Accident
Date	: 17.10.2025
Time of Trigger of MD	: 14:02 Hrs.
Location	: Line No:11
Persons	:
Incident Controller	: Mr. V. Chandra Sekhar
Observer (Safety)	: Mr. G. Roop Kumar

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, During the drill scenario, wagon – cleaners arriving to clean the wagon were walking on the road when one wagon cleaner ANANT KUMAR SAI Age-25 was accidentally hit by an EICHER-Vehicle moving within the work zone. The cleaner fell to the ground and sustained simulated injuries to his head and nearby workers promptly noticed the incident and immediately informed the site supervisor Mr. Appa Rao and the Safety Officer Mr. V. Nani Babu. shifted to a safe area and immediately informed Port Control. Subsequently, the Port Control was informed about the informed about the situation. As for the emergency response protocol, the Medial team responded promptly, provided First Aid, and shifted the victim to the AGPL Emergency Medical Center (Dispensary) for further treatment.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Security & Traffic team response was prompt and barricaded the area with safety cones to restrict unauthorized movement.
- Ambulance Response was good.

Recommendations for better coordination / response

- During emergencies, any activity should be suspended until all clear signals.
- Sufficient water and Rest places need at workplaces.
- While working in open areas there's a need for breaks to rest and relax.
- All the team members must have proper communication during emergency situations.
- During any emergency related safety kits must be at the incident location.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Mechanical team	Port Control	By Mobile	2Min.	1Min	5
Port Control	Medical	By VOIP Phone	3Min.	2Min	5
Port Control	Security	By VOIP Phone	3Min.	2Min	5
Port Control	Fire & Safety	By VOIP Phone	3Min.	2Min	5

*(Deduct 01 Number for every 60Sec delay)

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)
Location In charge	3Min.	3Min.	5
Medical Team	8Min.	5Min.	5
QRT	8Min.	5Min.	5
Safety	8Min	5Min	5

Personnel Performance:**Functionaries****Rating (Max. 5 Marks/item)**

1) Location in-charge response	5
2) QRT response	
3) Medical Team	5
4) fety Team	5

Emergency Equipment/Systems:**Rating (Max. 5 Marks/item)**

All Medical staff, Security staff, Fire & Safety staff and working crew wore helmets, shoes and reflective jackets.

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	The medical team response was prompt well in time	The Fire & Safety team response was good.
2	Some of the workers are not know of the Emergency Contacts.	Communication in TBT Meetings	Some of the workers are not aware of the Emergency Contacts	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head









SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No : 01

Scenario Title : General fire

Date : 24.11.2025

Time of Trigger of MD : 16:41 Hrs.

Location : Line No:7

Persons :

Incident Controller : Mr. V. Chandra Sekhar

Observer (Safety) : Mr. G. Roop Kumar

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, during routine Wagon-Cleaning activities in the yard area, one cleaner carelessly threw a burning cigarette tip on a tyre lying in the work zone. Due to poor housekeeping, the tyre started to catch fire and produced heavy smoke. While responding to the incident, the Yard Supervisor Name. Mouli (Age 25) inhaled smoke and began feeling dizzy and nearly unconscious. Nearby workers noticed the smoke and immediately informed the site in charge, Mr. N. Ramana, He was immediately informed to the Port control. Port control alerted the Fire & Safety team, Security team and medical team. All emergency teams arrived at the location, Fire crew fire fighting started and completely put off the fire and Shift to Mr. Moule To EMC for further treatment.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Fire Tender was reached on time & controlled the fire.
- Ambulance Response was very good.
- The security team response was prompt, Barricaded the area and diverted the traffic.

Recommendations for better coordination / response

- During emergencies, any activity should be suspended until all clear signals.
- Maintain good housekeeping.
- Hazardous substance all the fire team must wear fire suits with SCBA. Fire team must know the MSDS before compact with fire.
- All the team members must have proper communication during emergency situations.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Site Executive	Port Control	By Mobile	2Min.	1Min	5
Port Control	Fire Station	By VOIP Phone	2Min.	1Min	5
Port Control	Medical	By VOIP Phone	2Min.	1Min	5
Port Control	Security	By Walkie Talky	2 Min.	2Min	5

***(Deduct 01 Number for every 60Sec delay)**

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)
Location In charge	2Min.	1Min.	5
Fire Team	8Min.	6Min.	5
Medical Team	8Min.	6Min.	5
QRT	8Min	6Min	5

Personnel Performance:

• Functionaries	• Rating (Max. 5 Marks/item)
• Location in-charge response	• 5
• QRT response	• 5
• Medical Team	• 5
• Fire Team	• 5

Emergency Equipment/Systems:**Rating (Max. 5 Marks/item)**

All Fire staff, Security staff, medical staff and working crew wore helmets, shoes and reflective jackets.

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	The medical team response was prompt well in time	The Fire & Safety team response was good.
2	Some of the workers are not aware of the Emergency Contacts.	Communication in TBT Meetings	Some of the workers are not aware of the Emergency Contacts	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head











SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No	: 01
Scenario Title	: Wast wood fire
Date	: 19.02.2026
Time of Trigger of MD	: 16:40 Hrs.
Location	: Near Silo
Persons	:
Incident Controller	: Mr. V. Chandra Sekhar
Observer (Safety)	: Mr. S. Srinivasa Raju

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, Mr. K. Raghu Babu While observing Rake loading from Silo, he identified the Fire & Smoke on waste wood Pices near Silo open area, He was immediately informed to the in-charge Mr. G S N Raju and Port control, Port control alerted the Fire & Safety team, medical team and Security team. All emergency teams arrived at the location, Fire crew fire fighting started and put it off the fire and controlled the event.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Fire Tender was reached on time & controlled the fire.
- The security team response was prompt and diverted the traffic.
- Ambulance Response was good.

Recommendations for better coordination / response

- During emergencies, any activity should be suspended until all clear signals.
- Maintain good housekeeping.
- Hazardous substance all the fire team must wear fire suits with SCBA.
- Fire team must know the MSDS before compact with fire.
- All the team members must have proper communication during emergency situations.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Silo ESD Team	Port Control	By Mobile	2Min.	1Min	5
Port Control	Fire Station	By VOIP Phone	2Min.	2Min	5
Port Control	Medical	By VOIP Phone	2Min.	2Min	5
Port Control	Security	By Walkie Talky	2Min.	2Min	5

*(Deduct 01 Number for every 60Sec delay)

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)
Location In charge	6Min.	5Min.	5
Fire Team	6Min.	5Min.	5
QRT	6Min.	6Min.	5
Medical Team	6Min	5Min	5

Personnel Performance:

• Functionaries	• Rating (Max. 5 Marks/item)
	• 5
• Location in-charge response	• 5
• QRT response	• 5
• Medical Team	• 5
• Fire Team	

Emergency Equipment/Systems:

Rating (Max. 5 Marks/item)

All Fire staff, Security staff, medical staff and working crew wore helmets, shoes and reflective jackets.

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	Medical The team response was prompt well in time	The Fire & Safety team response was good.
2	Some of the workers are not aware of the Emergency Contacts.	Communication in TBT Meetings	Some of the not aware of the Emergency Contacts workers are	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head









SAFETY MOCK DRILL / EMERGENCY EXERCISE REPORT

Mock drill No	: 01
Scenario Title	: Heat stroke
Date	: 30-03-2026
Time of Trigger of MD	: 15:30 Hrs.
Location	: AGPL/CT Yard/ Pump house area
Persons	:
Incident Controller	: Mr. V. Chandra Sekhar
Observer (Safety)	: Mr. S. Srinivasa Raju

Brief of Incident / Scenario: In Adani Gangavaram Port Ltd, at AGPL/CT Yard/ Pump house area (Near Berth No:9), Think Tank company worker Mr. Sourav was carrying out levelling work at the pump house area under direct sunlight. Due to continuous exposure to high temperature and inadequate hydration, the worker suddenly felt dizzy and collapsed on the ground due to suspected sunstroke (heat stress). it was observed that the Site Engineer Mr.G.Bapuji and he shifted to the victim to cold and safe place, then he informed to the port control about the situation and through the information by Port control on emergency protocol basis Medical Team attended Quickly and given FIRST AID and shift him to AGPL EMC (Dispensary) for further treatment, QRT team also arrived at the location and barricaded the area with safety cones.

Observations (Safety)

- Site staff found well alert and aware of emergency contacts.
- Security & Traffic team response was prompt and cordoned the area with safety cones
- Ambulance Response was good.
- Fire Tender was reached on time.

Recommendations for better coordination / response

- During emergencies, any activity should be suspended until all clear signals.
- Sufficient water and Rest places need at workplaces.
- While working in open areas there's a need for breaks to rest and relax.
- All the team members must have proper communication during emergency situations.
- During any emergency related safety kits must be at the incident location.

Communication Flow:

By	To	Mode Of Communication	Standard Time	Actual Time	Rating (Max.5 Marks/item)
Mechanical team	Port Control	By Mobile	2Min.	1Min	5
Port Control	Medical	By VOIP Phone	2Min.	1Min	5
Port Control	Security	By VOIP Phone	2Min.	2Min	5
Port Control	Safety	By VOIP Phone	2Min.	2Min	5

***(Deduct 01 Number for every 60Sec delay)**

Response Time:

Functionaries	Target Time	Actual Time	Rating (Max.5 Marks/item)
Location In charge	3Min.	3Min.	5
Medical Team	3Min.	2Min.	5
QRT	3Min.	2Min.	5
Fire & Safety	2Min	1Min	5

Personnel Performance:

All Medical staff, Security staff, Fire staff and working crew wore helmets, shoes and reflective jackets.

• Functionaries	• Rating (Max. 5 Marks/item)
	• 5
• Location in-charge response	• 5
• QRT response	• 5
• Medical Team	• 5
• Fire Team	

Emergency Equipment/Systems:

Rating (Max. 5 Marks/item)

Personnel Protective Equipment Used:

PPE	Working crew	Medical personnel	Security team	Rating (1 Mark for each item)
Helmet	Yes	Yes	Yes	1
Gloves	Yes	Yes	Yes	1
Safety shoes	Yes	Yes	Yes	1

Summary:

Sr. No	Observations	Recommendations	Action By	Target Date
1	The medical team response was prompt well in time	Encouraged them to maintain the same tempo.	The medical team response was prompt well in time	The Fire & Safety team response was good.
2	Some of the workers are not aware of the Emergency Contacts.	Communication in TBT Meetings	Some of the workers are not aware of the Emergency Contacts	Ensure no ignitions sources near-by

Comments of Head of the Fire & Safety:

Final Rating: Excellent

Critical Points noted & (CAPA):

CAPA: Corrective & Preventive Action Plan.

Signed by Fire & Safety Head







ANNEXURE-6
RISK ASSESSMENT REPORT



Risk Assessment Studies for Liquid Cargo for Adani Gangavaram Port Limited



Risk Assessment Report

April, 2026

Submitted by:



FALCON RESILIENT
INFRA CONSULTANTS

NABET Accredited :

Certificate No.: NABET/EIA/2326/IA 0123 Validity: 16/08/2026

Document Control

Project Number and Name	C23017 Risk Assessment Studies for Liquid Cargo for Adani Gangavaram Port Limited		
Client	Adani Gangavaram Port Limited		
Document Title	Risk Assessment Report		
Document Number	DL005		
Revision	0		
Date	10-04-2026		
Name/Initial	RCP	VVH	SAM
	Prepared	Reviewed	Approved

Table of Contents

1	Introduction	1-1
1.1	Background	1-1
1.2	Chronology of Environmental & CRZ Clearances of AGPL.....	1-1
1.3	Project location	1-2
1.4	Risk Analysis	1-3
1.5	Hazard Identification	1-4
1.5.1	Hazards during Construction Phase	1-4
1.5.2	Hazards during Operation Phase	1-5
1.5.3	Hazardous Material Inventories.....	1-6
1.5.4	Preliminary Hazard Analysis (PHA)	1-7
1.5.5	Natural disasters.....	1-8
1.5.6	Ignition sources	1-8
1.6	Consequence Analysis	1-8
1.6.1	Maximum Credible Accident (MCA) Analysis	1-8
1.6.2	Damage Criteria.....	1-10
1.6.3	Failure Frequency	1-11
1.6.4	Release Models and Source Strength.....	1-12
1.6.5	Software	1-17
1.6.6	Rule Set and Assumptions.....	1-18
1.6.7	Meteorological Conditions.....	1-18
1.6.8	Stability Class.....	1-20
1.6.9	Risk Assessment	1-20
1.6.10	Discussions and Recommendations	1-31

Exhibits

No table of figures entries found.Figures

Figure 1-1: Project Location	1-3
Figure 1-2: Steps in consequence Calculations.....	1-11
Figure 1-3: Percentage Fatality for 20 Second Exposure based on Thermal Probabilities	1-16
Figure 1-4: Risk contours by considering hills as barrier	1-33

Tables

Table 1-1: Cargo to be Handled and Storage Details.....	1-5
Table 1-2: Flammable and Toxic Properties of materials to be handled and stored	1-6
Table 1-3: Preliminary Hazard analysis for Process and Storages Area	1-7
Table 1-4: Representative List of Liquid and Cryogenic Gases Cargo	1-9
Table 1-5: General failure frequencies.....	1-11
Table 1-6: Damage due to incident radiation	1-16
Table 1-7: Exposure time, heat radiation and damage levels.....	1-17
Table 1-8: Effect of over pressure.....	1-17
Table 1-9: Probability of wind speed (m/s) in different directions at Visakhapatnam (Based on observations from (1991 to 2020)	1-18
Table 1-10: Meteorological Data at Visakhapatnam (Based on observations from 1991 to 2020) 1-19	
Table 1-11: Heat Radiation Damage Distances – Marine Loading Arms at Jetty	1-22
Table 1-12: Overpressure Damage Distances - Marine Loading Arms at Jetty	1-22
Table 1-13: Heat Radiation Damage Distances – Pipelines from Jetty to Storage Tanks	1-22
Table 1-14: Overpressure Damage Distances – Pipelines from Jetty to Storage Tanks (Tank Farm Area)	1-23
Table 1-15: Heat Radiation Damage Distances (HRDD) – Tank Farm Area (TFA)	1-26
Table 1-16: Overpressure Damage Distances (OPDD) – Tank Farm Area (TFA).....	1-26

Table 1-17: Heat Radiation Damage Distances (HRDD) – Pipeline from LPG mixing unit to LPG Loading area (TLF)	1-26
Table 1-18: Overpressure Damage Distances (OPDD) – Pipeline from LPG mixing unit to LPG Loading area (TLF)	1-27
Table 1-19: Scenarios that can cause Cascade Effects.....	1-30

1 Introduction

1.1 Background

Adani Gangavaram port is located at Gangavaram village, Pedagantyada Mandal, Visakhapatnam district of Andhra Pradesh. Adani Gangavaram port operating with 9 berths with approved cargo handling capacity of 60.95 MTPA for variety of Cargos of bulk and break bulk including coal, iron ore, Multi Cargo (Agri products, Slag, Limestone, Steel products etc.), Fertilizer, Industrial Raw Materials such as Gypsum, Aluminum Ingots, Liquid cargo handling such as LPG, Butane, Propane, Propylene, POL – class A, B & C etc. and non-hazardous liquid cargo, edible oil and caustic lye. etc., Their facilities includes berths, state-of-the-art cargo handling systems, mechanized storage facilities, railway sidings etc., The Port extended to 2852 acres, out of which port development and operation is in 1800 acres only.

1.2 Chronology of Environmental & CRZ Clearances of AGPL

- 1. Phase I (First EC):** In 2005, AGPL obtained Environmental and CRZ clearance for developing port facilities with a cargo handling capacity of 16.54 MTPA. The project included construction of four berths (dry bulk, fertilizer/limestone, container terminal, and break/multipurpose), along with an exclusive berth for port crafts, supported by warehousing and transit shed facilities. The port was designed to handle coal, iron ore, limestone, fertilizers, containers, and break bulk/general cargo. Environmental Clearance for Phase I/First EC obtained vide EC No. 10-3/2005-IA.III dated 11.03.2005, was given as **Appendix A**.
- 2. Second EC:** Environmental and CRZ clearance was subsequently obtained for the construction of a 5th berth by converting the existing port craft berth into a full-fledged general cargo berth. General Cargo such Food grains & Slag were added. The overall cargo handling capacity remained at 16.54 MTPA. Environmental Clearance for Construction of 5th Berth obtained vide under EIA Notification 2006 and CRZ Notification 1991 on 19.03.2010 was given as **Appendix A**.
- 3. Third EC (Phase II):** Environmental and CRZ clearance was obtained for Phase II expansion, which included the development of a 6th berth as a mechanized coal berth capable of handling cape-size vessels, along with 7th, 8th, and 9th multipurpose berths for handling general and multipurpose cargo. With these additions, the overall cargo handling capacity was enhanced to 40.95 MTPA. Environmental & CRZ Clearance for expansion of Phase-II under EIA Notification 2006 and CRZ Notification 2011 on 07.02.2012 was given as **Appendix A**.
- 4. Fourth EC:** Environmental and CRZ clearance was obtained for enhancing cargo handling capacity through modernization and mechanization within the existing nine berths, without any changes to the number of berths or marine infrastructure. With these improvements, the cargo handling capacity was increased to 60.95 MTPA. Environmental and CRZ Clearance under 7 (ii) of EIA Notification, 2006 for increase in cargo handling capacity from 40.95 to 60.95

MTPA through modernisation/mechanisation was obtained vide EC Identification No. EC21A033AP141550 dated on 24.12.2021 was given as **Appendix A.**

- 5. Fifth EC:** Environmental and CRZ clearance was obtained for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA and without increasing pollution load.

S.No.	Name of the cargo	Cargo (MTPA)	Profile
1.	Iron ore	5.5	
2.	Coal	28.25	
3.	Multi-Purpose Cargo- Agri products, (Food grains in bags or bulk, Chic-peas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos	11.70	
4.	Containers	6.00	
5.	Fertilizer	2.50	
6.	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	
7.	Liquid cargo (Edible oil, caustic lye) Proposed - LPG, POL – class A, B & C etc. and non-hazardous liquid cargo etc.)	3.50	
	Total	60.95	

As per the specific condition 1.6 of the EC & CRZ clearance for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling was obtained vide EC No. 10/51/2021-IA.III dated 19.11.2025 following condition was given.

"In addition to the comprehensive Risk assessment studies for liquid cargo already conducted the Project Proponents (PP) shall also undertake the BLEVE Study and incorporate appropriate mitigation measures for such extreme scenarios in the project documentation. Compliance with these requirements shall be ensured prior to commencement of project activities and a compliance report shall be submitted along with 6 monthly compliance reports".

Accordingly, Risk assessment studies for liquid cargo is carried out.

1.3 Project location

Adani Gangavaram port is located at Gangavaram village, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh.



Figure 1-1: Project Location

1.4 Risk Analysis

Risk Assessment study was carried out to assess risks associated with the liquid cargo unloading, transfer and storage of the materials at Adani Gangavaram port. Risk Analysis/Assessment (RA) will help in identification of the hazards and associated risk in the unloading/loading operations and storage. The RA thus carried out also provides inputs for formulating the onsite Disaster Management Plan (DMP). The RA can be broadly divided into three basic steps:

- Hazard Identification
- Risk Analysis
- Discussion and Recommendations/Risk Mitigation Measures

Individual Risk: The individual risk results show the geographical distribution of risk. It is the frequency at which an individual may be expected to sustain a given level of harm from the realization of specified hazards and is normally taken as risk of death (fatality). It is expressed as risk per year. This is the risk to a hypothetical individual being present at that location continuously there for 24 hours a day and 365 days a year. Individual Risk levels for worker between 1×10^{-3} and 1×10^{-6} per year will be reduced to levels as low as reasonably practicable (ALARP). Individual Risk for public between 1×10^{-4} per year to 1×10^{-6} per year will be considered to be in the ALARP region.

Societal Risk: Societal Risk is the risk experienced in a given time period by the whole group of personnel exposed, reflecting the severity of the hazard and the number of people in proximity to it. It is defined as the relationship between the frequency and the number of people suffering a given level of harm (normally taken to refer to risk of death) from the realization of the specified hazards.

F-N Curve: The FN Curve shows the frequency (F) with which events cause N or more fatalities. F-N curve for risk posed during unloading, transfer and storage operations at AGPL on public surrounding is given in Societal Risk section. The risk is above

ALARP limits but due to the presence of Muchukonda and Yarada hill near the jetty and storage tank farm area, the impact due to heat flux and overpressure effect will reduce drastically.

1.5 Hazard Identification

Identification of hazards is of primary significance in the analysis, quantification and cost-effective control of accidents. Potential Hazards identified in the proposed project have been broadly classified as below:

- Hazards during Construction Phase
- Mechanical Hazards
- Transportation Hazards
- Physical Hazards
- Storage and Handling of Hazardous Materials
- Hazards during Operation Phase
- Material Hazards
- Handling Hazards
- Hazard for hazardous inventory (Chemicals, Lubes etc.)
- Storage Inventory Hazard
- Hazards due to Natural Calamities
- Earthquake
- Tsunami
- Cyclone
- Flood

1.5.1 Hazards during Construction Phase

Potential hazards during the construction phase of the project could be due to the mechanical hazards, navigation/transportation hazards, physical hazards and storage and handling of hazardous materials.

Mechanical Hazards: Mechanical hazards during the construction phase arise due to the moving parts in the machinery, especially the belts and bolts of the construction equipment, which are heavy and pose a threat to the work personnel. Other hazards include falling (during working at heights), falling objects like handheld tools, wooden shuttering, welding gas cylinders etc., failure of slips and traps created for scaffolding; and due to faulting of electrical equipment.

Transportation/Navigation Hazards: The planning of access/egress to the construction site also plays a significant role in minimizing the associated hazards such as vehicles/ barges collision.

Physical Hazards: The noise and vibrations generated during the construction phase may affect the worker's health, hinder effective communication, and may jeopardise sensitive organs. In addition to noise and vibration, hot works also pose a considerable hazard to the workers.

Storage and Handling of Hazardous Materials: During the construction period, storage of hazardous materials like fuel for the engines, lubricants, paints, and other

flammable materials is likely to pose a fire and explosion risk. Due care shall be taken in locating these materials away from the workplace, free of any influence of temperature or sparks or fire. Proper wiring of the electrical appliances like lights, exhausts, etc., would be made to ensure that there are no live wires causing short circuits to ignite these materials.

1.5.2 Hazards during Operation Phase

The following are the liquid cargo proposed to be handled at Adani Gangavaram port and its storage type during revised master Plan development is shown in **(Table 1-1)**.

Table 1-1: Cargo to be Handled and Storage Details

S. No.	Cargo Type	Cargo Profile	Storage Type
1	Gas / Refrigerated liquids/Liquid,	Propane, Butane, and All Class A, B, C petroleum products, excluded petroleum products, Hazardous, Toxic and Non-Hazardous chemicals and other Liquid cargos, List includes the following: Butane, M-Xylene, Propane, Propylene and Motor spirit	Tank Farms/ Full Containment tanks and Handling & Transportation by Pipeline

Material Hazards: The above-mentioned cargo/materials will be handled at the Adani Gangavaram port facility as a part of change in configuration of activity. Liquid cargo and cryogenic gases can be classified as hazardous cargo based on its characteristics such as flammability, explosiveness, toxicity or corrosiveness etc. hence these cargoes are considered for risk assessment.

The ratings for a large number of chemicals based on flammability, reactivity and toxicity are given in NFPA (National Fire Protection Association) Codes and Material Safety Data Sheets (MSDS). The properties, NFPA classification and hazards due to exposure of cargo handled are presented in **Appendix B**.

Handling Hazards: Adani Gangavaram port involves handling of various materials in the form of Solid and Liquids. The hazards related to material transport and (un)loading may be due to accidents of vehicles, breaking of (un)loading arms, failure in mechanical transmission components, etc. The handling hazards include:

- Insufficient knowledge on hazardous nature of chemical in use leading to inappropriate handling of the chemical.
- Failure to use appropriate control measures and Personal Protective Equipment (PPE)
- Use of expired/worn Personal Protective Equipment (PPE)
- Failure of liquid/solid delivery tools
- Possible hazards during ship movements at the port are collision, grounding, etc.
- Likely hazards during loading and unloading of cargo.
- During ship unloading operations, the possible hazard may arise due to collision by another vessel and others.

Liquid Cargo handling: A fully mechanized ship loading/unloading system is planned at the berths. The major components of the mechanised ship loading/unloading system are: Ship unloaders, loaders and connected conveyor system/ pipelines etc.

Ship movements/Navigation Hazards: The navigation hazards during operation phase are grounding and collision of vessels at Adani Gangavaram port area. However, these would be controlled by suitable vessel traffic management by Adani Gangavaram port.

Ship (un)loading: During ship unloading operations, the possible hazard may arise due to collision by another vessel and others.

Transfer operation: The transfer operation involves transfer of cargo through chutes/ marine (un)loading arms into Pipelines. During this operation there is a possibility of mal-operation/non-synchronisation/ misalignment leading to cargo spillage.

Slip and Trip Hazards: Workers performing cleaning operations are exposed to slippery working surfaces and tripping hazards. This places workers at risk of:

- Slipping off oily and greasy ladders
- Slipping and falling on oily decks
- Tripping over equipment, hoses, and vessel structures

1.5.3 Hazardous Material Inventories

Identification of hazards is the most important step to improve the safety of any process /operation. The hazard study is designed to identify the hazards in terms of chemicals, inventories, and vulnerable processes/operations.

Except (un)loading, transfer and storage of Liquid cargo such as petroleum products and other chemicals, no manufacturing process or reaction is involved in the operations at Adani Gangavaram port. The operation at the port involves transfer of various products from ships to storage tanks with the help of pumps installed at ships with the help of unloading arms at jetties.

The primary step in hazard analysis of any process is to know the chemical inventories and hazardous properties. Some of the important liquid cargos to be stored in the port, along with hazardous properties, are given in **Table 1-2**.

Table 1-2: Flammable and Toxic Properties of materials to be handled and stored

Cargo Name	Flammability Limits Vol %age		Details of Tank/Equipment				Operating conditions	
	LEL	UEL	Capacity KL/MT/M ³ and Nos.	Dia (m)	Ht (m)	Type	Temp. °C	Pressure kg/cm ² (g) max
Butane	1.8	8.5	12500 MT/2	48	20	Double Wall, Full Containment Refrigerated Tanks/ Mounded Bullets/ pressure Vessels	-48 deg C to 90 deg C	Min. 5 to 12 Kg/cm ² max.- unloading arm; at atm 0.14 bar gauge in tank

Cargo Name	Flammability Limits Vol %age		Details of Tank/Equipment				Operating conditions	
	LEL	UEL	Capacity KL/MT/M ³ and Nos.	Dia (m)	Ht (m)	Type	Temp. °C	Pressure kg/cm ² (g) max
Propane	2.1	9.5	12500 MT/2	48	20	Double walled full containment Refrigerated Tanks/ Mounded Bullets/ Pressure Vessels with external insulation, Refrigerated	-48 deg C	Min. 5 to 12 Kg/cm ² max.- unloading arm; at atm 0.14 bar gauge in tank
Propylene	2	11	12500 MT/2	48	20	Double walled Full Containment Refrigerated Tanks/ Mounded Bullets / Pressure Vessels	-48 deg C	10
All Class A, B, C petroleum products, excluded petroleum oil products (Representative POL, Motor Spirit)	-	-	12500 MT/2	30	16	External Floating roof/internal floating roof/ Fixed roof (Dome/Cone) Pressure Vessels/ Horizontal vessels	0-160 deg C	atm+0.05 bar (g)

LEL – Lower Explosive Limit; UEL – Upper Explosive Limit

1.5.4 Preliminary Hazard Analysis (PHA)

A Preliminary Hazard Analysis is carried out initially to identify the major hazards associated with (un) loading / transfer, storages and the processes at Adani Gangavaram port. This is followed by consequence analysis to quantify these hazards. Finally, the vulnerable zones are plotted for which risk reducing measures are deduced and will be implemented.

Table 1-3: Preliminary Hazard analysis for Process and Storages Area

Equipment	Process/Operation	Potential Hazard	Provision
Marine (Un) Loading Arms/ Pipelines	Unloading of material from carrier ship and transportation of material from Jetty to Storage tanks in Tank Farm Area (TFA)	Fire & Explosion	Regular maintenance and inspection of pipelines as per OISD-124 and 140
Storage tanks	Storage of material for import and export	Fire & Explosion	Tanks design as per IS API / EN / Other International Codes & Other prevailing norms and fire protection facilities as per OISD-117, 118, 156 & 236, other international codes.
Tank Lorry Filling (LPG)	Blending/Mixing of Propane and Butane to form LPG and filling	Fire & Explosion	Pipeline design as per IS code, international codes & Other prevailing norms

Equipment	Process/Operation	Potential Hazard	Provision
	in Road tankers for supply to other users		and fire protection facilities as per OISD-144

1.5.5 Natural disasters

Natural disasters are inevitable in nature. In case of natural disasters occurring at the Adani Gangavaram port site such as Tsunami, Cyclone, Lightening, Thunders, Hurricane and Earthquake etc., no source of software exists for calculation of damage zones. However, scenarios leading to fire & explosions for line rupture; catastrophic failure of storage tanks and other equipment's can be estimated. The damage consequences will be same as domino effects (cascading effects) as one scenario will lead to initiation of another scenario of catastrophic failure of storage vessels and pipelines.

The only recommendation to avoid the maximum damage due to natural disasters is to design and construct the facility and equipment as per Indian Codes and standards, international codes and standards, best engineering practices, port early warning system and by taking maximum allowance for natural disasters into consideration.

1.5.6 Ignition sources

The pipeline route is from jetty to storage tanks will be provided with sufficient buffer on land, no sources of ignition are identified. However, at jetty where working personnel and hot surfaces will be available (chimney of ship), pose a threat of ignition source.

1.6 Consequence Analysis

1.6.1 Maximum Credible Accident (MCA) Analysis

MCA stands for Maximum Credible Accident or in other words, an accident with maximum damage distance, which is believed to be probable. In this revised master plan development, the proposed cargos (Liquid/Gaseous/Cryogenic) are divided into different class i.e.

- (i) Class – A Petroleum
- (ii) Class – B Petroleum
- (iii) Class – C Petroleum
- (iv) Excluded Petroleum
- (v) Other Gaseous Cargos and
- (vi) Other liquid Cargos. In case of accident, all the above cargo likely to cause Fire & Explosion and Toxic effects except other liquid cargos. Among these cargo, representative items from each class which cause maximum damage distances based on NFPA hazard classification have been selected and risks associated were quantified.

The cargos listed in Class (iv) and solids are not considered for QRA, as cargo from other classes (Class A/B/C) which will represent worst scenarios have already been considered. Also, scenarios from other cargos have health hazard as the most probable hazard. The necessary measures will be taken during handling, transfer and storage of such cargos.

The mentioned list in the **Table 1-4** is representative only. However, all the Classified and non-classified hydrocarbons, Hazardous and Non-Hazardous Chemicals/cargos other liquid cargo etc., having lesser risk than the representative list considered can be handled at Adani Gangavaram port. Storage of cargo in the CRZ Area shall be as per prevailing CRZ guidelines.

Table 1-4: Representative List of Liquid and Cryogenic Gases Cargo

S.N o		Chemical	Flash Point	H - Heal th	F – Flammabili ty	R/I – Reactivity / Instability
1	Classification Flash Point <23 deg C	Propylene (Propene)	-107.8	1	4	1
2		Propane	-104	1	4	0
3		Butane	-60	1	4	0
4		LPG	-60	1	4	0
5		Motor Spirit	-42.7	1	3	0
6		High Speed Diesel	35	1	2	0
		M-Xylene	27	2	3	0

A disastrous situation is the outcome of fire or explosion of the released gas in addition to other natural causes, which eventually leads to loss of life, damage to property and/or ecological imbalance.

Propane, Butane, Propylene, M-Xylene, Motor Spirit and LPG are mixture of different components/composition. The pressure in the pipeline varies from 12bar (g) (Near berth no.8 and no.9) to 1bar (in the tank farm area near the storage tanks).

Most of the scenarios are considered for the marine unloading arm, pipelines and storage tanks for the facility and presented in the **Table 1-8** to Error! Reference source not found.. However, only 5mm, 25mm leaks (small and medium) are responsible for 75% of the incidents occurring at any site. Whereas 100mm leak will be responsible for 15% of the cause for any incident and catastrophic failure/rupture will be responsible for 10% of the incidents. This is based on (From 1970) the data is collected by the International Association of Oil & Gas Producers (IOGP) from its member companies and published in the form of report at an interval of five years.

The credible accident scenarios expected at this facility are given below:

- Catastrophic failure of Butane Marine (Un)Loading Arm @ 12atm(g) and -48°C
- Catastrophic failure of Propane Marine (Un)Loading Arm @ 12atm(g) and -48°C
- Catastrophic failure of Propylene Marine (Un)Loading Arm @ 12atm(g) and -48°C
- Catastrophic failure LPG Marine(Un) Loading Arm @ 12atm (g) and -48°C
- Catastrophic failure of M-Xylene Marine (Un)Loading Arm @ 12atm(g) and 20°C
- Catastrophic failure of Motor Spirit Marine (Un)Loading Arm @ 12kg/cm2 and 20°C
- 16-inch Butane Pipeline from Jetty to Tank Farm Area

- 16-inch Propane Pipeline from Jetty to Tank Farm Area
- 16-inch Propylene Pipeline from Jetty to Tank Farm Area
- 16-inch LPG Pipeline from Jetty to Tank Farm Area
- 24-inch M-Xylene Pipeline from Jetty to Tank Farm Area
- 24-inch Motor Spirit Pipeline from Jetty to Tank Farm Area
- Butane vessel at Tank Farm Area (TFA) @ -48°C and 0.14atm pressure
- Propane vessel at TFA @ -48°C and 0.14 atm pressure
- Propylene vessel at TFA @ -48°C and 0.14 atm pressure
- 10-inch LPG pipeline @ 15°C and 12 atm pressure from mixer to TLF area
- 4-inch LPG hose pipe failure at Tank Lorry Filling (TLF) area
- Catastrophic failure of High-Speed Diesel M(U)LA @ 8atm (g) and 50°C

The most credible cases like 5mm, 25mm, 100mm and catastrophic failure for pipelines are considered whereas catastrophic failure for storage tanks are also taken into consideration. Catastrophic failure of marine unloading arm for unloading all materials at jetty is considered for the study.

The various scenario's considered for carrying out the Risk Assessment for the onshore activities at jetty as Catastrophic failure of Butane and Propane M(U)LA; Pipeline from Jetty to Tank Farm Area; LPG pipeline from mixer to TLF Area.

1.6.2 Damage Criteria

The nature of damage and extent of damage resulting from an accidental release of a chemical depends on several factors like nature of material, storage conditions, release conditions, atmospheric conditions etc. The sequence of probable events following the release of a hazardous chemical is schematically shown in Figure 1-2.

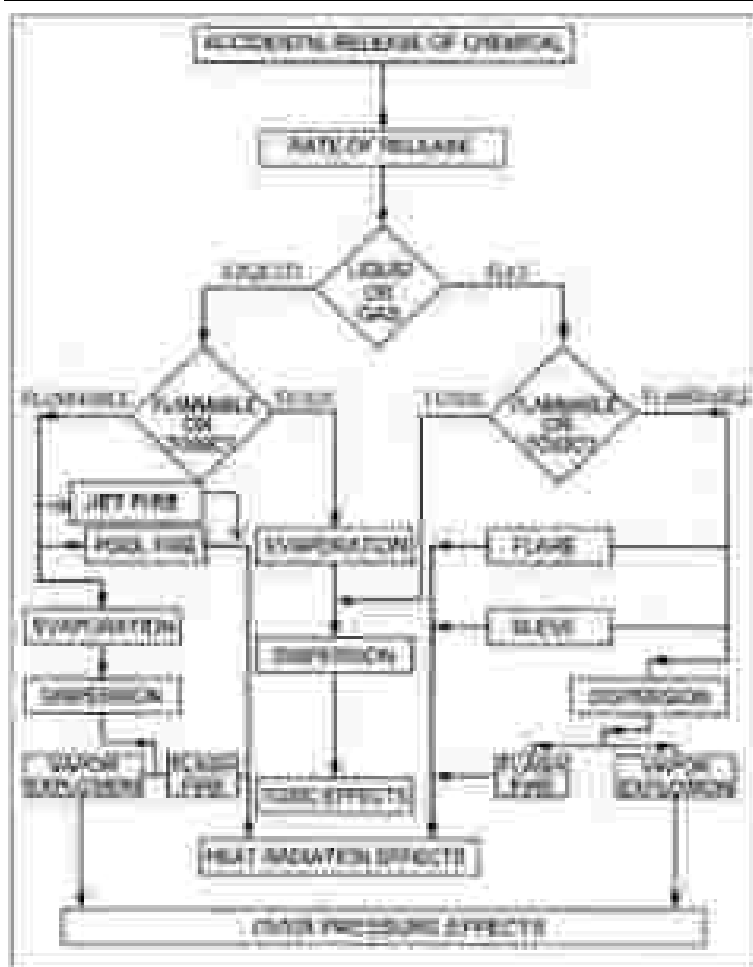


Figure 1-2: Steps in consequence Calculations

The best way of understanding and quantifying the physical effects of any accidental release of chemicals from their normal containment is by means of mathematical modelling. This is achieved by describing the physical situations by mathematical equations for idealized conditions and by making corrections for deviation of the practical situations from ideal conditions.

1.6.3 Failure Frequency

The release scenarios considered earlier can be broadly divided into two categories (i) catastrophic failures which are of low frequency and

(ii) leaks which are of relatively high frequency. Vapor or liquid releases from failure of gasket, seal and rupture in pipelines and vessels fall in second category whereas catastrophic failure of vessels and full-bore rupture of pipelines etc. fall into first category. Typical failure frequencies are given in **Table 1-5**.

Table 1-5: General failure frequencies

Item	Mode of failure	Failure Frequencies
Pressure vessel	Serious leak	$1.0 \times 10^{-5}/\text{yr}$
	Catastrophic	$3 \times 10^{-6}/\text{yr}$
Road Tanker Failure		1.1×10^{-8} per delivery
Process pipe lines		
=50 mm dia	Full bore rupture	$8.8 \times 10^{-7}/\text{m.yr}$

Item	Mode of failure	Failure Frequencies
	Significant leak	$8.8 \times 10^{-6}/\text{m.yr}$
> 50 mm = 150 mm dia	Full bore rupture	$2.6 \times 10^{-7}/\text{m.yr}$
	Significant leak	$6 \times 10^{-5}/\text{m.yr}$
> 150 mm dia	Full bore rupture	$8.8 \times 10^{-8}/\text{m.yr}$
	Significant leak	$6 \times 10^{-6}/\text{m.yr}$
Hoses	Rupture	$3.5 \times 10^{-2}/\text{yr}$
Check valve	Failure on demand	$1 \times 10^{-4}/\text{demand}$
Motor operated valve	Failure on demand	$1 \times 10^{-3}/\text{demand}$
Flange	Leak	$3 \times 10^{-4}/\text{yr}$
Pump	Casing failure	3×10^{-5} per pump/yr
Pump seal single	Leak	5×10^{-4} per pump/yr
Pump seal double	Leak	5×10^{-5} per pump/yr
Process Safety Valve	Lifts heavily	$4 \times 10^{-3}/\text{yr}$
	Blocked	$1 \times 10^{-3}/\text{yr}$
	Lifts lightly	$2 \times 10^{-2}/\text{yr}$
Articulated loading/ unloading arm failure		$3 \times 10^{-8}/\text{hr of operation}$
Full bore vessel connection failure		Failure frequency/ 10^6 years
<25		30
40		10
50		7.5
80		5
100		4
>150		3

Reference source:

- HSE UK- Failure Rate and Event Data for use within Risk Assessments
- Loss Prevention in the Process Industries -Frank P.lees.Vol.2 & 3, 2nd edition
- OGP-Risk Assessment Data Directory
- OGP-Process Release Frequency

These failure rates are, for non- corrosive systems like hydrocarbon industry and well suited for the present case. Due attention is to be given for materials of construction and design conditions. Details of Equipment Failures reasons are given below:

S. No	Reason	%
1.	Defective Pipeline	10
2.	Hose Failure	09
3.	Loading Arm Failure	09
4.	Open Valve	05
5.	Leaking Valve	64
6.	Manifold Failure	03

Source: International Tanker Owners Pollution Federation

1.6.4 Release Models and Source Strength

From the flowchart (Figure 1-2) the first aspect to be considered is modelling the release and source strength of hazardous substances. This depends on the nature of failure of the unit and content of the unit and operating temperature and pressure of the unit. The release may be instantaneous due to total failure of storage unit or continuous due to leakage or rupture of some component of the storage facility. The material discharged may be gas or liquid or the discharge could be manifested through two-phase flow. For cases of outflow where two-phase flow can occur, the calculation possibilities are as follows:

- Liquid outflow
- Vapor outflow
- Gas outflow

The models that are used to calculate the quantity of liquid/vapor released are:

Turbulent free jet: When gas flows out of an opening from a high-pressure container or a pipeline, a free jet, independent of weather conditions can form. If the gas is flammable and a source of ignition is available within the distance for its Lower Flammability Level (LFL) it will result in a flare.

Two-phase outflow: If a liquefied pressurized gas escapes rapidly from a fractured pipeline or vessel, there is a possibility of liquid flashing into vapour because of pressure reduction. This vapour formed influences the amount of two-phase outflow because of two-phase conditions in a pipeline or vessel.

Vapour/liquid outflow: In a vessel when liquid and vapour co- exist, the type of release depends on the position of the leak. Leak in vapour space results in vapour release and leak in liquid position results in liquid release. The rates of discharge for these cases are calculated based on idealised models. Corrections are applied for practical situations.

Evaporation Models: The liquefied materials when released will evaporate and disperse into the atmosphere. The rate of evaporation depends on various factors. The liquefied gas whose atmospheric boiling point is less than the ambient temperature will partly flash into vapor instantaneously taking the required heat of evaporation from the remaining liquid. Cryogenic liquids receive heat from the surface of the land and evaporate. Liquids with boiling points above ambient temperature evaporate only because of the influence of wind. The rate of evaporation depends on the wind speed and size of the pool. The possibility of pumping the spillage back to storage is much higher if the liquid is neither cryogenic nor flashing type, provided it is confined in the bund/dyke of the respective storage tank.

Gas/Vapor Dispersions: Vapor clouds are one of the major sources of worst chemical disasters. These may result from direct release of gas or vapours from flashing liquids or evaporation of spilled liquids. Vapour clouds may give rise to large fires, explosions or toxic effects depending on the nature of the chemical.

Gaussian dispersion models are useful for neutrally buoyant gases with densities equivalent to that of air at the release conditions. For gases/vapours heavier than atmospheric air, Box models are useful. Box models assume that mass transfer occurs by entrainment across the density interface of a cloud with an assumed shape and that internal mixing is fast enough that concentration within the cloud is uniform.

Heat Radiation Models: When flammable liquid is released into atmosphere, and immediate source of ignition is available, it may result in BLEVE, pool fire or flash fire. In the event of delayed ignition, the flammable material release may result in flash fire or vapour cloud explosion. Each of these scenarios is described below in detail.

Pool fires: When a flammable liquid spills, it spreads into a pool. The size of the pool depends on the availability of bund and obstacles. If there are no obstacles or bund, it can spread into a thin film on flat land/floor and upon ignition a pool fire will result. The size of the pool gradually increases with time, but it will reach an equilibrium size shortly after ignition when burning rate matches with the release rate. Since most of the liquid cargos handled at Adani Gangavaram port are liquids at room/operating temperatures (Except LPG/Butane/Propane/ Propylene etc.), pool fires are the most probable scenarios in this case.

‘BLEVE’ and fire balls: A catastrophic failure or total loss of containment (TLOC) of the pressurized liquefied gas vessel can take place for a variety of reasons, including flawed material, fatigue, corrosion, poor manufacture, thermal stresses, pressure stresses and reduction in material strength due to high wall temperatures. Any of these factors could result in a TLOC. However, in most of the accidents, several of these factors combine to cause failure of a vessel leading to a BLEVE. The acronym ‘BLEVE’ stands for Boiling Liquid Expanding Vapour Explosion. Even though BLEVEs were recorded at temperatures far below the atmospheric superheat limit, the superheat in the liquid helps violent or explosive boiling to take place. This incident occurs upon rupture of a vessel containing a liquid with vapour pressure well above atmospheric pressure such as LPG in case of an external fire. Such a rupture can be initiated by several mechanisms.

- Overpressure of a vessel due to overfilling, too small a relief valve and high pipeline pressures.
- Heating of the vapour space of the vessel by an external fire or a flame impingement on a specific spot. Although the relief valve may function according to its set pressure, the tank ruptures because of weakening of steel. This type of BLEVE may occur in a few minutes after the initiation of fire.
- Heating the wetted surface of the vessel through fire underneath. In this case it may take hours to initiate a BLEVE.
- A missile (a portion of a vessel for example) hitting the LPG storage.

According to a recent study the energy necessary for catastrophic failure must come from the vapour and liquid in the tank. The vapour space energy is available immediately on initial failure of the vessel. However, the liquid energy is available only after a phase change, which requires a finite time period. With rapid depressurization, the boiling process is in non-equilibrium and as a result very large liquid superheats are possible. These are strongly related to PRV setting because this setting ultimately determines the liquid temperature. It was reported that if the PRV setting is near or above the superheat limit, then the boiling process is likely to push the event to BLEVE conditions. The chances of BLEVEs caused by rapid failure of a weakened tank may be reduced by making the tanks stronger. The BLEVEs resulting from high energy can be reduced by limiting the liquid temperature by careful selection of PRV settings.

In BLEVE pressure wave effects are of minor importance particularly in small storages like 30T and 150T bullets. The damage is mainly due to heat radiation. The duration of fireball is about 20-50s whereas the metal of the storage vessel and structural

supports can withstand intense heat radiation for much longer duration e.g., flares – 5min, pool fires – 20min, heat radiation level of 37.5 kW/m²–60 min. Hence heat radiation of BLEVE in one of the bullets is very unlikely to lead to BLEVE of the adjoining bullet. However, the fragments of a bullet on BLEVE may lead to BLEVE in the neighbouring bullet. Considering the duration of BLEVE itself and other factors, BLEVE in other adjoining bullets may be regarded as relatively low probability sequential event/events.

Flares: In case of leak of gas from high pressure container, a turbulent free jet results; if a source of ignition is available within its LFL distance, it will result in a jet or flame close to the point of release whose length extends a little beyond LFL distance. It can continue for much longer duration than BLEVE.

Flash fires: Flammable vapour clouds form as a result of release of flammable gas/vapour, flashing liquids or evaporation from boiling liquid pools. These vapours/gas get dispersed into atmosphere forming explosive/ flammable vapour clouds where the concentration will be within the flammable limits. If there is no source of ignition, the cloud gets further diluted and passes away without causing any damage. However, if the mixture in explosive range comes in contact with a source of ignition, it may result in a flash fire or vapour cloud explosion depending upon the level of turbulence. In flash fire the flame front travels through the flammable mixture and stabilizes at the release point resulting in either a pool fire or jet fire. Any person caught in the cloud envelope is likely to suffer fatal burn injuries. Secondary fires may follow if combustible material is present in the cloud envelopes. Further, instrument and power cables may get burnt, but steel structures are not likely to be damaged.

Explosion models: If a volatile flammable material is released, this will disperse into atmosphere. The concentration of the material in the atmosphere is determined using appropriate dispersion models. The cloud within the upper and lower explosion limits is in flammable range. If this cloud comes into contact with ignition source, it may result in a flash fire or vapour cloud explosion depending on the degree of confinement. The overpressure effects resulting from vapour cloud explosion are calculated using TNT equivalence model. Peak over pressures measured from TNT explosion have been used to estimate those generated by unconfined vapour cloud explosions.

Toxic load models: Whenever there is an accidental release of volatile toxic material into atmosphere, it gets dispersed into the atmospheric air. The concentration of the material in space with respect to time is determined using appropriate dispersion models. The combined effect concentration and exposure time are determined using probit function explained in more detail in the next subsection under impact criterion.

The accidental release of hazardous materials leads to subsequent events which actually cause the damage. The damages are caused by

- Heat radiation

- Toxic effects (Not relevant in the present study as no toxic compound is handled)
- Overpressure effects from explosions.

Impact of Thermal Radiation: Damage due to heat radiation to both human beings and process plants are given in **Table 1-6:** .

Table 1-6: Damage due to incident radiation

Radiation level (within the fire)	Damage to Equipment	Damage to People
37.5 kW/m ²	Damage to process equipment	100% lethality in 1 min. 1% lethality in 10 sec.
12.5 kW/m ²	Minimum energy to ignite with a flame melts plastic tubing.	1% lethality in 1min
4.0 kW/m ²	Injury to people	
1.75 kW/m ²	-	Pain threshold reached after 60 seconds.
0.7 kW/m ²	-	Exposed skin reddens and burns on prolonged exposure.

Thermal radiation and the extent of burn injury depend on the time duration of exposure. Exposure time thermal load and lethality are calculated by Probit equation.

$$Y = -36.8 + 2.5 \ln(t I^{4/3})$$

Where

Y is the probit value

t is time in seconds

I is radiation in W/sq. m

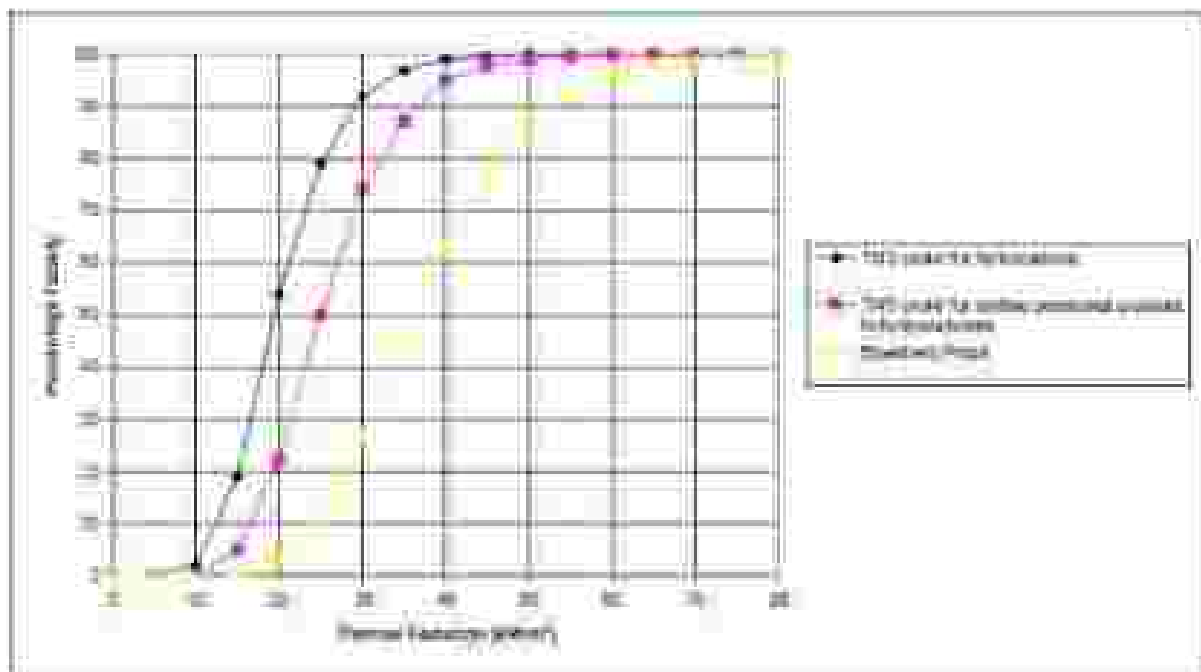


Figure 1-3: Percentage Fatality for 20 Second Exposure based on Thermal Probits

The lethality levels for different thermal loads and different exposure times are given in **Table 1-7.**

Table 1-7: Exposure time, heat radiation and damage levels

Intensity of radiation in kW/m ²	Exposure time in sec	% Lethality	% First degree burns
37.5	28	100	
12.5	120	100	
4.0	550	100	
37.5	4	1	
12.5	15	1	
4.0	66	1	
37.5	7	-	100
12.5	27	-	100
4.0	123	-	100
37.5	1	-	1
12.5	5	-	1
4.0	21	-	1

The above times are for unprotected persons. For protected persons the corresponding times will be 50% to 60% higher.

The probit relation for first degree burns are given by the relation

$$Y = -39.83 + 3.0186 \ln(t I^{4/3})$$

Where Y is the probit value

t is the time in seconds, and I is the radiation in (W/sq. m)

Impact of Overpressure: When a flammable vapour cloud ignites, under certain conditions it may result in deflagration thus causing damage due to over pressure effects. The damage depends on the level of over pressure as indicated in **Table 1-8**.

Table 1-8: Effect of over pressure

Over pressure	Damage	Human Injury
0.3 bar	Heavy structure damage	100% lethality
0.1 bar	Repairable structure damage	50% lethality
0.03 bar	Major glass damage	Threshold lethality
0.01 bar	10% glass damage	Severe lung damage

1.6.5 Software

PHAST 7.2 is a software product designed to provide a total service for chemical process hazard analysis to DNV's customers in industry. PHAST provides the most advanced collection of consequence models for hazard analysis which have been derived from the industry standard risk analysis program PHAST.

PHAST 7.2 is a software product designed to provide a total service for chemical process hazard analysis to DNV's customers in industry. PHAST provides the most advanced collection of consequence models for hazard analysis which have been derived from the industry standard risk analysis program PHAST.

1.6.6 Rule Set and Assumptions

The following assumptions were made during the study to obtain the best consequence analysis results.

- Hole size considered in case of leak from pipeline: The following leak sizes were considered.
- Small release through 5mm equivalent hole for representative hole size upto 20mm.
- Medium release through 25mm hole size, representative of 20- 80mm hole size.
- Large release considered through 100mm hole representing 80-200mm hole size.
- Full bore rupture equivalent to pipeline diameter.
- Apart from above leaks and full-bore rupture from pipelines, scenarios like catastrophic rupture of storage tank is also considered in the present study.
- Release Duration for Loading Arms/ Loading, Storage tanks and Process Equipment

Release duration of 10 seconds is considered for releases from Loading Arms/ hoses on successful ESDV activation. Similarly, release duration of 10 seconds (Based on information provided by Howe Engg.) is considered for releases from pipeline leak, Process Equipment with a comprehensive gas detection system with executive action.

1.6.7 Meteorological Conditions

Evaporation and dispersion of flammable and toxic gases are highly dependent on meteorological conditions like wind speed, direction, stability class etc. Hence proper meteorological information is essential for the estimation of affected zones due to accidental release of chemicals. The climatological data of Visakhapatnam is the nearest observation centre with which we can correlate the wind data near Gangavaram is provided in **Table 1-9**.

Table 1-9: Probability of wind speed (m/s) in different directions at Visakhapatnam (Based on observations from 1991 to 2020)

Month		Percentage No. of days wind from								
		N	NE	E	SE	S	SW	W	NW	Calm
January	I	5	7	5	0	0	2	9	16	56
	II	0	3	45	30	14	7	0	0	1
February	I	3	5	3	1	2	6	16	13	51
	II	0	0	20	22	30	25	2	0	1
March	I	1	1	1	0	3	36	27	7	24
	II	0	1	4	9	40	40	4	1	1
April	I	1	1	0	1	5	51	30	5	6
	II	0	1	1	4	32	51	9	1	1
May	I	1	1	2	2	6	51	28	5	4
	II	1	2	4	4	30	44	10	4	1
June	I	1	1	2	0	3	47	34	6	6
	II	1	1	3	3	20	49	18	3	2
July	I	1	0	0	0	3	46	39	4	7
	II	1	1	2	2	12	49	26	4	3
August	I	1	1	1	0	2	40	34	8	13
	II	2	2	3	3	11	41	25	7	6

Month		Percentage No. of days wind from								
		N	NE	E	SE	S	SW	W	NW	Calm
September	I	3	4	1	1	0	26	31	11	23
	II	2	3	8	7	14	35	17	7	7
October	I	1	23	9	3	0	4	15	18	16
	II	2	12	37	20	7	9	4	2	6
November	I	1	28	13	2	0	1	7	15	16
	II	8	14	56	21	2	1	0	0	5
December	I	1	19	10	1	0	1	9	20	28
	II	2	8	61	18	5	1	1	0	6
Annual Total Mean	I	5	7	3	1	2	29	25	10	18
	II	1	4	20	12	18	30	10	2	3

Source: IMD

Table 1-10: Meteorological Data at Visakhapatnam (Based on observations from 1991 to 2020)

Month		No. of days with wind speed (km/hr)			
		62 or more	20-61	1-19	0
January	I	0	0	22	9
	II	0	6	25	0
February	I	0	0	20	8
	II	0	5	23	0
March	I	0	1	25	5
	II	0	7	24	0
April	I	0	7	21	2
	II	0	12	18	0
May	I	0	8	22	1
	II	0	11	20	0
June	I	0	8	20	2
	II	0	9	20	1
July	I	0	8	21	2
	II	0	11	19	1
August	I	0	6	22	3
	II	0	8	21	2
September	I	0	2	23	5
	II	0	4	24	2
October	I	0	2	26	3
	II	0	4	25	2
November	I	0	2	25	3
	II	0	5	24	1
December	I	0	1	25	5
	II	0	4	25	2
Annual Total Mean	I	0	47	272	46
	II	0	86	269	10

Source: IMD

Most probable wind speed = 1 - 6 m/sec and wind speed from 1 to 6 m/s are considered for the present study.

Most probable wind directions are from Southwest to Northeast and West to East (based on Visakhapatnam meteorological station report from 1991-2020 provided).

1.6.8 Stability Class

The dispersion of materials into atmosphere in addition to wind speed and direction is influenced by atmospheric stability. The term stability refers to the turbulent exchange processes between layer of air stacked one over the above in the atmosphere. These exchanges are suppressed under stable conditions and enhanced when the atmosphere is unstable. With increasing wind speed the plume becomes more elongated or slender, and more rapidly diluted irrespective of the nature of the atmospheric turbulence. But the wind also influences the turbulence. At wind speeds in excess of 6 m/s, the stability is determined by the wind.

The interaction of the wind with vegetation, buildings and topography, also gives rise to turbulent exchange processes, which can be taken into account only crudely in any theory.

The atmospheric conditions of interest are divided into five categories, A, B, C, D, E and F where A is the most in-stable (strong thermal convection) D represents the neutral condition (purely mechanical turbulence) and F the stable stratified case where the mechanical turbulence is strongly damped. Neutral conditions correspond to a vertical temperature gradient of about 10C per 100m.

For the present study we have considered C, D, E, and F (more stable class) for damage distance calculations with wind speeds of 1, 2, 3, 4, 5 and 6m/s.

1.6.9 Risk Assessment

The materials that are proposed to be stored in the tank farm area and handled at Adani Gangavaram port as a part of project are Butane, Propane, Propylene, LPG, M—Xylene, Motor Spirit, few class A, B and C petroleum and oil products, Hazardous and Non-Hazardous chemicals and other liquid cargos. These are flammable liquids and any leakage / spillage results in pool fires. The consequence analysis is carried out for all the identified credible scenarios. The results of consequence analysis for all the scenarios are presented in the **Table 1-11 to Table 1-18**. Since the other chemicals/materials are not flammable in nature and do not pose any threat of explosion, it is recommended to follow Material Safety Data Sheets (MSDS) while handling these materials.

1.6.9.1 LFL distances

The LFL distances are distances up to which, LFL concentration exists. LFL concentration is the minimum concentration of the flammable chemical in air at which, ignition occurs upon contact with any ignition source.

1.6.9.2 Heat Radiation Effects

Heat Radiation is the result of fire or explosion occurring upon the ignition of continuous or instantaneous release of flammable materials. Heat radiation effects cause damage to people and property. In the present study as some of the cargos are flammable liquids; heat radiation effects are due to pool fire and jet fires.

In case of pool fire and jet fire, the damage to people and property depends upon the extent of heat radiation per unit area emitted from certain fire. The heat radiation 37.5kW/m^2 is considered to be lethal and anyone within this heat radiation zone is likely to die. The persons within 12.5kW/m^2 heat radiation are likely to be injured severely whereas heat radiation 4.0kW/m^2 will cause minor injuries. For the present study, the heat radiation damage distances are presented in **Table 1-11**, **Table 1-14**, **Table 1-15** and **Table 1-17**.

1.6.9.3 Over Pressure Effects

Over pressure effects are due to the vapour cloud explosion. If the leaked flammable chemicals or petroleum products are not ignited immediately, the vapours generated from the pool will form an explosive vapour cloud with air and this could upon ignition results in vapour cloud explosion and over pressure effects. The over pressure damage distances are presented in **Table 1-12**, **Table 1-14**, **Table 1-16** and **Table 1-18**.

1.6.9.4 Population Data

The distribution of people at the port and surrounding area is given as follows. Total number of people within the area after the completion of the port operation will be around 25 in any shift. The total population will be affected only in the case of major disaster based on the consequence analysis carried out and results obtained.

1.6.9.5 Ignition Source Data

The port with unloading facilities, transfer pipelines and storage tank area are to be maintained free of ignition sources and provided with flame-proof electrical equipment's. The entire area outside the battery limit of the complex has been considered as potential source of ignition as people living in the nearby villages cannot be restricted for igniting any fire during day or nighttime. By adhering to strict control mechanism of leak detection and emergency shutdown system, quantity of material released can be controlled and major disaster can be avoided.

Table 1-11: Heat Radiation Damage Distances – Marine Loading Arms at Jetty

S. No.	Scenario Description	Heat Radiation Damage Distance (in meter)			LFL Distance (in meter)					
		4.0 kW/m ²	12.5 kW/m ²	37.5 kW/m ²	F1	F2	E3	D4	D5	C/D6
	Catastrophic failure of Marine Loading/unloading Arm (MLA)									
1	Butane @ 12 kg/cm² and -48°C	717	538	432	204	181	202	251	265	308
2	Propane @ 12 kg/cm ² and -48°C	687	522	421	189	200	227	284	305	357
3	Propylene @ 12 kg/cm ² and -48°C	694	529	427	183	190	214	270	285	330
4	LPG @ 12 kg/cm ² and -48°C	702	528	424	203	194	217	272	287	333
5	Meta Xylene @ 12 kg/cm ² and 20°C	574	430	344	172	195	177	157	158	154
6	Motor Spirit @ 12kg/cm ² and 20°C	395	293	233	148	150	158	196	205	233
7	Diesel @ 8 atm (g) and 50°C	625	415	218	182	197	178	195	211	208

Table 1-12: Overpressure Damage Distances - Marine Loading Arms at Jetty

S. No.	Scenario Description	Overpressure Distance (in meters)								
		F1/F2			E3/D4			D5/(C/D)6		
		0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar
	Catastrophic failure of Marine Loading/unloading Arm (MLA)									
1	Butane @ 12 kg/cm ² and -48°C	413/436	117/186	58/93	448/459	191/196	95/98	471/416	201/177	100/89
2	Propane @ 12 kg/cm² and -48°C	478/431	204/184	102/92	532/579	218/237	109/119	573/598	244/175	122/87
3	Propylene @ 12 kg/cm ² and -48°C	438/473	187/202	93/101	557/488	238/198	119/99	512/541	218/231	109/115
4	LPG @ 12 kg/cm ² and -48°C	522/471	223/201	111/100	501/450	214/183	107/92	533/533	227/228	114/114
5	Meta Xylene @ 12 kg/cm ² and 20°C	119/120	51/51	26/26	123/125	52/53	26/27	126/117	54/50	27/25
6	Diesel @ 8 atm (g) and 50°C	350/322	342/320	337/318	301/320	285/290	272/280	260/274	195/205	140/184

Table 1-13: Heat Radiation Damage Distances – Pipelines from Jetty to Storage Tanks

S. No.	Scenario Description	Heat Radiation Damage Distance (in meter)			LFL Distance (in meter)					
		4.0 kW/m ²	12.5 kW/m ²	37.5 kW/m ²	F1	F2	E3	D4	D5	(C/D)6
	Pipeline from Jetty to Storage Tanks									
A	16 inch Butane Pipeline, 12 kg/cm² and -48°C									
1	5mm leak in the pipeline	23	18	15	40	33	26	12	NR	NR
2	25mm Leak in the Pipeline	98	75	60	401	243	193	157	143	131
3	100mm Leak in Pipeline	336	254	205	501	563	721	764	606	508
4	Butane Line Rupture	416	262	163	616	436	301	304	280	253
B	16 inch Propane Pipeline, 12 kg/cm² and -48°C									

S. No.	Scenario Description	Heat Radiation Damage Distance (in meter)			LFL Distance (in meter)					
Pipeline from Jetty to Storage Tanks		4.0 kW/m ²	12.5 kW/m ²	37.5 kW/m ²	F1	F2	E3	D4	D5	(C/D)6
1	5mm leak in the pipeline	22	17	15	37	30	24	NR	NR	NR
2	25mm Leak in the Pipeline	95	73	59	355	227	184	153	139	127
3	100mm Leak in Pipeline	324	248	201	543	609	764	783	742	509
4	Propane Line Rupture	360	227	138	651	501	432	390	368	348
C	16 inch Propylene Pipeline, 12 kg/cm ² and -48°C									
1	5mm leak in the pipeline	23	18	15	39	31	25	10	NR	NR
2	25mm Leak in the Pipeline	95	74	60	369	233	190	157	142	130
3	100mm Leak in Pipeline	326	250	202	517	575	753	808	765	519
4	Propylene Line Rupture	369	233	155	610	476	415	372	354	335
D	16 inch LPG Pipeline, 12 kg/cm ² and -48°C									
1	5mm leak in the pipeline	23	18	15	39	32	25	11	NR	NR
2	25mm Leak in the Pipeline	96	73	59	388	238	190	156	141	130
3	100mm Leak in Pipeline	329	250	202	491	540	724	811	767	519
4	LPG Line Rupture	358	226	140	604	453	343	328	305	281
E	24 inch M-Xylene Pipeline, 12 kg/cm ² and 20°C									
1	5mm leak in the pipeline	51	41	27	15	15	15	NR	NR	NR
2	25mm Leak in the Pipeline	174	85	48	46	55	60	59	58	58
3	100mm Leak in Pipeline	288	148	97	81	82	80	83	88	93
4	M-Xylene Line Rupture	251	107	NR	16	17	17	22	25	29
F	24 inch Motor Spirit pipeline, 12 kg/cm ² and 20°C									
1	5mm leak in the pipeline	22	17	14	14	12	12	11	11	10
2	25mm Leak in the Pipeline	144	74	57	109	131	121	120	110	105
3	100mm Leak in Pipeline	295	164	131	136	149	179	205	217	213
4	Motor Spirit Line Rupture	261	109	-	65	57	71	82	89	95

Table 1-14: Overpressure Damage Distances – Pipelines from Jetty to Storage Tanks (Tank Farm Area)

S.No	Scenario Description	Overpressure Distance (in meters)								
		F1/F2			E3/D4			D5/(C/D)6		
		0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar
A	16-inch Butane Pipeline, 12 kg/cm ² and -48°C									
1	5mm Leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-

S.No	Scenario Description	Overpressure Distance (in meters)								
		F1/F2			E3/D4			D5/(C/D)6		
		0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar
2	25mm Leak in the Pipeline	384/ 419	134/ 147	62/ 68	329/281	115/98	53/45	265/243	93/84	43/39
3	100mm Leak in Pipeline	1197/1259	338/417	133/192	1216/1122	403/392	186/171	1045/984	365/344	168/159
4	Catastrophic Rupture	1405/1016	491/321	226/94	1151/962	403/336	185/155	874/682	306/157	141/72
B	16" Propane Pipeline, 12 kg/cm² and -48°C									
1	5mm Leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	25mm Leak in the Pipeline	356/385	124/135	57/62	310/267	108/93	50/43	252/231	88/81	41/37
3	100mm Leak in Pipeline	1324/1413	446/372	205/159	1284/1134	332/386	70/146	1078/982	377/343	174/158
4	Catastrophic Rupture	1683/1484	566/519	260/239	1220/1098	427/353	196/162	1052/935	340/318	157/146
C	16" Propylene Pipeline, 12 kg/cm² and -48°C									
1	5mm Leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	25mm Leak in the Pipeline	371/402	130/141	60/65	320/275	112/96	52/44	259/238	91/84	42/39
3	100mm Leak in Pipeline	1355/1419	450/487	207/224	1323/1163	329/315	69/106	1102/1003	385/351	158/162
4	Catastrophic Rupture	1617/1394	516/487	238/225	1102/1121	385/310	177/120	1057/912	292/274	124/126
D	16" LPG Pipeline, 12 kg/cm² and -48°C									
1	5mm Leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	25mm Leak in the Pipeline	373/410	131/143	60/66	324/277	113/97	52/45	261/239	91/84	42/39
3	100mm Leak in Pipeline	1281/1343	374/442	153/203	1296/1165	423/307	195/55	1101/1013	385/354	162/163
4	Catastrophic Rupture	1466/1094	482/383	222/176	885/978	310/347	142/158	875/779	306/263	141/121
E	24 inch M-Xylene Pipeline, 12 kg/cm² and 20°C									

S.No	Scenario Description	Overpressure Distance (in meters)								
		F1/F2			E3/D4			D5/(C/D)6		
		0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar	0.03 Bar	0.1 Bar	0.3 Bar
1	5mm Leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	25mm Leak in the Pipeline	116/126	41/44	19/20	133/129	47/45	21/21	138/140	48/49	22/23
3	100mm Leak in Pipeline	112/107	39/37	18/17	146/144	51/50	23/23	132/178	46/62	71/29
4	Catastrophic Rupture	90/93	31/33	14/15	190/89	67/31	31/14	83/73	29/25	13/12
F	24 inch Motor Spirit Pipeline, 12 kg/cm² and 20°C									
1	5mm Leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	25mm Leak in the Pipeline	181/203	63/71	29/33	206/189	72/66	33/30	202/198	71/69	33/32
3	100mm Leak in Pipeline	227/233	79/82	37/38	247/277	86/97	40/45	298/298	104/104	48/48
4	Catastrophic Rupture	181/176	53/61	24/28	193/232	67/81	31/37	210/260	73/91	21/24

Table 1-15: Heat Radiation Damage Distances (HRDD) – Tank Farm Area (TFA)

S.No.	Scenario Description	Heat Flux Damage Distance (in meter)			LFL Distance (in meter)					
		4.0 kW/m ²	12.5 kW/m ²	37.5 kW/m ²	F1	F2	E3	D4	D5	C/D6
A	Butane Storage Tank at Tank Farm Area (TFA) @ -48°C and 0.14 bar (g) pressure									
1	Catastrophic rupture of vessel	2916	1813	1121	7637	5795	3927	3544	3143	2750
B	Propane Storage Tank at TFA @ -48°C and 0.14bar (g) pressure									
1	Catastrophic rupture of vessel	2515	1627	990	7067	5540	5444	3733	3295	3106
C	Propylene Storage Tank at TFA @ -48°C and 0.14bar (g) pressure									
1	Catastrophic rupture of vessel	2990	1919	1310	6974	5518	5493	3679	3272	3096

Table 1-16: Overpressure Damage Distances (OPDD) – Tank Farm Area (TFA)

S.No.	Scenario Description	Overpressure Distance (in meters)								
		F1/F2			E3/D4			D5/(C/D)6		
		0.03 bar	0.1 bar	0.3 bar	0.03 bar	0.1 bar	0.3 bar	0.03 bar	0.1 bar	0.3 bar
A	Butane Storage Tank at Tank Farm Area (TFA) @ -48°C and 0.14 bar (g) pressure									
1	Catastrophic rupture of vessel	12170/11730	4257/3782	1960/1741	8611/10040	3010/3239	1386/1088	9067/7752	3007/2499	1126/1151
B	Propane Storage Tank at TFA @ -48°C and -48°C and 0.14 bar (g) pressure									
1	Catastrophic rupture of vessel	12400/11600	4335/4055	1996/1867	11910/10410	3999/3330	1841/1386	9649/9136	3203/3068	1331/1197
C	Propylene Storage Tank at TFA @ -48°C and -48°C and 0.14 bar (g) pressure									
1	Catastrophic rupture of vessel	12500/12370	4372/3997	2013/1840	12140/10320	4145/3438	1852/1324	9791/9210	3277/3051	1258/1174

Table 1-17: Heat Radiation Damage Distances (HRDD) – Pipeline from LPG mixing unit to LPG Loading area (TLF)

S. No.	Scenario Description	Heat Flux Damage Distance (in meter)			LFL Distance (in meter)					
		4 kW/m ²	12.5 kW/m ²	37.5 kW/m ²	F1	F2	E3	D4	D5	C/D6
A	10inch LPG pipeline from mixing unit to TLF area @ 20°C and 12atm pressure									
1	5mm leak in the pipeline	20	16	13	20	17	NR	NR	NR	NR
2	25mm Leak in the Pipeline	87	67	55	143	161	154	146	134	124
3	100mm Leak in the Pipeline	301	230	188	495	588	671	641	564	523
4	Catastrophic rupture of pipeline	4054	2379	1380	9206	7217	6734	5648	4650	4037
5	4inch LPG hose failure at TLF	244	186	152	119	122	148	195	209	239

Table 1-18: Overpressure Damage Distances (OPDD) – Pipeline from LPG mixing unit to LPG Loading area (TLF)

S. No.	Scenario Description	Overpressure Distance (in meters)								
		F1/F2			E3/D4			D5/(C/D)6		
		0.03 bar	0.1 bar	0.3 bar	0.03 bar	0.1 bar	0.3 bar	0.03 bar	0.1 bar	0.3 bar
A	10inch LPG pipeline from mixing unit to TLF area @ 15°C and 12.3atm pressure									
1	5mm leak in the pipeline	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
2	25mm Leak in the Pipeline	184/183	78/78	39/39	167/155	71/66	36/33	153/148	65/63	33/32
3	100mm Leak in the Pipeline	738/744	315/317	157/158	705/679	301/290	150/145	680/658	290/281	145/140
4	Catastrophic rupture of pipeline	11960/11210	4840/4781	2417/2131	8685/8025	2834/3422	1404/1709	7226/7498	3082/2958	1539/1477
5	4inch LPG hose failure	326/322	139/137	69/69	309/278	132/119	66/59	276/258	108/110	54/55

1.6.9.6 Damage Contour Mapping

Damage contouring is the representation of damage distances of hazardous scenarios at identified locations on plot plan. Damage contours are drawn for the most credible scenarios as well as for such scenarios which can pose maximum damage to the site and its surrounding area in any study.

However, handling and storage of liquid cargo/chemicals/gas/cryogenics etc., will depend on the business requirement as well as readiness of the infrastructure therefore Risk Assessment should be carried out after each modification in process and location change for handling and storage for a particular cargo. This will enable Adani Gangavaram port Limited (AGPL) to obtain required approvals from competent Authority to facilitate the specific operation.

In the present study, the damage contours are drawn for the following scenarios:

Heat Radiation:

- i. Catastrophic failure of Butane Marine Unloading Arm at Jetty
- ii. 25mm leak of 24inch Motor Spirit pipeline from Jetty to Tank Farm Area
- iii. 25mm leak of 10inch LPG pipeline from mixer to TLF area
- iv. Catastrophic failure of 4inch LPG hose pipe at TLF gantry

Vapour Cloud Explosion (Over pressure damage distances):

- v. Catastrophic failure of Propane Marine Unloading Arm at Jetty
- vi. 25mm leak of 16inch Butane pipeline from Jetty to Tank Farm Area
- vii. Catastrophic failure of 16inch Propane pipeline from Jetty to Tank Farm Area
- viii. 25mm leak of 10inch LPG pipeline from mixer to TLF area
- ix. 4inch hose failure at TLF gantry area

1.6.9.7 Pool fires/Jet fires

The scenario of catastrophic failures of marine unloading arms, pipelines leakage and leaks and catastrophic failure from storage vessels were considered to identify the impact of heat radiation and explosion over pressure on the other units, facility and surrounding area including people living in the vicinity. Damage contours for some of the scenarios like failure of marine unloading arm, 18 inch pipeline rupture and 10minute release from tank not considered as credible were drawn to find out the maximum distances.

In case of catastrophic failure of marine unloading arm for Butane operated at 12atm pressure and -48 degree centigrade, the area getting affected due to 37.5kW/m² will be around 432m in diameter. This scenario will affect the berths, immediate backup area and other facilities in the radius of 216m. The damage contours are shown in **Figure RD001**.

Leak of size 25mm from 24inch Motor Spirit pipeline, the area getting affected due to 37.5kW/m² will be around 57m in diameter. This scenario will affect people working in a diameter of 144m. The damage contours for the scenario is represented in **Figure RD003**

In case of leakage of 25mm from 10" LPG pipeline, the material will spread over the land covering an area in 55m and 67m radius due to 37.5kW/m² and 12.5 kW/m² heat radiations. The damage contours are shown in **Figure RD006**.

The heat radiation damage distance (HRDD) in case of 4inch LPG hose failure at tank lorry filling area, will extend 152m due to 37.5kW/m² heat radiation. The damage contours are shown in **Figure RD007**.

Vapour Cloud Explosion (Overpressure)

The overpressure generates due to explosions in a facility. Some of the scenarios which are considered for heat radiation scenarios were considered for overpressure also and the contours are drawn.

In case of catastrophic failure of marine unloading arm for Propane operated at 12atm (g) pressure and -48 degree centigrade, the over pressure distances are reaching up to 122m diameter for a value of 0.3bar. Since the loading arm failure at jetty, the ships and the working personnel falling in the zone at the jetty will be affected. The damage contours are shown in **Figure RD002**. This scenario will lead to domino effect. in case something comes into its damage zone.

In case of leakage of 25mm from 16" Butane pipeline, the damage will spread over the land covering an area in 681m and 147 m in diameter due to 0.3 bar and 0.03 bar over pressure. The damage contours are shown in **Figure RD004**.

The over pressure damage distance (OPDD) in case of catastrophic failure of 16inch Propane pipeline will extend 260m in diameter due to 0.3 bar over pressure. The damage contours are shown in **Figure RD005**.

In the case of overpressure effect of 25mm leak in the LPG pipeline traversing from LPG mixing unit to LPG tanker loading area covers a damage distance of 39 m to 184 m and damage contours are shown in **Figure RD008**.

Catastrophic failure of 4inch LPG hose at TLF gantry area, the over pressure damage distances are reaching up to 69m in diameter for a value of 0.3bar. Since the leakage is at TLF area, the other tankers under loading operations will be affected heavily. The damage contours are shown in **Figure RD009**.

Even though, the over pressure distances are presented, it is to be observed that the chances of vapor cloud explosion in case of flammable liquids are minimum, whereas pool fire occurrence is more likely. The proper action like fire water spray along with aqueous film forming foam (AFFF) during any emergency by the personnel employed at the facility helps in reducing / mitigating / escalation of the event.

1.6.9.8 Domino Effects

It is observed from the damage contours presented in above sections shows that very few scenarios are affecting the other units in the facility. Thermal radiation and overpressure produced during an incident such as heavy leakage and rupture of a pipeline containing flammable material can cause severe damage to adjacent

pipelines and storage tanks in the tank farm area leading to another tank on fire and explosion one by one i.e., may initiate a secondary incident in a chain reaction. This phenomenon is called the 'domino effect', 'cascading effect', or 'chain of accidents'. The extent of damage depends on radiation or overpressure intensity, the duration of exposure, the type of material, response of protection (e.g., water deluge) systems - automatic and manual etc. Practical 'rules of thumb' found in literature, provide values of thermal radiation or overpressure corresponding to a given degree of damage. American Institute of Chemical Engineers (AIChE) considers heat flux of 37.5kW/m^2 as the limit for severe damage to process equipment, while The Netherlands Organization for Applied Scientific Research (TNO) identifies critical radiation intensities of 100kW/m^2 and 25kW/m^2 , for rupture and deformation of structural elements, respectively. In both cases, the duration of exposure is 15-20 minutes. Concerning explosion consequences, TNO suggests the overpressures of 0.5bar - 1bar can cause cylindrical tank displacement or failure of connecting pipes, and overpressures above 1bar can cause failure of spherical tank supports.

Cascade analysis is carried out for all the probable scenarios to know the larger consequences due to these effects. Examining the scenarios with the above criteria, it is observed that most of the incidents can cause cascade effects if their affected damage distance are more than 50meters especially in the case of overpressure effects. The damage distance of less than 50m near jetty, tank farm area and leakage from pipelines will also create domino effect due to overpressure effects leading to damage of ships, facilities like control room and other pipelines.

Table 1-19: Scenarios that can cause Cascade Effects

S. No.	Scenario Description & location	Damage distances	Affected Areas
1	Catastrophic failure of marine unloading arm while unloading Butane @ 12atm and -48°C - Heat radiation effects and Overpressure effects.	37.5kW/m^2 : 432m 0.3bar*: 98m	Working personnel, control room at jetty, unloading facilities and ships at nearby jetty
2	Catastrophic failure of marine unloading arm while unloading Propylene @ 12atm and -48°C - Heat radiation effects and Overpressure effects.	37.5kW/m^2 : 427m 0.3bar*: 122m	Working personnel, control room at jetty, unloading facilities and ships at nearby jetty
3	100mm leak of 16inch Butane pipeline from jetty to tank farm area – Heat radiation effects and Overpressure effects.	37.5kW/m^2 : 205m 0.3bar*: 68m	Working personnel, adjacent pipelines and other facilities in the vicinity
4	100mm leak of 16inch Propylene pipeline from jetty to tank farm area – Heat radiation effects and Overpressure effects.	37.5kW/m^2 : 202m 0.3bar*: 224m	Working personnel, adjacent pipelines and other facilities in the vicinity,
5	100mm leak of 16inch LPG pipeline from jetty to tank farm area – Overpressure effects.	0.3bar*: 202m	Working personnel, adjacent pipelines and other facilities in the vicinity,

S. No.	Scenario Description & location	Damage distances	Affected Areas
6	Rupture of 10inch LPG pipeline from mixer to Tanker Loading Facility - Heat radiation and Over pressure effects.	37.5kW/m ² : 1380m 0.3bar: 2131m	Mixing unit and Tanker loading facility if rupture occurs near the facility
7	4inch LPG hose failure at Tank Lorry filling area	37.5kW/m ² : 152m 0.3bar: 69m	The entire tank lorry filling area will be impacted due to this scenario

* - Only when the radiation sustains for more than 15-20minutes

The distance between the tanks, trained personnel and the fire-fighting facilities available as per laid down standards at the site plays a major role in averting any domino effect. The tanks shall be installed with fire water sprinkler system to provide cooling effect during fire. Fire hydrants / monitors with remote operation mode at appropriate locations will help in restricting the spread of fire to cover the entire area and prevent the occurrence of the cascade/domino effects. Advanced fire protection systems and techniques should be adopted and installed at the site.

1.6.10 Discussions and Recommendations

1.6.10.1 Discussion

Adani Gangavaram port Limited (AGPL) is proposing to import, store and export liquid cargos as per Section 1.5.3. Proposed Liquid cargo/POL storage tanks will be provided with sufficient dyke capacity. All the credible scenarios such as 5mm, 25mm 100mm and full-bore rupture of transfer lines have been considered. In case of any major pipeline leak / rupture the control valves at ship or near the storage tank will stop the supply of petroleum product or chemical. Most credible scenarios have been considered for storage tanks in the tank farm area are 10 minutes discharge from storage tanks and catastrophic failure.

- The propane, butane and propylene will be stored in Double walled Full Containment Refrigerated Tanks.
- The maximum heat radiation damage distances due to pool fire / jet fire due to Catastrophic failure of Propylene storage tank for 37.5kW/m² intensity is about 1310m and for 12.5kW/m² extends up to 1919m not confined to the facility boundary. The other material damage distances are much lower than the Propylene. The impact of the heat radiation will be on port personnel and property. The radiation and overpressure effects may impact outside population. However, frequency of catastrophic failure of propylene or any other tank is very less.
- The maximum overpressure damage distance for catastrophic failure of propylene storage tank for 0.3 bar overpressure extends up to 2013 km and that for 0.1bar up to 4372m.
- The catastrophic failure of marine unloading arm for all the materials at jetty has been considered as the ultimate scenario affecting the plant personnel, ship and the facility.
- In the event of catastrophic failure of marine unloading arm for transferring Butane, the damage distance due to pool fire / jet fire for 37.5kW/m² intensity is about 432m and for 12.5kW/m² extends up to 538m. Similarly for Propylene ULA failure, the damage distance due to pool fire / jet fire for 37.5kW/m²

intensity are about 427m and for 12.5kW/m² extend up to 529m. For other materials, the damage distances obtained for heat radiation are lower than these two materials.

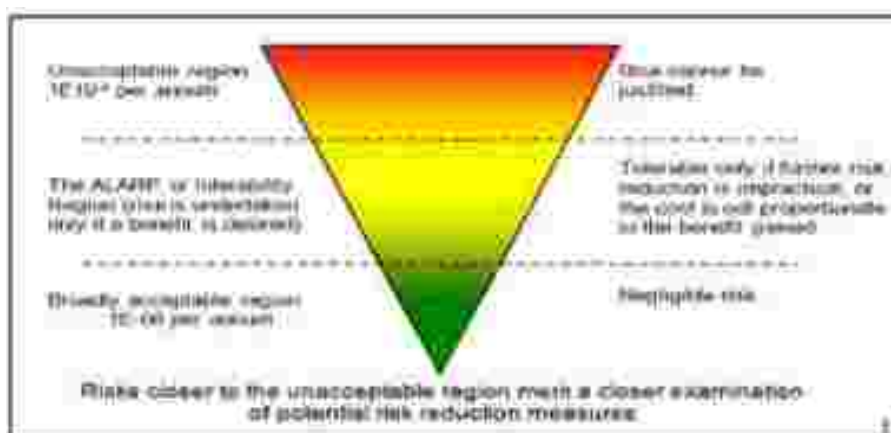
- 0.3 bar overpressure for Propane extends up to 122m and that for 0.1bar up to 244m.

The damage distances for the scenarios like catastrophic failure of storage tank, 100 mm leak and catastrophic failure are higher than those in case of 5mm and 25mm leakage of transfer lines. The scenario i.e., storage tank failure and pipeline rupture are not much credible as per the historical records obtained from oil and gas processing reports. The failure frequency of these scenarios is 5×10^{-6} per year. Whereas scenarios like 5mm, 25mm and 100mm leakage scenarios and leakage from flanges/ gasket and pinhole on storage tanks are much more credible. Regular maintenance, NDT testing, inspection and intelligent pigging of pipelines will help in avoiding any leakage from the pipelines.

The damage distances for some of the credible scenarios may lead to domino effect only when the heat sustains for a longer duration of time and hence there should be necessary arrangement of fire-fighting facility as per various national and international codes for the facility to avoid any major incident.

1.6.10.2 Societal Risk

The societal risk involves the concept of the summation of risk from events involving many fatalities within specific population groups. This definition is focused on the risk to the society rather than to a specific individual and is termed 'Societal Risk'. In relation to the process operations, we can identify specific groups of people who work on or live close to the installation i.e., people in villages/cities living or working close to the plant. The values of maximum tolerable risk due to existing hazardous industry for individual risk to plant personnel and general public in comparison with the specified risk criteria for the plant personnel as per HSE, UK should be in the range of 10^{-4} and negligible risk for the general public is 10^{-6} per annum basis. To achieve the above risk acceptance criteria, ALARP principle was followed while suggesting risk reducing recommendations.



On the basis of the input conditions such as operating parameters, climatological conditions, etc., the risk posed by the Loss of Containment (LOC) scenarios covered under this study, it is observed that the individual risk and societal risk per annum is

found to fall above the ALARP level. However, by following the safety measures and other recommendations, we can bring the risk levels to ALARP level.

The natural presence of Muchukonda and Yarada hill in the nearby area close to jetty and tank farm area will help in reducing the impact of heat flux and overpressure effect on the people living in Gangavaram village. Societal risk will reduce to ALARP levels due to the presence of the hills.

The heat radiation damage distance (HRDD) in case of 10 minutes release from butane vessel is drawn by considering the hills as barrier and shown in **Figure 1-4**. Similarly, the damage expected due to other scenarios extending upto hills will be less.



Figure 1-4: Risk contours by considering hills as barrier

1.6.10.3 Recommendations

The following are the recommendations to minimize the consequence effects due to any accident which takes place and for the safe storage and handling of the hazardous products at the site.

1. It is recommended to follow all the applicable Indian laws such as MSIHC Rules; CA (EPPR) Rules; PLI Act & Rules; Explosives Act & Rules; SMPV Rules; Factories Act & Rules; ODS (R&C) Rules; Petroleum Act & Rules; Port Act & Rules; Dock Act & Rules.
2. Fire-fighting equipment shall be provided as per OISD 117, 156 & 144 and API RP 2021/API RP 2030.

3. Storage tanks, pipelines and other components should meet IS/OISD/API/prevaling International standards for structural design integrity and operational performance to avoid catastrophic failures during normal operation and during exposure to natural hazards and to prevent fires and explosions. Applicable standards typically include provision for overfilling protection, metering and flow control, fire protection (including flame arresting devices), and grounding (to prevent electrostatic charge). Overfill protection equipment include level gauges, alarms, and automatic cut-off systems.
4. It is recommended to install Emergency Shutdown Device (ESD)s on all the pipelines at safe distance from jetty so that the facility downstream is isolated in case of an emergency. The consequence of an event is greatly reduced by installing ESDs and thereby reducing the risk to bring it to ALARP.
5. It is recommended to develop a detailed disaster management plan prepared for the site with firefighting facilities available and to be provided in future to handle any untoward incident. Organogram with actions and duties assigned/actions to be taken by the responsible authorities should be listed in the document. It should be revised for any modifications carried out at the installation.
6. For any changes/modifications in future for the pipelines/storage tanks etc, it is strongly recommended to conduct the Risk Assessment study for the final size of the pipeline, storage tanks etc. This will help in preparing a more realistic disaster management plan to avoid occurrence of any major incident. The existing DMP shall be amended on time to time based on the actual implementation plan by incorporating the findings as per the revised risk assessment.
7. Loading / unloading activities should be conducted by properly trained personnel according to pre-established formal procedure to prevent accidental releases and fire / explosion hazards. Procedures should include all aspects of the delivery or loading operation from arrival to departure, connection of grounding system, verification of proper connection and disconnection of marine loading arm, adherence to no-smoking and no-naked light policies for visiting personnel.
8. Quick isolation of mechanical loading arm in case of spillage from the ship/tanker or pipelines near the jetty to avoid personnel and property loss.
9. Floating roof tanks emit VOCs through both storage and working losses. To minimize evaporative losses, both external and internal floating roof systems use decks, fittings, and rim seals to allow the roof to adjust in relation to the liquid level in the tank. Evaporative losses occur through the rim seals and deck fittings and residual liquid on the tank walls that is exposed during liquid withdrawal activities.
 - a. Installing decks, fittings, and rim seals according to design specifications of prevailing standards to minimize evaporative losses.
 - b. Protecting rim seals from wind and weather damage and conducting regular maintenance.
10. To identify the hazards present in the system, a detailed hazard identification study such as Hazard and Operability study (HAZOP) should be undertaken. All

- hazards identified should be examined and appropriate mitigating measures developed and implemented. HAZOP close out report should be prepared for all the actions recommended in the report.
11. For all the tanks where there is a single in/outlet line, an ROV (or an equivalent design to allow isolation of the tank from the line in an emergency) should be provided.
 12. The remote operable tank isolation valves should be operable locally, from the unloading ship and from the control room. The ROVs should be provided with limit switches. Valve status indication (based on limit switch output) and an emergency shutdown button should be provided in the following locations:
 - a. At the respective ship/tanker loading / unloading points, to close the relevant tank valves, also stopping all pumps associated with that loading operation.
 - b. In the control room.
 13. Adani Gangavaram port Limited has to ensure that first aid equipment and manpower resources are at place to deal with emergencies, in consultation with emergency services to rescue any personnel, trapped or immobilized by an accident scenario.
 14. Install high-resolution closed-circuit TV camera and hydrocarbon detectors in the tank farm area for any leakage from the flanges / valves.
 15. Implement and maintain appropriate safety management systems to control the managerial and organizational factors that can impact on the overall risk associated with the hazardous materials.
 16. Regular checks / maintenance and testing of instruments, valves and flange joints as per strict schedule will enhance the safety in the premises. Pipelines, flanges and valves require special attention to minimize the failure rate.
 17. All components (e.g., roofs and seals) should undergo periodic inspection for corrosion and structural integrity and be subject to regular maintenance and replacement of equipment (e.g., pipes, seals, connectors, and valves). Cathodic protection system should be installed to prevent/minimize corrosion, as necessary. Epoxy coating for the pipelines may be provided for protection against external corrosion.
 18. Guidelines and procedures for entering and cleaning the storage tanks are to be followed as per OISD 129 / IS 9964 Part I and II/API RP 2016.
 19. Prevention of potential ignition sources such as:
 - a. Proper grounding to avoid static electricity build-up and lightening hazards (including formal procedures for the use and maintenance of grounding connections)
 - b. Use of intrinsically safe electrical installations and non-sparking tools.
 - c. Implementing permit systems and formal procedures for conducting any hot work during maintenance activities, including proper tank cleaning and venting.
 20. It is recommended to provide passive fire protection system for all the structures, pipelines, major equipment on the jetty as they are exposed to jet fire hazard.

21. Consider linking foam and fire water system. Considerations should be given to directly inject AFFF foam compound into the respective fire mains (at 6 percent strength), which can act as a vehicle to transport foam solution to user points on either site for mobile response foam branches / cannons.
22. Facilities should be properly equipped with fire suppression equipment that meets internationally recognized technical specifications for the type and amount of flammable material stored at the facility.
23. Preparation of a fire response plan supported by the necessary resources and training, including training in the use of fire suppression equipment and evacuation. Procedures may include coordination activities with local authorities or neighbouring facilities.
24. Provide drainage around POL tanks to assure spills collect away from tank. Provide bund to assure that spill area is minimum in size.
25. The Cascade effects may be caused mainly due to various scenarios mentioned in earlier sections. The probabilities of occurrence of such an incident's are 8.8×10^{-8} per meter per year and 3.3×10^{-7} per meter per year respectively and hence are remote. However, if such an incident occurring, the presence of an ignition source can lead to fire and explosion hazards. The probability of the presence of an ignition source is also very remote and the probability of ignition with no ignition sources is about 0.1 and the probability of explosion given an ignition is also about 0.1 (Lees, 1996). By following strict guidelines, the risk for cascade effects can be avoided to the maximum extent.
26. Emergency plan should be prepared and updated from time to time and fine-tuned if required taking into consideration the hazard potential due to proposed pipelines and storages as indicated by the present report. This will help in handling the actual emergencies efficiently and in keeping the damage to minimum extent possible.
27. Provision of fire safety training and response as part of workforce health and safety induction/training, including training the use of fire suppression equipment and evacuation, with advanced fire safety training provided to a designated fire-fighting team.
28. Safety measure as per recommended guidelines by OISD, PNGRB and other national and international guidelines shall be strictly followed.
29. Do's and Don'ts shall be displayed prominently in the site near the pipelines and at all workplaces. Regular maintenance shall be carried out under the supervision of an authorized person.
30. Important telephone numbers of emergency shall be displayed prominently in bold letters at appropriate location at the site and administration building.
31. Caution boards shall be displayed near the pipelines for all working person.
 - a. No smoking signs
 - b. No flames or pilot lights or electrical gadgets.
 - c. Emergency contact numbers.
 - d. Keep distance from pipelines. Pipeline is guarded during any maintenance work to avoid hitting any object to it.

While filling LPG tank trucks/wagons, electrical grounding device shall be provided so that the trucks/ tank wagons are properly earthed and electrostatic charges are safely diverted to the ground. The loading arm shall be equipped with earthing strips min. 70 mm² cross-section area or as per relevant standard made of copper rubber lined or SST for by-passing all non-conductive junctions and shall guarantee 0.5 Ohms maximum electrical resistance throughout the life of the arm. **Earthing grounding device not to be provided.** However, earthing strips for by-passing all non-conductive junctions to be provided at appropriate locations.

Appendices

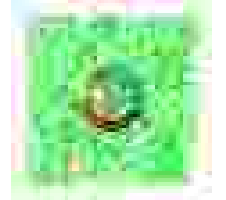
Appendix A
EC/CRZ Clearance letters of Adani
Gangavaram Port Limited



File No.: 10/51/2021-IA.III
Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Dated 19/11/2025



To,

Anil Kumar Trivedi
ADANI GANGAVARAM PORT LIMITED
ADANI CORPORATE HOUSE Shantigram, Near Vaishnodevi circle, SG Highway,
Khodiyar, Ahmedabad, AHMADABAD, GUJARAT, 382421
environment.agpl@adani.com

Subject: Amendment in EC & CRZ Clearance for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited located at Visakhapatnam, Andhra Pradesh by M/s Adani Gangavaram Port Limited- Amendment under Clause 7(ii) regarding.

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/AP/INFRA1/542139/2025 dated 07/08/2025 for grant of an amendment in prior Environmental Clearance (EC) to the project under the provision of the EIA Notification 2006-and as amended thereof.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC25A3501AP5181140A
(ii) File No.	10/51/2021-IA.III
(iii) Clearance Type	Amendment in EC
(iv) Category	A
(v) Schedule No./ Project Activity	7(e) Ports, harbors, breakwaters, dredging
(vi) Sector	INFRA-1
(vii) Name of Project	Amendment in EC & CRZ Clearance for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited
(viii) Location of Project (District, State)	VISAKHAPATANAM, ANDHRA PRADESH
(ix) Issuing Authority	MoEF&CC
(x) EC Date	06/11/2025
(xi) Applicability of General Conditions	NO

(xii) Status of implementation of the project

3. The proposal is for amendment in EC & CRZ Clearance under Clause 7(ii) of EIA Notification, 2006, for Change in Cargo Mix for Development of Liquid Cargo Storage and Handling within Adani Gangavaram Port Limited located at Visakhapatnam, Andhra Pradesh by M/s Adani Gang Avaram Port Limited.

4. The project/activity is covered under the category 'A' of item 7(e), i.e., 'Ports, harbours, breakwaters, dredging' of the schedule to the EIA Notification, 2006, and its subsequent amendments.

5. Gangavaram Port obtained Environmental and CRZ Clearance for a cargo handling capacity of 16.54 MTPA for the construction of four berths (dry bulk cargo-1, Fertilizer/limestone-1, container terminal-1 and break/multipurpose-1) and one exclusive berth for port crafts besides providing warehousing facilities and transit sheds vide EC No.10-3/2005-IA.III dated 11.03.2005. Subsequently for development of fifth berth, GPL obtained EC & CRZ Clearance vide order F.No.10-14/2009-IA.III dated 19.03.2010. Further, EC & CRZ clearance for Phase – II was obtained vide letter no.11-91/2010-IA-III, dated 07.02.2012 with capacity augmentation from 16.54 MTPA to 40.95 MTPA and four additional berths (one mechanized coal berth to handle cape-size coal carrier and three multipurpose berths), for which, environmental public consultation was held on 12.05.2011 as per EIA notification, 2006 (as amended). Further, "EC and CRZ clearance for Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernisation/mechanisation at Gangavaram Port, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh by M/s Gangavaram Port Limited" under Clause 7(ii) of EIA Notification, 2006 (as amended) and CRZ Notification 2011 was obtained from the Ministry vide letter no.10/51/2021-IA.III dated 24/12/2021.

6. Now AGPL has submitted the online application vide proposal no. IA/AP/INFRA1/542139/2025 dated 07/08/2025 under Clause 7(ii) of the EIA Notification, 2006 for amendment in EC and CRZ clearance granted by the Ministry vide letter no.10/51/2021-IA.III dated 24/12/2021 for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA and without increasing pollution load. The details of the existing and proposed cargo mix are as following:

S.No.	Name of the cargo	As per EC and CRZ clearance vide letter no. 10/51/2021-IA.III dated 24/12/2021 Approved Cargo Profile (MTPA)	Proposed Change in Cargo Profile (MTPA)	Remarks
1.	Iron ore	5.50	5.5	No change
2.	Coal	28.25	28.25	No change
3.	Multi-Purpose Cargo- Agri products, (Food grains in bags or bulk, Chic-peas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products	S. No.	11.70	Decreased by 1 MTPA

	(Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos			
4.	Containers	8.00	6.00	Decreased by 2 MTPA
5.	Fertilizer	2.50	2.50	No change
6.	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminium Ingots, Aluminium Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	3.50	No change
7.	Liquid cargo (Edible oil, caustic lye) Proposed - LPG, POL – class A, B & C etc. and non-hazardous liquid cargo etc.)	0.50	3.50	Liquid cargo handling capacity is proposed to rearrange to 3.5 MTPA to handle LPG, Butane, Propane, Propylene, POL – class A, B & C etc. and non-hazardous liquid cargo, edible oil and caustic lye.
Total		60.95	60.95	-

Out of 3.5 MTPA; POL of 2.4 to 2.8 MTPA capacity will be directly hand-over to the vendor through pipeline. Without any storage in the proposed project site, remaining amount of liquid cargo i.e., LPG, Butane and Propane will be stored in the tanks separately.

7. The CRZ map of 1:4000 scale were prepared by IRS, Anna University. The facilities proposed such as liquid cargo storage area and pipeline corridor is falling partly in CRZ II. The activities proposed within CRZ area are permissible as per CRZ Notification, 2011.

Description	CRZ – Classification	Area in Sq.m	Total Area in Sq.m
Proposed Liquid Pipeline Corridor	CRZ – II	8551.38	39850.48
	Outside CRZ	31299.1	
Proposed Liquid Storage Facility	CRZ – II	303.29	92796.82

	Outside CRZ	92493.53	

Andhra Pradesh Coastal Zone Management Authority (APCZMA) recommended the project vide Letter No. 609/CRZ/Proj/2024-326 dated 01-06-2025.

8. The Project Proponent has prepared an Environmental Impact Assessment (EIA) Report for the proposed amendment. It has been observed that, due to the revision in the cargo mix, the number of truck movements for multipurpose cargo and fertilizers will be reduced by approximately 35 trucks. Consequently, no additional tankers or trucks will be required as part of the proposed change in cargo mix. Furthermore, no marine-side development activities, including dredging, are envisaged. The handling of liquid cargo such as LPG, Butane, Propane, Propylene, and POL (Class A, B, and C) as well as non-hazardous liquids, can be undertaken at Berths No. 8 and 9—both of which are already developed for handling multipurpose cargo—by installing the requisite handling equipment and storage facilities.

9. Approved Facilities Vs Amendment in Environmental & CRZ Clearance

S.No	Attribute	Approved by MoEF&CC as per EC	Proposed Change in cargo profile	Remarks
1.	Cargo Capacity	60.95 MTPA	60.95 MTPA	No change
2.	Cargo type	Coal Iron ore Limestone Multipurpose cargo Containers Fertilizers Industrial raw material Liquid cargo (Edible oil, caustic lye)	Coal Iron ore Limestone Multi purpose cargo Containers Fertilizers Industrial raw material Liquid cargo (Edible oil, caustic lye, LPG, POL, class (A, B, C))	Change in cargo mix within approved 60.95 MTPA. Now AGPL would like to handle 3.5 MTPA of liquid cargo such as Liquid LPG and POL class A, B, C, edible oil and caustic lye.
3.	No.of Berths	Nine (9) (existing)	Nine (9) (existing)	No change
4.	Break waters	North: 803 m; South: 1750 m		No change
5.	Capital and Maintenance Dredging	No additional capital and maintenance dredging is envisaged		No change
6.	Reclamation	No reclamation	No reclamation	No change
7.	Navigation Channel	Length: 1700 m; Width: 200 m; Depth: -20.2 m CD		No change
8.	Turning circle	Diameter: 600 m; Depth: -19.5 m CD		No change
9.	Land area for cargo storage	1800 acres		No change, storage tanks proposed are within approved land Area
10.	Water	1658 KLD		No change

11.	Wastewater	Existing STP of 30 KLD, 5 KLD along with proposed 15 KLD STP will meet the generation of 2.4 KLD and reduction in multipurpose cargo will have reduction in sewage generation		No additional treatment facility required and existing STP will cater the generated Wastewater
12.	Solid waste			
	a) Domestic solid waste	13.6 T/m	0.48 T/m	No change As there is reduction in multipurpose cargo, fertiliser and container cargo handling, domestic waste generation will also be reduced and this domestic waste generation of 0.48 T/m be easily handled with existing mode of management
	b) Discarded material, plastic material	10.25 T/m	No change is anticipated	No change
	c) Sludge from STP	1.165 T/m	No change is anticipated	No change
	d) Waste Oils & Grease	25 Metric TPA	No change is anticipated	No change
	Waste/ used oil / oil sludge generated in e) ships	600 Metric TPA	No change is anticipated	No change
13.	Power supply	14.5 MVA	5 MVA	Additional power will be sourced from APTRANSCO
14.	Employment	400	65	Reduction in multipurpose cargo, fertiliser and container cargo handling will compensate the employment/No change
15.	Project Cost	Rs.5055 crores	Rs.1688 crores (additional)	Provision of storage, handling equipment and safety aspects including automation facilities will cost additionally Rs.1688 crores.

10. No additional marine infrastructure such as berths, capital dredging, breakwater, reclamation is proposed. No additional land is proposed as sufficient land is available within already approved port boundary of 1800-acre area.

11. *Observation of the committee:*

- i. The current proposal is amendment in EC and CRZ Clearance for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA and without increasing pollution load. The same has been considered as per the OM issues by the Ministry dated 11th April, 2022, under the category of modernization/change of product mix.
- ii. Though the PP has conducted a comprehensive risk assessment study for the proposed liquid cargo facility, covering both the construction and operation phases. The study includes detailed Hazard Identification (HAZID), Preliminary Hazard Analysis (PHA), and Consequence Analysis addressing Maximum Credible Accident (MCA) scenarios yet the BLEVE Study shall also be conducted which is crucial for safety in the port that handle pressurised liquids like LNG and LPG and incorporate appropriate mitigation measures for such extreme scenarios in the project documentation. Compliance with these requirements shall be ensured prior to commencement of project activities.
- iii. The Project Proponents (PP) shall ensure that handling of liquid cargo is carried out with stringent safety measures in place, including proper training of personnel, use of appropriate equipment, and implementation of standard operational protocols, to minimize risks of spillage, fire, or other operational hazards, and to ensure full compliance with applicable safety and environmental regulations.
- iv. The Project Proponents (PP) have submitted Standard Operating Procedures (SOPs) detailing the operational protocols to minimize risks associated with liquid cargo handling. The PP shall strictly adhere to these SOPs to ensure safe operations and compliance with applicable safety and environmental regulations and should also attempt to ensure that coal operations and LNG/LPG operations are not carried out simultaneously.

12. Reason of Amendment: Due to changes in market demand, AGPL has been receiving various inquiries from stakeholders regarding the handling of additional liquid cargo types, including LPG, POL-class A, B, and C, as well as non-hazardous liquids.

13. Court Cases: There is no court case involved in the project.

14. The EAC, taking into account the submission made by the project proponent had a detailed deliberation in its 412th meeting of the Expert Appraisal Committee held on 14th August, 2025, 417th meeting held on 26th September, 2025 and 420th meeting of Expert Appraisal Committee held on 15th October, 2025 **recommended** the proposal for amendment in EC and CRZ clearance vide letter no.10/51/2021-IA.III dated 24/12/2021 for change in cargo mix to develop facility for liquid cargo storage and handling within approved capacity of 60.94 MTPA under the provisions of clause 7(ii) of the EIA Notification, 2006 and CRZ notification, 2011 subject to all specific conditions and Standard Conditions applicable for such projects.

15. 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 of amendment in the EC and CRZ clearance granted by the Ministry vide letter No. 10/51/2021-IA.III dated 24/12/2021 under Clause 7(ii) of EIA Notification 2006 and CRZ notification, 2011 as per following details:

S.No.	Name of the cargo	As per EC and	Proposed	Remarks

		CRZ clearance vide letter no. 10/51/2021-IA.III dated 24/12/2021 Approved Cargo Profile (MTPA)	Change in Cargo Profile (MTPA)	
1.	Iron ore	5.50	5.5	No change
2.	Coal	28.25	28.25	No change
3.	Multi-Purpose Cargo-Agri products, (Food grains in bags or bulk, Chic-peas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Limestone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos	S. No.	11.70	Decreased by 1 MTPA
4.	Containers	8.00	6.00	Decreased by 2 MTPA
5.	Fertilizer	2.50	2.50	No change
6.	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminium Ingots, Aluminium Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	3.50	No change
7.	Liquid cargo (Edible oil, caustic lye) Proposed - LPG, POL – class A, B & C etc. and non-hazardous liquid cargo etc.)	0.50	3.50	Liquid cargo handling capacity is proposed to rearrange to 3.5 MTPA to handle LPG, Butane, Propane, Propylene, POL – class A, B & C etc. and non-hazardous liquid cargo, edible oil and caustic lye.

Total	60.95	60.96	-

16. The above amendment is subject to compliance of the following conditions mentioned at Annexure 1:

17. This issues with the approval of the Competent Authority.

Copy To

1. The Principal Secretary, Department of Environment, Forest, Science & Technology, Government of Andhra Pradesh, Room No-268, First Floor, Building No-4, A.P. Secretariat, Velagapudi, Amaravati, Andhra Pradesh-522503.
2. The Inspector General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Vijayawada Green House Complex, Gopalareddy Road, Vijayawada – 520010, Andhra Pradesh.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi -32.
4. The Member Secretary, Andhra Pradesh Pollution Control Board, Chalamalavaii Street, Kasturibaipet, Vijayawada - 520 010.
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
6. Guard File/Record File.
7. Notice Board.

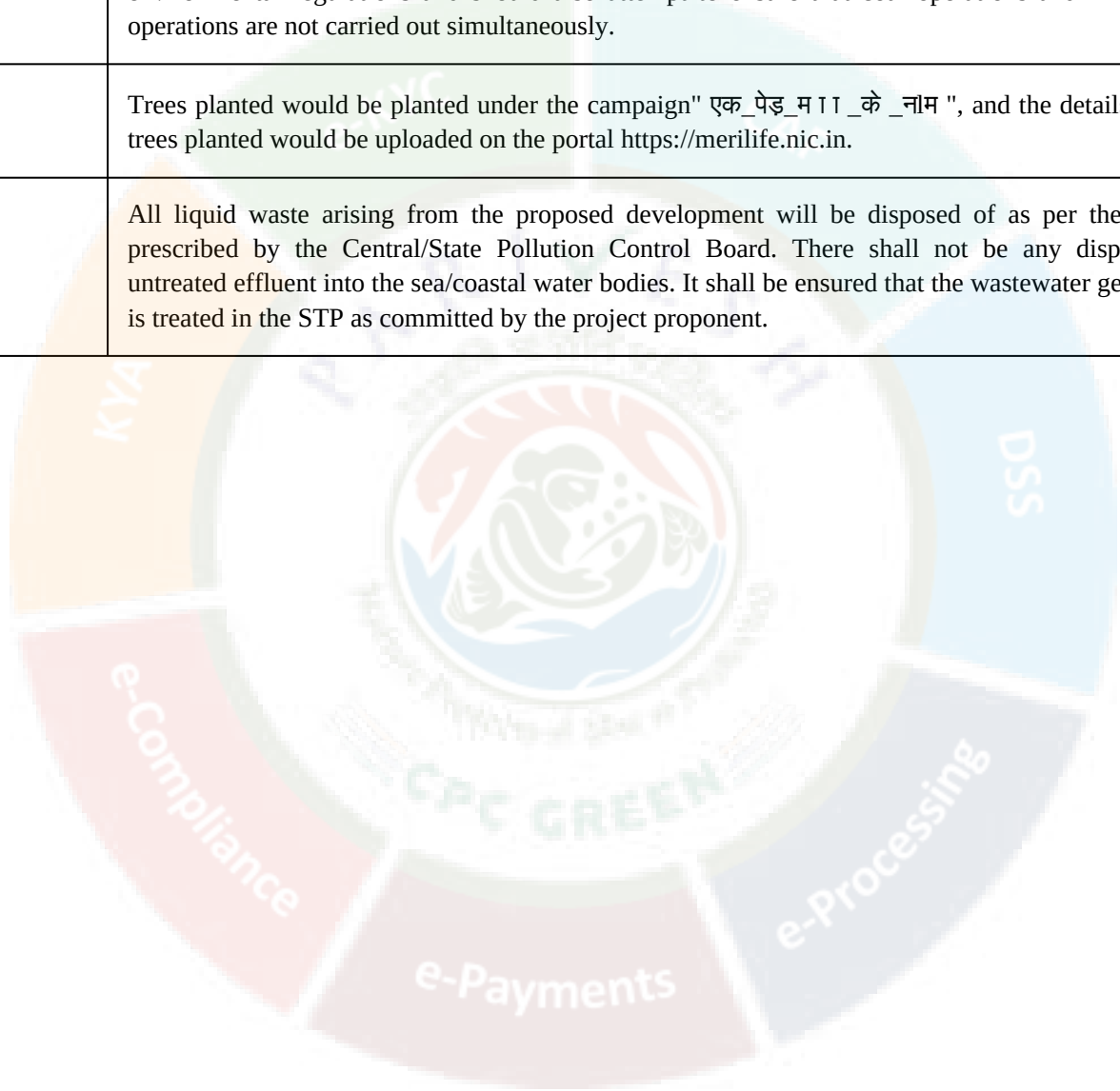
Annexure 1

Specific EC Conditions for (Ports, Harbors, Breakwaters, Dredging)

1. Specific Conditions

S. No	EC Conditions
1.1	All the terms and conditions mentioned in the Environmental and CRZ clearance letter no.10/51/2021-IA.III dated 24/12/2021 shall remain unchanged.
1.2	The Amendment of the EC is being granted for the original proposals for which Environmental and CRZ Clearance vide letter of even no dated 24/12/2021 was granted earlier. The validity of the EC shall remain the same as provided in the Environmental Clearance letter dated 24/12/2021.
1.3	Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. All the storage proposed in the CRZ area shall be in line with the CRZ notification, 2011.
1.4	All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) recommended the project vide Letter No. 609/CRZ/Proj/2024-326 dated 01-06-2025 shall be complied with. The compliance report shall be submitted to the concern IRO, MoEF&CC along with the 6 monthly EC compliance report.
1.5	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in the Coastal Regulation Zone area.

S. No	EC Conditions
1.6	In addition to the comprehensive Risk assessment studies for liquid cargo already conducted the Project Proponents (PP) shall also undertake the BLEVE Study and incorporate appropriate mitigation measures for such extreme scenarios in the project documentation. Compliance with these requirements shall be ensured prior to commencement of project activities and a compliance report shall be submitted along with 6 monthly compliance reports.
1.7	The Project Proponents (PP) have submitted Standard Operating Procedures (SOPs) detailing the operational protocols to minimize risks associated with liquid cargo handling. The PP shall strictly adhere to these SOPs to ensure safe operations and compliance with applicable safety and environmental regulations and should also attempt to ensure that coal operations and LNG/LPG operations are not carried out simultaneously.
1.8	Trees planted would be planted under the campaign "एक पेड़ मी के नाम", and the details of the trees planted would be uploaded on the portal https://merilife.nic.in .
1.9	All liquid waste arising from the proposed development will be disposed of as per the norms prescribed by the Central/State Pollution Control Board. There shall not be any disposal of untreated effluent into the sea/coastal water bodies. It shall be ensured that the wastewater generated is treated in the STP as committed by the project proponent.



Signature Not Verified

Digitally Signed by : Dr. Amardeep Raju
Member Secretary, MoEFCC (EC)

Date: 19/11/2025



**Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)**

To,

The Vice President Environment

M/S. GANGAVARAM PORT LIMITED

M/s.Gangavaram Port Limited Peda Gantyada Mandal, Visakhapatnam
District,,Visakhapatnam,Andhra Pradesh-530044

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity
under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC)
in respect of project submitted to the Ministry vide proposal number
IA/AP/NCP/237816/2021 dated 10 Nov 2021. The particulars of the environmental
clearance granted to the project are as below.

1. EC Identification No.	EC21A033AP141550
2. File No.	10/51/2021-IA.III
3. Project Type	Expansion7
4. Category	A
5. Project/Activity including Schedule No.	7(e) Ports, Harbours
6. Name of Project	Environment & CRZ Clearance under Clause 7 (ii) of EIA Notification, 2006 and amendments thereafter – Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernisation/mechanisation at Gangavaram Port
7. Name of Company/Organization	M/S. GANGAVARAM PORT LIMITED
8. Location of Project	Andhra Pradesh
9. TOR Date	N/A

The project details along with terms and conditions are appended herewith from page
no 2 onwards.

Date: 24/12/2021

(e-signed)
Amardeep Raju
Scientist E
IA - (INFRA-1 sector)

*Note: A valid environmental clearance shall be one that has EC identification
number & E-Sign generated from PARIVESH.Please quote identification
number in all future correspondence.*

This is a computer generated cover page.

2. Gangavaram Port obtained Environmental and CRZ Clearance for a cargo handling capacity of 16.54 MTPA for the construction of four berths (dry bulk cargo-1, Fertilizer/limestone-1, container terminal-1 and break/multipurpose-1) and one exclusive berth for port crafts besides providing warehousing facilities and transit sheds vide EC No. 10-3/2005-IA.III dated 11.03.2005. Subsequently for development of fifth berth, GPL obtained EC & CRZ Clearance vide order F.No.10-14/2009-IA.III dated 19.03.2010.
3. EC & CRZ clearance for Phase – II was obtained vide Order F.No.11-91/2010-IA-III, dated 07.02.2012 with capacity augmentation from 16.54 MTPA to 40.95 MTPA and four additional berths (one mechanized coal berth to handle cape-size coal carrier and three multipurpose berths), for which, environmental public consultation was held on 12.05.2011 as per EIA notification, 2006 (as amended).
4. At present stage, Gangavaram port is operating with nine berths and provides cargo handling services for a variety of bulk and break bulk including coal, iron ore, Multi Cargo (Agri products, Slag, Lime stone, Steel products etc.), Fertilizer, Industrial Raw Materials such as Gypsum, Aluminum Ingots, Gypsum etc. During the last six years' cargo handling has been increased upto 34.45 MTPA. By increasing the operational efficiency of existing port infrastructure without any marine infrastructure development, cargo handling capacity can be enhanced from approved capacity of 40.95 MTPA to 60.95 MTPA.
5. An application has been made by GPL for environmental and CRZ clearance under Clause 7(ii) for prior Environmental Clearance (EC) under Expansion or Modernization or Change of product mix in existing projects, of EIA notification, 2006 and amendments thereafter as:
- No additional marine infrastructure such as berths, capital dredging, breakwater, reclamation is proposed. No additional land is proposed as sufficient land is available within already approved port boundary of 1800-acre area,
 - No CRZ -I (A) area present within port area as well as port limit and only material handling systems such as cranes and permissible back-up infrastructure will be created within CRZ - II area of port area.
 - Development /modernization of port back-up area is majorly in non CRZ area and partially falling in CRZ-II area of approved 1800-acre area. CRZ from 1 application along with EIA report submitted to APCZMA and recommendation from APCZMA was obtained vide Letter No. 338/CRZ/Port/2021 dated 24/10/2021.
 - No addition of any new cargo type in the current proposal and only increase in cargo handling capacity through modernization/mechanization of approved cargo profile (type) in the current proposal. Approximately 70 % of proposed 20 MMTPA, 7.75 MTPA is non-dusty cargo (container, steel products, agri-products etc.)
 - Modernization/mechanization of port will lead to reduction in carbon emissions due to increase in cargo evacuation through railway and up-gradation as well as addition of material handling systems including covered conveyor etc. will reduce inter-carting.
6. Public consultation has been already carried out for 9 berths and 1800-acre area as per EIA Notification, 2006 and amendments thereafter. Points raised during public hearing such as providing jobs, dust control measures, greenbelt development and CSR activities like support on health, education medical were addressed properly and there is no major grievance from public/regulatory authorities.

7. Following are the Cargo Handling Capacity through Modernization:

S. No.	Name of the cargo	Existing Cargo (MTPA) (Consented Quantity)	Additional Cargo (MTPA)	Total Cargo (MTPA)
1	Containers	0.25	7.75	8.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Lime Stone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles, Channels, Project Cargo), Bulk Alumina & Other cargos.	6.20	6.50	12.70
3	Coal	25.00	3.25	28.25
4	Iron ore	3.00	2.50	5.50
5	Fertilizer	2.50	0	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	0	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50	0	0.50

8. The proposed project falls under 7(e), Category-A, Ports, Harbours as per EIA Notification 2006. The proposed project is for expansion under Clause 7(ii) of EIA Notification, 2006 (as amended). Total investment/cost of the project is about Rs 5055 Crores.

9. Geo-coordinates of the project site is as following:

From: 17°39'39.162"N	To: 17°37'41.643"
From: 83°14'8.411" E	To: 83°15'44.670"E

10. Land use /Land breakup of the proposed project site is as following:

Sl. No.	LU/LC	Area (Ha)	Percentage %
1	Built up - Port	314.69	43.2
2	Vegetated/Open Area	359.95	49.41
3	Rocky Area	40.46	5.56
4	Open Scrub land	11.82	1.62
5	Water Reservoir	1.51	0.21
Total		728.43	100

11. Terrain and topographical features: Eastern boundary of the port ground level varies from 0.8 m to 1.0 m and towards the western boundary of port location ground levels are higher than 2.0 m with respect to MSL.

12. Water requirements: The total water requirement during construction period is 1.0 MLD. The water required for proposed expansion/modernisation activity is 378 KLD which

will be sourced from treated water of STP (10 KLD) and remaining 368 KLD shall be sourced from VISCOW. Permission for withdrawal of 1200 KLD from VISCOW is available and additional water requirement application is filed to VISCOW.

13. Waste Management: It is estimated that domestic solid waste generated will be ~3.6 T/m. Discarded material and plastic material waste is estimated to be 0.25 T/m. The solid waste sludge from STP is ~ 5.5 kg/day. Used oil, spent oil, Wastes/Residue containing oil, Oil soaked rags, cotton waste, discarded containers, barrels & used battery will be collected and disposed to approved vendors and same will be continued to proposed project. Hazardous wastes generated at the port shall be disposed-off through authorized vendors duly adhering under guidelines of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and its amendment.

14. STP Details: The sewage generated at the project site will be treated in existing STP. GPL is operating two STPs of capacity 30 KLD near to harbour gate location beside stores and 5 KLD near Main gate. Another 15 KLD STP is proposed to meet the modernization/mechanisation plan. Treated water will be utilized for green belt.

15. Tree cutting: Clearance of vegetation shall be carried out as per project requirement. Clearance of scrub vegetation with few tree species such as *Phoenix sylvestris* (Etha), *Acacia Nilotic* (Nalla tumma) and *Borassus flabellifer* (Thadi) is envisaged near the proposed backup area.

16. Green Belt development: Greenbelt/area is developed in an extent of 318.21 Acres within the port range covering periphery of yards, roads, buildings and along conveyor belt. In total, Greenbelt has been developed more than 10% of the total area and 50m width in the boundary of the port.

17. CRZ details: The project falls majorly in Non CRZ area and partly falling in CRZ-II as per approved CZMP map (Map Nos. AP 114,115 and 116) and the activities proposed within CRZ area are permissible as per CRZ notification, 2011. No marine side construction activity is proposed under this modernization. APCZMA recommendations obtained vide Letter no. 338/CRZ/Port/2021 dated 24/10/2021.

18. Foreshore details: No additional marine infrastructure such as berths, breakwater, capital dredging and reclamation is proposed.

19. Employment potential: Total man power requirement during the construction phase is approximately 200 to 250 workers. During operation phase, direct employment of 100 and indirect employment of 500 workers are envisaged.

20. Benefits of the project: The proposed expansion project will have major positive impact on Induced development, Improved Socio-economic conditions, Quality of Life, Employment Opportunities, Revenue Generation, Corporate Social Responsibility etc.

21. Details of court cases: No court cases are pending against the proposed project.

22. The EAC based on the information submitted and clarifications provided by the project proponent and detailed discussions held on all the issues in its 281st meeting on 24th - 25th November, 2021, recommended the project for grant of environmental and CRZ clearance under clause 7(ii) of EIA Notification, 2006, with stipulated specific conditions along with other Standard EC Conditions.

23. 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 Clearance for the *“Increase in cargo handling capacity from 40.95 to 60.95 MTPA with existing 9 berths and within approved project area of 1800 acre through modernisation/mechanisation at Gangavaram Port, Pedagantyada Mandal, Visakhapatnam District, Andhra Pradesh by M/s Gangavaram Port Limited”* under Clause 7(ii) of 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.

SPECIFIC CONDITIONS

- i. No construction activity beyond the existing layout area shall be undertaken for the project. Only modernization/mechanization as envisaged in the present proposal shall be permissible.
- ii. Erosion of shoreline has been noted at the project location and adjoining areas due to existing port and hence Shore Management plan and beach nourishment plan need to be prepared and an implementation report needs to be submitted to the Ministry as a part of 6 monthly compliance report. Beach Nourishment strategy has to be developed with the help from a reputed scientific institute specialized in the subject.
- iii. All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide letter No 338/CRZ/Port/2021 dated 24th October 2021 shall be complied with.
- iv. Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- v. Necessary approvals to be taken during implementation and commissioning from statutory bodies concerned.
- vi. 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.
- vii. Spillage of fuel / engine oil and lubricants from the site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.
- viii. Necessary arrangements for the treatment of the effluents and solid wastes/ facilitation of reception facilities under MARPOL 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. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be complied with.

- ix. Necessary arrangement for general safety and occupational health of people should be done in letter and spirit.
- x. The dust suppression measures for the proposed increase in the cargo should be ensured through mechanized handling of cargo and conveyance.
- xi. The waste water from oil spillage or cargo should be treated and disposed.
- xii. 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 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

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. PM₁₀ and PM_{2.5} in reference to PM emission, and SO₂ and NO_x in reference to SO₂ and NO_x 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.
- (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 offices and project 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:

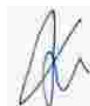
- (i) Dredging shall not be carried out during the fish breeding and spawning seasons.
- (ii) Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.
- (iii) The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.
- (iv) 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.
- (v) 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.
- (vi) 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.
- (vii) 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) In case of repair of any old vessels, excessive care shall be taken while handling Asbestos & Freon gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSDF.
- (iv) 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.
- (v) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- (vi) 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.
- (vii) Occupational health surveillance of the workers shall be done on a regular basis.

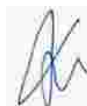
X. Environment Responsibility:

- (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 Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- (vi) The criteria pollutant levels namely; PM_{2.5}, PM₁₀, SO₂, NO_x (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 project 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 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.
- (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.

22. This issues with the approval of the Competent Authority.



(Amardeep Raju)
Scientist-E

Copy to:

1. The Principal Secretary, Department of Environment, Forest, Science & Technology, Government of Andhra Pradesh, Hyderabad, A.P.
2. The Member Secretary, AP Pollution Control Board, Chalamalavaii Street, Kasturibaipet, Vijayawada - 520 010.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi -32
4. The Additional Principal Chief Conservator of Forests (C), Aranya Bhavan, K.M. Munshi Road, Nagarampalem, Guntur-522 004, Andhra Pradesh.
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
6. Guard File/Record File
7. Notice Board.



(Amardeep Raju)
Scientist-E

F.No.11-91/2010-IA-III
Government of India
Ministry of Environment & Forests
(IA Division)

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110 003.

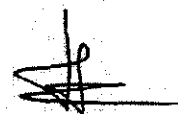
Dated: 7th February, 2012.

To,
M/s Gangavaram Port Ltd,
Hansa Crest, 1st Floor,
Plot No. 62, Road No.1,
Jubilee Hills,
Hyderabad

Subject: Environment and CRZ Clearance for the development of Phase -II of Gangavaram Port, Visakhapatnam District, Andhra Pradesh by M/s Gangavaram Port Ltd.-Reg.

This has reference to letter No: GPL/EFS&T/014 dated 10.08.2010 seeking prior Environmental and CRZ Clearance for the above project under the EIA Notification - 2006 and Coastal Regulation Zone (CRZ) Notification, 1991. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification - 2006 and Coastal Regulation Zone Notification, 1991/2011 on the basis of the mandatory documents enclosed with the application viz., the Questionnaire, recommendation of State Coastal Zone Management Authority, EIA, EMP and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meeting held on 17th -19th August, 2011.

2. It is interalia, noted that the proposal involves development of Phase -II of Gangavaram Port, Visakhapatnam District, Andhra Pradesh. Gangavaram Port is developed as all weather multipurpose deepest port in India to handle super cape size vessels located on the East coast of India approximately 15 km south of Visakhapatnam Port and acting like gateway port to the existing and green field projects in the hinterland. At Gangavaram Port presently five berths are under operation to handle variety of cargoes such as Coal / Iron ore, Fertilizer, Limestone, Food Grains, and Steel Products etc. It is proposed to expand the port facilities from 16.54 MTPA to 41 MTPA to cater for future cargo within the existing port premises at Gangavaram Village, Pedagantyada mandal, Visakhapatnam District, Andhra Pradesh. The existing Project already received Environmental Clearance under EIA & CRZ notifications vide letter No.10-14/2009-IA.III dt.19th March, 2010. The following facilities proposed to be planned at Gangavaram port to handle the above mentioned future traffic up to year 2015, (i) One mechanized coal berth to handle cape



size coal carrier and (ii) Three multipurpose berths to handle multipurpose/General cargo.

3. Dredging to the extent of 4.88 million cubic meters will be carried out in front of the berths and near the turning basin. The dredged material will be pumped onshore for reclamation of the port backup areas. The other associated facilities like Buildings, Storage, roads, railways, water, power, drainage, sewage, pollution control including Dust suppression system, greenery fire fighting system etc. are planned to be provided.

4. Additional Rail sidings will be developed within port premises to take on additional cargo evacuation. No additional land requirement as sufficient land is available within existing port premises. The water requirement will be 1000 m³/day in addition to existing 600 m³/day of Phase I and will be sourced from Visakha International Water Supply Company. The Power requirement will be 5 MVA in addition to 9 MVA of existing Phase - I and will be sourced from APTRANSCO. Adequate dust suppression measures will be installed in addition to existing sprayers. Zero waste water discharge shall be maintained by utilising treated waste water for dust suppression & green belt development. Total development green belt is 106 acres and further 40 acres will be developed before January, 2011. The total cost of the project is Rs. 800 crores.

5. ToR for the project was finalized by the EAC in its 94th Meeting held on 30 November, 1st -2nd December, 2010. Public Hearing was conducted on 12.05.2011 near the main Gate of the Port, Gangavaram.

6. The Andhra Pradesh Coastal zone Management Authority has recommended the project vide letter dated 3687/CZMA/2011 dated 27.07.2011.

7. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the grant of Environmental and CRZ Clearance for the project. Accordingly, the Ministry hereby accord necessary Environmental Clearance for the above project as per the provisions of Environmental Impact Assessment Notification - 2006 and Coastal Regulation Zone Notification, 2011, subject to strict compliance of the terms and conditions as follows:

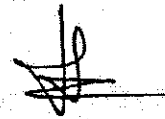
8. SPECIFIC CONDITIONS :

- (i) "Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.
- (ii) As the development is conceived in several stages to reach the



full designed/planned capacity of the port, it shall be necessary to prepare and put in place a master EMP for the full scale development and fit in the phase-wise creations as modules forming part of the entire system. This shall facilitate a harmonious planning of environmental requirements to be put in place in a phased manner in accordance with preset goal and objective as outlined in the overall environmental plan for the port in its totality.

- (iii) The 4.88 million cum of dredged material shall be used for shore reclamation subject to its suitability. Any unsuitable/excess dredged material shall be disposed at dumpsite. Port shall identify suitable dumping spot for disposal of unsuitable material offshore on the basis of appropriate modeling study.
- (iv) The green belt area proposed is about 10 % only. Proponent shall enhance the area of green belt. Width of the green belt shall be minimum 50 m. The present stage of development of 40 acres of land for green belt which should have been completed before January 2011 shall be reported to the Ministry together with the programme adopted for implementation.
- (v) There will be a quantum jump of port traffic from the existing level of 16.54 MTPA to 41 MTPA after completion of the proposed developments and this is likely to register further leap when full scale planned capacity is reached later; it is therefore necessary even now to plan appropriate measures to ensure that will be no mismatch between the planned capacity and the external logistic requirements in the overall transportation chain/network commensurate with the demand. A long range vision would be necessary to achieve a smooth flow of cargo traffic both within and outside port limits.
- (vi) The Company shall enhance the allocation for the CSR activities from 2.5 to 5 % of the total cost and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.
- (vii) All the recommendation of the EMP and DMP shall be complied with letter and spirit.
- (viii) Construction activity shall be carried out strictly as per the provisions 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.



- (ix) The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.
- (x) It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.
- (xi) 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.
- (xii) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.

9. GENERAL CONDITIONS:

- (i) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.
- (ii) Full support shall be extended to the officers of this Ministry/Regional Office at Bengaluru by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.
- (iii) A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bengaluru regarding the implementation of the stipulated conditions.
- (iv) Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (v) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
- (vi) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
- (vii) 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.

- (viii) A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.
- (ix) State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.

10. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.

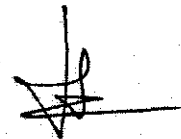
11. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

12. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. 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 Bangaluru.

13. 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.

14. Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.

15. A copy of the clearance letter shall be sent by the proponent to concerned 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.



16. 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.

17. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.


(Lalit Kapur)
Director(IA-III)

Copy to:

- 1 The Chairman, Andhra Pradesh Coastal Zone Management Authority, IAS, Special Chief Secretary to Government, E.F.S & T. Department Government of Andhra, Pradesh Secretariat, Hyderabad-500 002
- 2 The Chairman, CPCB, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32.
- 3 The Member Secretary, Andhra Pradesh Coastal Zone Management Authority, IAS, Special Chief Secretary to Government, E.F.S & T. Department Government of Andhra, Pradesh Secretariat, Hyderabad-500 002
- 4 The Chairman, Andhra Pradesh Pollution Control Board, Paryarana Bhawan, A-III, Industrial Area, Sanathnagar, Hyderabad - 500 018, Andhra Pradesh.
5. The C.C.F., Regional Office (SZ), Ministry of Environment & Forests, Kendriya Sadan, IV Floor, Environment & Forests Wings, Office (SZ), 7th Main Road, II Block, Koramangala, Bangalore - 560 034.
6. Guard File.
7. Monitoring Cell.

(Lalit Kapur)
Director(IA-III)

5473
27/3/10

No. 10-14/2009-IA.III
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110 003.

Dated: 19th March, 2010.

To
M/s. Gangavaram Port Limited,
Hansa Crest, 1st Floor,
Plot No.62, Road No.1,
Jubilee Hills,
Hyderabad - 500 033,
Andhra Pradesh.

Subject: Environmental and CRZ Clearance for the construction
of 5th Berth in Visakhapatnam Andhra Pradesh by M/s.
Gangavaram Port Ltd. - Reg.

This has reference to the letter No: 6586/CZMA/2008, dated 24.12.2008 of Special Chief Secretary, E.F.S. & T. Department, Govt. of Andhra Pradesh and subsequent letter dated 25.05.2009 and 02.11.2009 received on 07.12.2009 seeking prior Environmental and CRZ Clearance for the above project under the EIA Notification - 2006 and CRZ Notification, 1991. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification - 2006 and subsequent amendment in 2009 and CRZ Notification, 1991 on the basis of the mandatory documents enclosed with the application viz., the Questionnaire, EIA, EMP and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meetings held on 23rd - 24th April, 2009 and 21st - 23rd December, 2009.

2. It is interalia, noted that the original project was accorded Environmental Clearance for the construction of four berths and one exclusive berth for the port crafts besides providing ware housing facilities and transit sheds on 07.11.2008. The present proposal intends to develop the exclusive berth permitted earlier to accommodate the Port crafts into a full fledged General Cargo Berth with a draft of 14.50 m as part of augmenting the facilities to ensure better utilization of the constructed space. The total extent of the port area is 2,800 acres. The present proposal pertains to change of Cargo profile, to allow bigger vessels in the port, increase in number of berths, change of dimensions of berths, changes in cargo storage area etc. with an additional investment of Rs. 250 crores with a cumulative projected cost being in the order of Rs. 1650 crores.

AE-2

Pl file

Jahan

27/3/10

3. The revised scope of the project includes the changes in the orientation of breakwaters, which is based on currents, and wave pattern of the sea. The estimated quantum of net annual littoral drift is assessed to be of the order of 9,00,000 cum moving from south to north. As per the Mathematical modeling, the long shore current along the southern breakwater indicates that sediments transport takes place along the breakwater towards the entrance channel. In the case of Gangavaram the average net sediment transport is estimated to be in the order of 0.9 million cum per year. The sand trap has been provided. The sand trap is designed between - 6.0 m and - 14.0 m contours outside the south breakwater to trap 0.5 to 0.6 million Cum of sediments per year. The starting point of the southern breakwater is shifted towards southern hill known as Meraka Mettta without any adverse impacts on shore. The length of southern breakwater is indicated as 1750 meters and oriented at 46° - 234° . The northern breakwater is 800 m long and oriented 153° - 333° . The orientation of the entrance channel to the port has been fixed at 84° - 264° . The width of the approach channel as per the report is 200 m with a dredged depth of - 20.2 m below CD and maneuvering area is -19.3 m below CD. The General Cargo berth will be 240 m. length, 21 m. width and with 14.50 m. draft.

4. As per the approved Coastal Zone Management Plan (CZMP), the entire port area is classified as CRZ-III. The Environmental Impact Assessment Report, Detailed Feasibility Report, Risk Assessment and Oil Spill Response Plan on Emergency Action Plan, Report on Demarcation of LTL, HTL, and CRZ Lines by National Institute of Oceanography, carried out. The Andhra Pradesh Pollution Control Board issued Consent Order for Establishment (CFE) through Order No. 113/PCB/CFE/RO-VSP/HO/2008, dt. 11.08.2008, for conversion of Berth earmarked for Port crafts into General Cargo Berth to handle containers and other dry cargo like agriculture products.

5. The Environment, Forests, Science and Technology Department, Govt. of Andhra Pradesh recommended the proposal vide letter No.6586/CZMA/2008, dated 24.12.2008 for the issue of Environmental Clearance.

6. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the grant of Environmental and CRZ Clearance for the project. Accordingly, the Ministry hereby accord necessary Environmental and CRZ Clearance for the above project as per the provisions of Environmental Impact Assessment Notification - 2006 and CRZ Notification, 1991 and its subsequent amendment in 2009, subject to strict compliance of the terms and conditions as follows:

7. **Specific Conditions :**

- (i) No construction work other than those permitted in Coastal Regulation Zone Notification, 1991 shall be carried out in Coastal Regulation Zone area.
- (ii) Sewage shall be treated and the Treatment Facility shall be provided in accordance with the Coastal Regulation Zone Notification, 1991. The disposal of treated water shall confirm the regulation of Andhra Pradesh State Pollution Control Board.
- (iii) Oil spills if any shall be properly collected and disposed as per the Rules.
- (iv) 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.
- (v) 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.
- (vi) 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.
- (vii) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.

8. **General Conditions:**

- (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.
- (ii) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.
- (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.

- (b) No excavation or dumping shall be allowed on wetlands, forest areas or other ecologically valuable or sensitive locations.
- (c) Excavation work shall be done in close consultation with the Soil Conservation and Watershed Development Agencies working in the area, and
- (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 ground water.
- (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.
- (v) Adequate precautions shall be taken during transportation of the construction material so that it does not affect the environment adversely.
- (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 measures and other environmental protection activities.
- (vii) Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (viii) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
- (ix) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
- (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.

- (xi) Andhra Pradesh Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.

9. 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.

10. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

11. 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 <http://www.envfor.nic.in>. 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.

12. 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.

13. Any appeal against this Environmental Clearance 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.

14. 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.

15. The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (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.

16. 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.

17. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

(Bharat Bhushan)
Director (IA-III)

Copy to:

- (1) The Secretary, Department of Environment, Government of Andhra Pradesh, Secretariat, Hyderabad.
- (2) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110 032.
- (3) The Chairman, Andhra Pradesh Coastal Zone Management Authority and Principal Secretary, Environment, Forests and Sciences and Technology, Government of Andhra Pradesh, Hyderabad.
- (4) The Member Secretary, Andhra Pradesh Pollution Control Board, Hyderabad.
- (5) The CCF, Regional Office, Ministry of Environment & Forests(SZ), Kendriya Sadan, IVth floor, E&F wings, 17th Main Road, Koramangala II Block, Bangalore - 560 034.
- (6) IA - Division, Monitoring Cell, MOEF, New Delhi - 110003.
- (7) Guard file.

(Bharat Bhushan)
Director (IA-III)

No.10 3/2005-IA-III
Government of India
Ministry of Environment and Forests.

Paryavaran Bhavan,
C.G.O. Complex, Lodi Road,
New Delhi-110003

Dated the 11th March, 2005

Sub: Development of Port at Gangavaram near Visakhapatnam by M/s Gangavaram Port Limited - Environmental Clearance -regarding.

Reference is invited to the letter No.6762/SADA/2004, dated 16.12.2004 from Government of Andhra Pradesh, Environment Forests Science and Technology Department regarding the subject mentioned. Further letters from M/s Gangavaram Port Limited received vide letter No.Nil, dated 30.12.2004 have also been considered.

The proposed project involves setting up of deep-water multipurpose port at Gangavaram, Visakhapatnam district suitable for handling different types of cargos. The land requirement for the project is 1800 acres, which is being made available by Government of Andhra Pradesh. The site of the port is located at Latitude 17°37' N and Longitude 83°14' E near Dibbapalem village, Pedaganryada.

The proposal envisages construction of South Break Water of 1.3 km length, North Break Water of 1.1 km length and 4 berths, (1 dry bulk cargo, 1 fertilizer/lime stone, 1 container terminal, and 1 break bulk/multipurpose) and one exclusive berth for the port crafts, besides providing ware housing facilities and transit sheds. The project involves capital dredging of 8 million cubic metres, which will be pumped to the shore for reclamation of back up area. The project is classified as Coastal Regulation Zone-III category and the inter tidal zone falling in between High Tide Line and Low Tide Line is categorized as Coastal Regulation Zone-I(ii). The total cost of the project is Rs.1459 crores.

The Andhra Pradesh Pollution Control Board has accorded NOC for the project vide their letter No.113/PCB/C.Esst/RO-VSP/AEE-N/2002-1225, dated 24.7.2003.

The proposal has been examined and environmental clearance under the provisions of Coastal Regulation Zone Notification, 1991 as amended from time to time is hereby accorded to this project subject to effective implementation of the following conditions:-

(A) Specific Conditions:

- (i) The project proponent shall not undertake any destruction of mangroves during construction and operation of the project.
- (ii) All the conditions stipulated by Andhra Pradesh Pollution Control Board in their consent letter No.113/PCB/C.Esst/RO-VSP/AEE-N/2002-1225, dated 24.7.2003 shall be effectively implemented.

- (iii) Littoral drift management using Rainbow Technique should be adopted for beach nourishment on the northern side of north Break Water to combat coastal erosion problems.
- (iv) Random wave plume test should be conducted to check the stability of Breakwater section and Round Head, before commencement of work.
- (v) A large quantity of stones are proposed to be quarried from Yerada hill. Environment Management and rehabilitation plan of the quarry site should be worked out and implemented.
- (vi) Marine ecology monitoring shall be done regularly during construction of Breakwater and dredging operation.
- (vii) Regular monitoring of air quality shall be done in the settlement areas around the project site and appropriate safeguard measures shall be taken to ensure that the population is not subjected to higher levels of air pollution.
- (viii) Sewage arising in the port area shall be disposed off after adequate treatment to conform to the standards stipulated by APPCB and shall be utilized/re-cycled for gardening, plantation and irrigation.
- (ix) The Relocation of the fishermen community will be done strictly in accordance with the norms prescribed by the State Government. The relocated fishermen community will be provided with all facilities including health care, education, sanitation and livelihood.
- (x) Adequate plantation shall be carried out along the roads of the Port premises and a green belt shall be developed.
- (xi) Project proponent shall regularly update the Disaster Management Plan from time to time.
- (xii) Fire Fighting arrangements are examined to the new proposal.
- (xiii) There shall be no withdrawal of ground water in CRZ area, for this project. The proponent shall ensure that as a result of the proposed constructions, ingress of saline water into ground water does not take place. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.
- (xiv) The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the PWD/Electricity Department.
- (xv) Specific arrangements for rain water harvesting should be made in the project design and the rain water so harvested should be optimally utilised. Details in this regard should be furnished to this Ministry's Regional Office at Bangalore within 3 months.

- (xvi) The facilities to be constructed in the CRZ area as part of this project should be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently.
- (xvii) Land reclamation shall be carried out only to the extent that it is essential for this project.
- (xviii) Green buffer zone shall be provided all around the project area in consultation with local forest department and the report submitted to this Ministry's Regional Office at Bangalore.
- (xix) No product other than those permissible in the Coastal Regulation Zone Notification, 1991 shall be stored in the Coastal Regulation Zone area.

B. General Conditions

- (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.
- (ii) Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.
- (iii) The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater 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.
- (iv) The proponent shall obtain the requisite consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 from the Andhra Pradesh Pollution Control Board before commissioning of the project and a copy of each of these shall be sent to this Ministry.
- (v) The proponents shall 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 inspection to the concerned State/Central officials during their visits.
- (vi) 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.

- (vii) The sand dunes and mangroves, if any, on the site should not be disturbed in any way.
- (viii) 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.
- (ix) 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.
- (x) 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 Bangalore and the State Pollution Control Board.
- (xi) 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.
- (xii) 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.
- (xiii) This Ministry reserve the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.
- (xiv) This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.
- (xv) The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen at Website of the Ministry of Environment & Forests at <http://www.envfor.nic.in>. 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.
- (xvi) 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.

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 subsequent amendments and the Public Liability Insurance Act, 1991 and the Rules made

thereunder 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 18th April, 1996 in the Writ Petition No.664 of 1993 to the extent the same are applicable to this proposal.

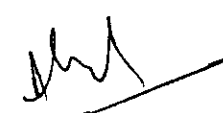

(A. Senthil Vel)
Joint Director

To

✓
Shri K. Upendra Rao.
President,
Gangavaram Port Limited.
Plot No.208, Road No.14.
Jubilee Hills, Hyderabad-500033.
Andhra Pradesh.

Copy to:

1. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, II Block, Koramangala, Bangalore - 560034.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110032.
3. Shri T. Chatterjee, IAS, Principal Secretary to Government, Environment Forests Science and Technology Department, Secretariat, Hyderabad - 500022.
4. DIG (SU), Regional Office Cell, Ministry of Environment & Forests, New Delhi.
5. The Chairman, Andhra Pradesh State Pollution Control Board, Hyderabad.
6. Director EI Division, Ministry of Environment & Forests, New Delhi
7. Guard File.
8. Monitoring Cell.


(A. Senthil Vel)
Joint Director



ANDHRA PRADESH POLLUTION CONTROL BOARD
D.No.33-26-14D/2, Near Sunrise Hospital, Pushpa Hotel
Centre,
Chalamavari Street, Kasturibaipet, Vijayawada - 520 008
Phone. No.0866-2436200, Website : www.pcb.ap.gov.in

CONSENT ORDER FOR ESTABLISHMENT

Order No: APPCB/ VSP/ VSP/ 113/ CFE/ HO/ 2012

16/08/2022

Sub: **APPCB - CFE - M/s. Gangavaram Port Limited, Gangavaram (V), Pedagantyada (M), Visakhapatnam District** - Consent for Establishment (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. CFO order No.APPCB/VSP/VSP/113/CFO/HO/2020 dt.10.09.2020.
 2. EC order dt.24.12.2021 issued by MoEF & CC, GoI for expansion project.
 3. Port facility's CFE(Exp) application received through APOCMMS on 13.06.2022.
 4. R.O's inspection report dt.16.06.2022.
 5. CFE Committee meeting held on 28.06.2022.
 6. T.O. Ir. dt.12.07.2022.
 7. Port facility's Ir.dt.14.07.2022.
 8. CFE Committee meeting held on 26.07.2022.
 9. T.O. Ir. dt.04.08.2022.
 - 10.RO: VSP mail dt.08.08.2022 reg receipt of balance fee.

- M/s. Gangavaram Port Limited, vide reference 2nd cited, submitted an
1. application to the Board seeking Consent for Establishment (CFE) for expansion project as mentioned below, with an additional investment of Rs.5055.00 Crores.

Proposed Expansion:

S. No.	Name of the cargo	Existing qty as per CFO Order dt.13.01.2016 (MMTPA)	Qty as per EC Clearance dt.24.12.2021 and as per CFE Expansion (MMTPA)	Total qty after CFE expansion (MMTPA)
1	Containers	0.25	7.75	8.00
2	Multi Cargo: Agri products, (Food grains in bags or bulk, Chickpeas, Cereals, Pulses, Sugar, Raw Sugar), Slag, Lime Stone, Bauxite, Steel Products (Steel Beams, Coils, Billets, Angles,	6.20	6.50	12.70

	Channels, Project Cargo), Bulk Alumina & Other cargos.			
3	Coal	25.00	3.25	28.25
4	Iron ore	3.00	2.50	5.50
5	Fertilizer	2.50	0	2.50
6	Industrial Raw Material (Ferro silicon, Charge Chrome, Chrome ore, Coal Tar (Bags), Aluminum Ingots, Aluminum Billets, Bentonite, Pig iron, Manganese ore, Wood items, Paper bundles, CP Coke Bauxite, gypsum, clinker, scrap)	3.50	0	3.50
7	Liquid cargo (edible oil, caustic lye)	0.50	0	0.50
	Total	40.95	20	60.95

2. As per the application, the above expansion activity is to be located in the existing premises of the Port located at **Gangavaram (V), Pedagantyada (M), Visakhapatnam District.**

3. The above site was inspected by Environmental Engineer, Regional Office, Visakhapatnam, A.P Pollution Control Board on 15.06.2022 and found that the port site is surrounded by

North : Gangavaram (V)
South : RINL (Steel Plant)
East : Bay of Bengal
West : Pedagantyada (V)

4. 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.

VIJAY KUMAR GSRKR
IAS, MEMBER SECY(GSRKRVK), O/o
MEMBER SECRETARY-APPCB

To
M/s. Gangavaram Port Ltd., (exp)
Gangavaram (V), Pedagantyada (M)
Visakhapatnam Dist.

Copy to: 1. The JCEE, Z.O: Visakhapatnam for information and necessary action.
2. The E.E., R.O: Visakhapatnam for information and necessary action.

ANNEXURE

1. The Port facility 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 expansion 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 supply is from GVMC and the maximum permitted water consumption after proposed expansion activity is as following:

S. No	Purpose	Qty as per CFO Order dt.13.01.2016 (KLD)	Qty as per EC Order dt.24.12.2021 & proposed CFE Expansion (KLD)	Total quantity after expansion (KLD)
1.	Gardening	25.00	360.00	1754.10
2.	Dust suppression	1296.00		
3.	Ship supply	32.50		
4.	Miscellaneous	40.60		
5.	Domestic	40.00	18.00	58.00
	Total	1434.10	378.00	1812.10

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 , Miscellaneous, Development of greenbelt.

5. The maximum waste water generation (KLD) shall not exceed the following:

S. No	Source	Qty as per CFO Order dt.13.01.2016 (KLD)	Qty as per EC Order dt.24.12.2021 & as per CFE Expansion (KLD)	Total qty after expansion (KLD)
1.	Domestic waste after treatment in STP	32.00	14.40	46.40
	Total	32.00	14.40	46.40

Treatment & Disposal:

S. No.	Effluent Description	Treatment	Disposal
1	Domestic effluent	STPs of capacity - 50 KLD (Existing STP - 35 KLD Proposed STP - 15 KLD)	The treated water shall be utilised for green belt development in own premises.

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:

Existing:

S. No.	Details of Stack	Stack -1 & 2
a.	Attached to:	DG Sets
b.	Capacity	3 X 320 KVA & 1 X 62.5 KVA
c.	Stack height above ground	4m & 6m
d.	Air Pollution Control Equipment:	Acoustic Enclosure

Additional DG Sets not proposed in the expansion project.

7. The port facility 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 port facility 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.

10. 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.

11. Hazardous / Solid Waste details:

The Port Authority shall comply with the following w.r.t disposal of solid waste:

S. No.	Name of the solid waste	Qty as per CFO Order dt. 13.01.2016	Qty proposed for Expansion	Total qty after CFE expansion	Method of Disposal
1.	Waste Oils & Grease	12,000 LPA	---	12,000 LPA	Shall be disposed to authorized Re-processors / Recyclers / to the Cement industries to use as alternate fuel in the kiln routed through M/s APEMCL
2.	Domestic solid waste	10 TPM	3.60 TPM	13.60 TPM	Shall be collected segregated and disposed as per MSW Rules in consultation with GVMC Authorities.
3.	Discarded material, plastic material	10 TPM	0.25 TPM	10.25 TPM	Shall be disposed to authorized recyclers only
4.	Sludge from STP	1.0 TPM	0.165 TPM	1.165 TPM	Shall be composted and used for green belt development
5.	Lead acid batteries	---	---	---	Shall be disposed to authorized recyclers routed through M/s APEMCL

Other Conditions:

12. The Gangavaram port facility shall comply with the conditions stipulated in the EC order dt.24.12.2021 issued by the MoEF, CC & GoI.
13. The Gangavaram port facility shall provide the 4th Continuous Ambient Air quality (CAAQM) station with Beta Ray Attenuation technology as per the EC order condition and as committed in the CFE Committee meeting.
14. The Gangavaram port facility shall get a study carried out by Andhra University or any other reputed institute clearly establishing the Ambient Air Quality Levels with existing system and projected levels if tube conveyor system is not provided considering the proposed expansion activities within 6 months.
15. The Gangavaram port shall Conduct Health camps jointly with medical and health departments Govt. AP in the nearby villages.
16. Fire detection and fire fighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.
17. 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
18. 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.
19. The Port facility shall obtain prior permission from MoEF&CC, GoI 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. 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.
22. 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.
23. 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.

VIJAY KUMAR GSRKR IAS,
MEMBER SECY(GSRKRVK), O/o MEMBER
SECRETARY-APPCB

To
M/s. Gangavaram Port Ltd., (exp)
Gangavaram (V), Pedagantyada (M)
Visakhapatnam Dist.



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 : <http://pcb.ap.gov.in>

Order No. APPCB/VSP/VSP/113/CFO/HO/2020-

10/09/2020

AUTO RENEWAL OF CONSENT AND HAZARDOUS WASTE AUTHORISATION ORDER
FOR OPERATIONS

In response to your application dated 12.08.2020 for Auto Renewal of Consent for Operation & Hazardous waste Authorisation Order, the Board is hereby extending validity period of Consent and Authorisation order issued vide Order APPCB/VSP/VSP/113/CFO/HO/2015, dt: 13.01.2016 and valid upto 31.12.2020, issued under sections 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 Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary, Movement) Rules, 2016 for a further period of 5 (five) years i.e., up to 31.12.2025.

The issue of CFO&HWA (Auto renewal) was placed in the CFO Committee meeting held on 02.09.2020 and the committee observed following: The facility was inspected on 30.07.2020 through computerized allocation of inspections and as per the report, it was mentioned that, "As per EC order dated 07.02.2012 and CFO order dt.13.01.2016, the Gangavaram Port Ltd., shall maintain greenbelt in 50 mtrs width. The GPL has developed 50 mtrs width of greenery towards habitation in north west direction. But, the GPL has to develop 50 mtrs width of green belt in all other three directions".

The representative of the industry attended the meeting through video conference and informed that they had developed 406 acres of greenbelt towards habitation with geo-tagging, the other three sides of the port is sea and a hill-lock and they are participating in green viskha project and developing green belt.

After a detailed discussion, the Committee recommended extending the validity of the CFO & HWA to the facility for a period up to 31.12.2025, with the following conditions:

1. All other conditions mentioned in Schedules A, B & C of the combined CFO&HWA order issued by the Board vide order dated 13.01.2016 will remain same.
2. The facility shall comply with the standards issued by MoEF&CC / CPCB from time to time.
3. The industry 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 1st 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 NABL accredited third party failing which the Consent Order issued **will be cancelled.**
4. The facility shall ensure that dedicated fund is allotted towards Environment Relief Fund (ERF) in the Public Liability Insurance policy and submit a copy of the policy at the Regional Office: Visakhapatnam every year.
5. In case of false certification, non compliance of conditions / directions and

discrepancy in furnishing the information by the industry, the Board can withdraw the auto renewed consent and take action under provisions of relevant Acts & Rules.

6. The facility shall inventorize the storage quantities of hazardous chemicals as per the hazard nature of reactivity / toxicity / flammability / explosive stored/handling in the premises as defined in the Management of Storage, Import of Hazardous Chemicals (MSIHC) Rules, 1989 and the details shall be furnished to the Factories Department and to the Regional Office, APPCB on monthly basis duly certifying the same.
7. The facility shall identify major accident hazard chemicals & list out the hazardous chemicals endangered to human health & environment and the details shall be furnished to the Factories Department and to the Regional Office, APPCB time to time duly certifying the same by the industry. Further the facility shall extend training to the working personnels while handling hazardous chemicals for prevention of accidents and necessary antidotes to ensure the safety, as per the MSIHC Rules, 1989.
8. The facility 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/concerned authority, 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.
9. The facility shall carryout calibration of safety equipments and leak detection systems at regular intervals and shall certify the same with the Factories Department/concerned authority. That certified copy shall be submitted to the APPCB, Regional Office. The facility shall install fluorescent Wind Vane at the highest point in the facility premises.
10. The facility shall inventorize the hazardous wastes and its quantities stored within the facility premises as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (HOWM Rules, 2016) and shall furnish the details to Regional Office, APPCB on monthly basis duly certifying the same by the industry.
11. The facility shall allow import of hazardous cargoes only after the importer complies with the MSIHC Rules, 1989.

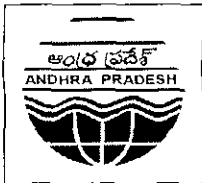
DR. B.MADHUSUDHANA RAO, JCEE(MSRB), O/o JOINT CHIEF ENVIRONMENTAL ENGINEER-4-APPCB

To

**M/s. Gangavaram Port Limited, Gangavaram (V),
Pedagantyada (M),
Visakhapatnam District**

Copy to:

1. The JCEE, Zonal Office, **Visakhapatnam** for information and necessary action.
2. The Environmental Engineer, Regional Office, **Visakhapatnam** for information and necessary action.



RED CATEGORY
RENEWAL OF CONSENT & AUTHORIZATION ORDER
BY REGISTERED POST WITH ACKNOWLEDGEMENT DUE

Consent Order No:APPCB/VSP/VSP/113/CFO/HO/2015-

Date:13.01.2016

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 5 of the Hazardous Wastes (Management, Handling & Transboundary, Movement) Rules, 2008 & Amendments thereof and the rules and orders made there under (hereinafter referred to as 'the Acts', 'the Rules') to :

M/s.Gangavaram Port Ltd.,
Gangavaram Village,
Pedagantyada (M),
Visakhapatnam District - 530 044
E-mail: vasantkumar@gangavaram.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 waste after treatment in STP	32	Shall be used for Dust Suppression / Green Belt development / Industrial use with in port area.

ii) Emissions from chimneys: NIL

iii) HAZARDOUS WASTE AUTHORISATION (FORM - II) [See Rule 5 (4)]:

M/s.Gangavaram Port Ltd., Gangavaram Village, Pedagantyada (M), Visakhapatnam 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 RECYCLING OPTION:

Sl. No	Name of Hazardous Waste	Stream	Quantity	Method of disposal
1.	Waste oil including bilge oil	5.1 of Schedule - I	12000 LPA	Shall be sent to authorized re-processors / recyclers.

This consent order is valid for various port activities with installed capacities as mentioned below:

a) Traffic to be handled at Gangavaram Port

Sl. No	Name of the cargo	Total Capacity (MMTPA)
1	Liquid bulk	0.5
2	Iron Ore	3.0
3	Coal	25.0
4	Agri products	0.75
5	Slag	0.75
6	Containers	0.25
7	Fertilizer	2.50
8	Lime stone	2.50
9	Steel products	0.45
10	Industrial raw material	3.50
11	Bulk Alumina	1.50
	Total	40.95

b) Vessel sizes:

S. No.	Type of Vessel	Total capacities
1	Iron ore, coal, coke	2,00,000 DWT
2	Other dry bulk and general cargo	80,000 DWT

c) Berth Requirements:

S. No	Berth	No's
1	Coal berths (mechanized)	2
2	Iron ore berth (Mechanized)	1
3	Other dry bulk berth (lime stone / fertilizers etc)	1
4	General cargo berth	1
5	Multipurpose berths (General cargo / multipurpose cargo)	4
	Total	9

d) Dimensions of berths:

S. No	Name of the berth	Length	Width	Draft
1	Coal berth (Mechanized)	320	25	19.5
2	Iron ore berth (Mechanized)	316	25	19.5
3	Other dry bulk berth	285	31	15.5
4	Multipurpose berth	275	31	15.5
5	General cargo berth	240	21	14
6	Dry bulk (coal) (Mechanized)	350	25	20.5
7	Multipurpose berths (General cargo / Multipurpose cargo)	285	28	15.5

e) Cargo Storage Areas:

i. Storage area requirement for dry bulk and other dry bulk cargo:

Cargo	Storage demand (T)	Storage area Req. (Sq.M)
Coal	60,86,000	9,05,674
Iron Ore		
Fertilizers / Agri Products		
Limestone		
Slag		

ii. Storage area requirement for Break Bulk Cargo:

Items		Quantity
Through put		2.0 MTPA
Storage Demand	Open	66,000.08 T
	covered	
Storage area required including aisle space factor	Open	2,58,600 Sq.m
	covered	51000 Sq.m

f) Storage area requirement for Container Cargo:

SI No.	Cargo	Storage area requires (sqm)
1.	Container cargo	Container parking yard - 2,00,000
		Container Freight station - 96,000

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 31ST day of December, 2020.

Sd/-
MEMBER SECRETARY

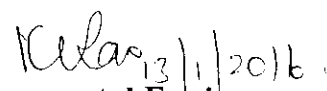
To
M/s.Gangavaram Port Ltd.,
Gangavaram Village,
Pedagantyada (M),
Visakhapatnam District - 530 044.

Copy to :

1. The JCEE, Zonal Office, Visakhapatnam for information and necessary action.
2. The JCEE (Cess), APPCB, Hyderabad for information.
3. The JCEE (HWM), APPCB, Hyderabad for information.
- ✓ 4. The Environmental Engineer, Regional Office, Visakhapatnam for information and necessary action.

// T.C.F.B.O. //

c/c


Joint Chief Environmental Engineer
Unit Head-IV

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. The industry should 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 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. 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.

SCHEDULE-B

WATER POLLUTION:

1. The water consumption quantities are mentioned below:

S. No	Purpose	Quantity
1	Gardening	25
2	Dust suppression	1296.0
3	Domestic	40
4	Ship supply	32.5
5	Miscellaneous	40.6
	Total	1434.1

The source of water is Visakhapatnam Industrial Water Supply Co. The following is the permitted water consumption:

Sl. No.	Purpose	Quantity (KLD)
1	Dust suppression	1296.0
2	Domestic purposes.	40.00
3	Process, whereby water gets polluted and pollutants are easily bio degradable.	73.1
4	Processing, whereby water gets polluted and the pollutants are not easily bio - degradable.	--
	Total	1409.1

Separate meters shall be maintained for assessing the quantity of water used for each of the purposes mentioned above for Cess assessment purpose.

2. The Gangavaram Port Limited (GPL) shall provide separate energy meters for Sewage Treatment Plant (STP) and for Air pollution Control equipments to record energy consumption.

AIR POLLUTION:

1. The Gangavaram Port Limited (GPL) shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10µm) - 100 µg/ m³; PM_{2.5} (Particulate Matter size less than 2.5 µm) - 60 µg/ m³; SO₂ - 80 µg/ m³; NO_x - 80 µg/ m³, outside the port 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)

2. The Gangavaram Port Limited (GPL) shall maintain 3 CAAQMs with online connectivity to APPCB and maintain records.
3. The Gangavaram Port Limited (GPL) shall maintain wind breaking wall all along the Gangavaram village side up to a height 10 mts as wind speed is high in this area.
4. The Gangavaram Port Limited (GPL) shall not establish any other stock yards other than designated stock yards.

5. The Gangavaram Port Limited (GPL) shall maintain Telescopic chute at ship loading points.
6. The Gangavaram Port Limited (GPL) shall not stock the materials more than 10 mts height where MDSS system available and shall restrict to 6 mts for other stocking heights where tanker water spraying system is maintained in the stock yards.
7. The Gangavaram Port Limited (GPL) shall take up the cleaning of road connected to National Highway in co- ordination with GVMC and R&B Departments.
8. The Gangavaram Port Limited (GPL) shall minimize the operations during exceeding of wind velocity more than 20KMPH and all the MDSS sprinklers shall start immediately to maintain AAQ Standards.
9. The Gangavaram Port Limited (GPL) shall maintain fully mechanized handling equipments for loading and unloading operations for dusty cargo to the maximum extent possible.

GENERAL:

1. The Gangavaram Port Limited (GPL) shall maintain the following records and the same shall be made available to the inspecting officers of the Board:
 - a. Cargo handling material wise details
 - b. Log Books for pollution control systems.
 - c. Hazardous/non hazardous solid waste generated and disposed.
 - d. Inspection book.
 - e. Manifest copies of hazardous waste.
2. The Gangavaram Port Limited (GPL) shall dispose solid waste (Non Hazardous) as follows:

S. No	Name of the Solid Waste	Quantity	Disposal
1.	Domestic solid waste	10	Shall be collected, segregated and disposed as per MSW Rules in consultation with GVMC Authorities
2.	Discarded material, plastic material	10	Shall be disposed to authorized recyclers only
3.	Sludge from STP	1.0	Shall be composted and used in green belt programme
4.	Lead acid batteries	---	Shall be disposed to authorized recyclers

3. **The Gangavaram Port Limited (GPL) shall maintain green belt in 50 meters width as stipulated in the EC order dated 07.02.2012.**
4. The Gangavaram Port Limited (GPL) shall not store/handle any hazardous cargo containers within premises.
5. All types of the fertilizers shall be stored in the closed warehouses only. The Port shall ensure that there shall not be any open storage of urea or any other fertilizer materials and all urea & fertilizer material handling warehouses shall be maintained with effluent collection pits for collection and treatment and then used for green belt in the premises after meeting the standards.
6. The Gangavaram Port Limited (GPL) shall store fuel oils used for construction equipment, vessels / vehicles in a well designed manner and protect them against fire hazards by maintaining the compound wall to prevent access to unauthorized

- elements. The surface run off from storage areas shall pass through oil water separator before discharging.
7. The Gangavaram Port Limited (GPL) shall maintain the Malaria control programme, Health facilities, Vector control programmes. Control of all breeding ground shall be carried out by the use of larvicide's in addition to control of adult mosquitoes. The health team shall include a trained entomologist.
 8. The Gangavaram Port Limited (GPL) shall maintain a task force to check the vehicle emissions on permanent basis.
 9. The Gangavaram Port Limited (GPL) shall constitute an Environment Management cell with qualified and trained staff.
 10. The Gangavaram Port Limited (GPL) shall maintain an onsite and offsite emergency action plan after carrying out risk analysis and hazop studies.
 11. The Gangavaram Port Limited (GPL) with VUDA shall ensure that no slum development and unauthorized construction occur in the surrounding area.
 12. The Gangavaram Port Limited (GPL) shall handle alumina in completely closed enclosures. It shall also furnish an action plan to install mechanized system.
 13. The Gangavaram Port Limited (GPL) shall implement the following for controlling fugitive emissions:
 - a) Adequate dust controlling measures should be undertaken for loading and unloading operations for dusty cargo.
 - b) Closed conveyor belt with water sprinkling arrangement for suppression of dust while conveying dusty cargos like Coal, Iron ore & Alumina
 - c) Vehicle movement minimized / eliminated by implementing mechanical operations.
 - d) All the vehicles involved in transportation of cargo covered with tarpaulin.
 - e) Traffic management measures adopted to avoid traffic congestion and provide empty dusting vehicle washing/dry cleaning system to clean all outgoing cargo vehicles.
 - f) Sufficient parking facilities based on traffic density / vehicular movements anticipated from the port.
 - g) Adequate water sprinkling provided on roads and at dusty cargo storage areas for suppression of dust.
 14. The Gangavaram Port Limited (GPL) shall implement the following measures in the cargo handling and stacking area:
 - a) The ship un-loader maintained with in-situ water sprinkling system and unloading hoppers provided with covers on three sides to control fugitive emissions. Iron ore shall be unloaded through wagon tipplers.
 - b) Mechanical stackers cum re-claimers for stacking, transfer and reclamation; Conveyors for transfer of materials to stop manual handling / mobile machines.
 - c) MDSS in stacking areas.
 15. The Gangavaram Port Limited (GPL) shall ensure AAQ standards of the Board on all environmental conditions without fail.
 16. The Gangavaram Port Limited (GPL) shall maintain standby centrifugal pump so as to ensure uninterrupted operation of MDSS.
 17. The Gangavaram Port Limited (GPL) shall maintain compliance of all other conditions of CFE orders issued by the Board.
 18. The Gangavaram Port Limited (GPL) shall comply with Task Force directions and other directions issued by the Board from time to time.

SCHEDULE – C

[See rule 5(4)]

**[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 Gangavaram Port Limited (GPL) shall not store hazardous waste for more than 90 days as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and amendments thereof.
3. The Gangavaram Port Limited (GPL) 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 Gangavaram Port Limited (GPL) shall maintain 6 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 Gangavaram Port Limited (GPL) shall maintain proper records for Hazardous 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 22(2) of the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and amendments thereof.
6. The Gangavaram Port Limited (GPL) shall submit the condition wise compliance report of the conditions stipulated in Schedule A, B & C of this Order on half yearly basis to Board Office, Hyderabad and concerned Regional Office.

Sd/-
MEMBER SECRETARY

// T.C.F.B.O. //

Ulas 3/1/2016
Joint Chief Environmental Engineer
Unit Head-IV

To
M/s.Gangavaram Port Ltd.,
Gangavaram Village,
Pedagantyada (M),
Visakhapatnam District - 530 044.

Appendix B

NFPA Classification

Appendix A: NFPA Classification of Hazardous & Non-Hazardous Materials

S.No	Chemical	Properties	NFPA 704 codes			Health hazard	Precautionary measures
			H	F	R/I		
1	Propane	Boiling Point: -45°C Melting point: -187.6°C Flash Point: -105°C Lower Explosion Limit: 2.2% Upper Explosion Limit: 9.5% Auto Ignition Temperature: 287°C	1	4	0	Eye contact: Liquid can cause burns similar to frostbite. Inhalation: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness. Skin contact: Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite. Ingestion: Ingestion of liquid can cause burns similar to frostbite.	First aid measures: Eye contact: Contact with liquid: Immediately flush with plenty of tepid water (105-115° F; 41-46° C). DO NOT USE HOT WATER. Get immediate medical attention. Inhalation: If inhaled, remove to fresh air. Get medical attention if symptoms occur. Skin contact: Do not use hot water. Flush contaminated skin with plenty of water. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Clean shoes thoroughly before reuse. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Get medical attention if symptoms occur. Do not apply ointment or powders. DO NOT rub or compress the burnt area of skin. DO NOT attempt to remove portions of clothing glued to the skin but cut round them. Ingestion: Not applicable (gas). Firefighting Measures: No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing

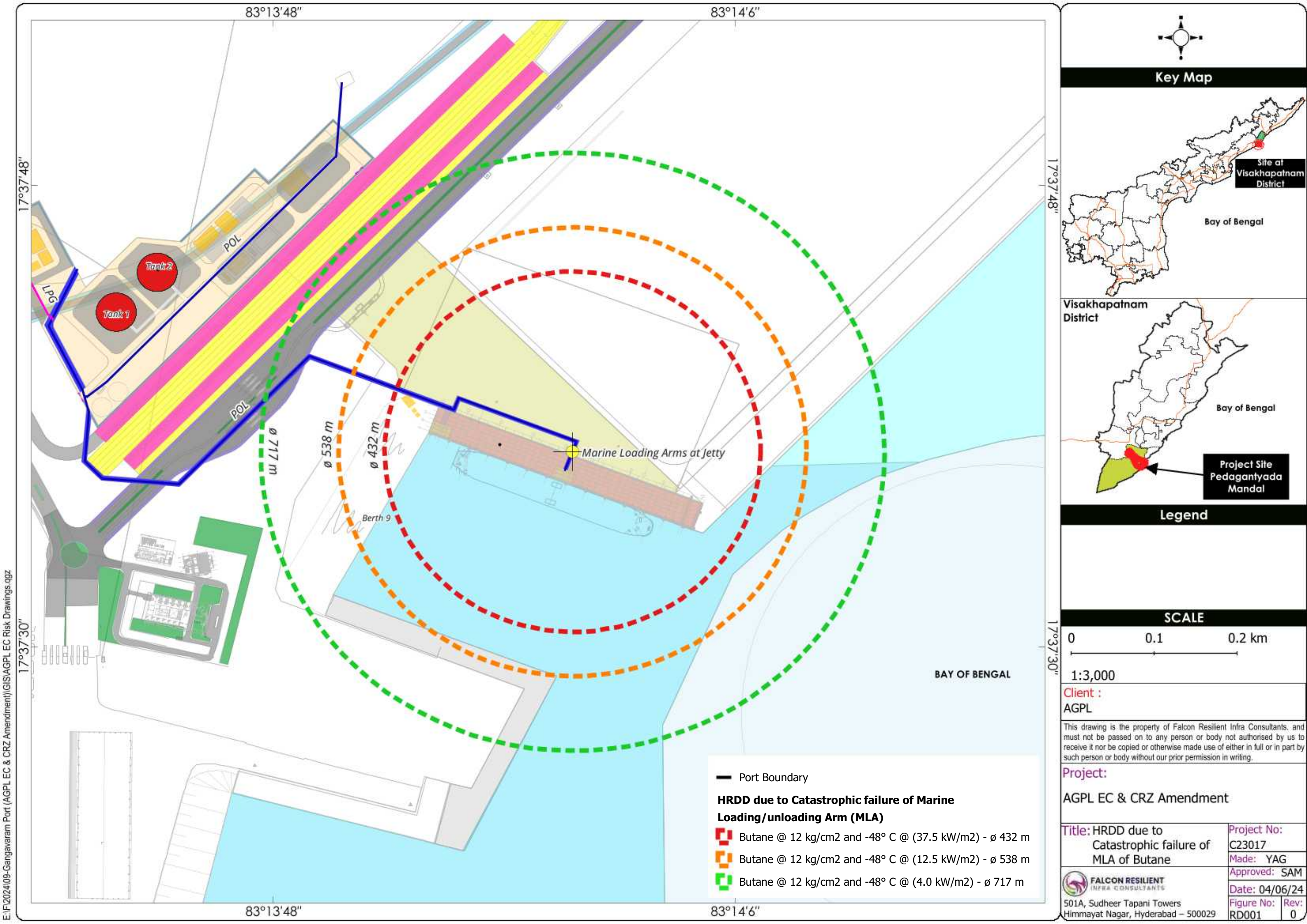
S.No	Chemical	Properties	NFPA 704 codes			Health hazard	Precautionary measures
			H	F	R/I		
							all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so. In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding areas. Every precaution must be taken to keep containers cool to avoid the possibility of a boiling liquid expanding vapour explosion. Pressurised containers are liable to explode violently when subjected to high temperatures. Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.
2	M-Xylene	Boiling Point: 138-139°C Melting point: -48°C Flash Point: 25°C Lower Explosion Limit: 1.1% Upper Explosion Limit:	3	3	0	Potential Acute Health Effects: Hazardous in case of skin contact(irritant, permeator), of eye contact(irritant), of ingestion, of inhalation.	First aid measures: Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

S.No	Chemical	Properties	NFPA 704 codes			Health hazard	Precautionary measures
			H	F	R/I		
		7% Auto Ignition Temperature: 465°C					Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Inhalation: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. Risk of serious damage to the lungs (by aspiration). Ingestion: Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward. Firefighting measures: Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog.
3	Propylene	Boiling Point: >-47°C Flash Point: very inflammable Lower Explosive Limit: 2.0% Upper Explosive Limit: 11.1% Auto Ignition Temperature: 497°C	1	4	0	Potential Acute Health Effects: Concentration in air greater than 10% causes dizziness in few minutes. 1% conc. gives the same symptoms in 10 mts. High concentration causes asphyxiation. Liquid on skin causes frostbite	First aid measures: Eyes: Flush with water for 15 min. Get medical attention. Skin: Frost bite can occur and appropriate treatment for it to be given. Remove the wetted clothes. Wash with warm water & soap.

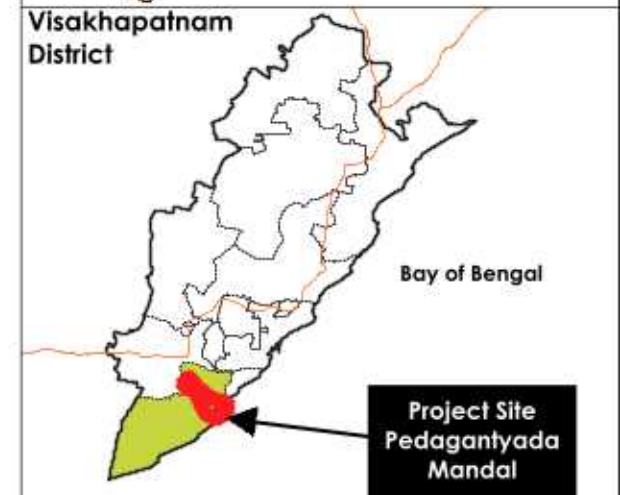
S.No	Chemical	Properties	NFPA 704 codes			Health hazard	Precautionary measures
			H	F	R/I		
							Inhalation: Remove to fresh air. Consult a physician if irritation persists. Firefighting measures: Fires should not be extinguished until flow of product is not stopped. Shut off gas and allow the product to burn. Cool the surroundings with water spray. Fire fighters should wear self-breathing apparatus while fighting fire.
4	Motor Spirit	Flash point: <-10°C Auto Ignition temperature: 250°C-280°C Lower Flammability Limit: 1.4% Upper Flammability Limit: 7.6% Boiling point: 35°C-215°C	1	3	0	Potential Acute Health Effects: Inhalation can cause dizziness, headache and nausea, depresses central nervous system and has an anaesthetic effect. Breathing of liquid droplets may lead to chemical pneumonia. Ingestion can lead to nausea, diarrhoea and affect central nervous system. Skin irritant. Prolonged contact can result in skin drying and dermatitis. Eye irritant.	First aid measures: Eyes: Flush with water for 15 min. Get medical attention. Skin: Wash with warm water & soap. Inhalation: Remove to fresh air. Consult a physician if irritation persists. Ingestion: Do not induce vomiting. Do not give liquids. Get medical help at once. Firefighting Measures: FIRE EXTINGUISHING AGENTS: Dry powder, foam, carbon dioxide Do not use water jets, water fog should be left to experienced personnel. Fires in confined space should be dealt with by trained personnel wearing approved breathing apparatus.
5	LPG	Flash point: -76°C to -156°C Auto Ignition	1	4	0	Potential Acute Health Effects:	First aid measures:

S.No	Chemical	Properties	NFPA 704 codes			Health hazard	Precautionary measures
			H	F	R/I		
		temperature: 320°C-405°C Lower Flammability Limit: 1.8% Upper Flammability Limit: 12.8% Boiling point: >-40°C				Inhalation can cause headache, disorientation, dizziness, drowsiness and possibly Unconsciousness at concentrations that cause oxygen deficiency and asphyxiation. Rapidly expanding gas or vaporized liquid may cause frostbite to skin and eyes	Skin: If freeze burn occurs, gently bathe affected area in warm water (38 – 43) deg.C. Do not rub. Get medical attention. Eye: Immediately flush with large amounts of lukewarm water for 15 minutes, lifting upper and lower lids at intervals. Seek medical attention if irritation persists. Inhalation: Remove to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention. Ingestion: Usually no effect by this route Firefighting measures: Allow the fire to burn under controlled conditions. Stop leak if you can do it without risk. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure.

Figures



Key Map



Legend

SCALE



1:3,000

Client :
AGPL

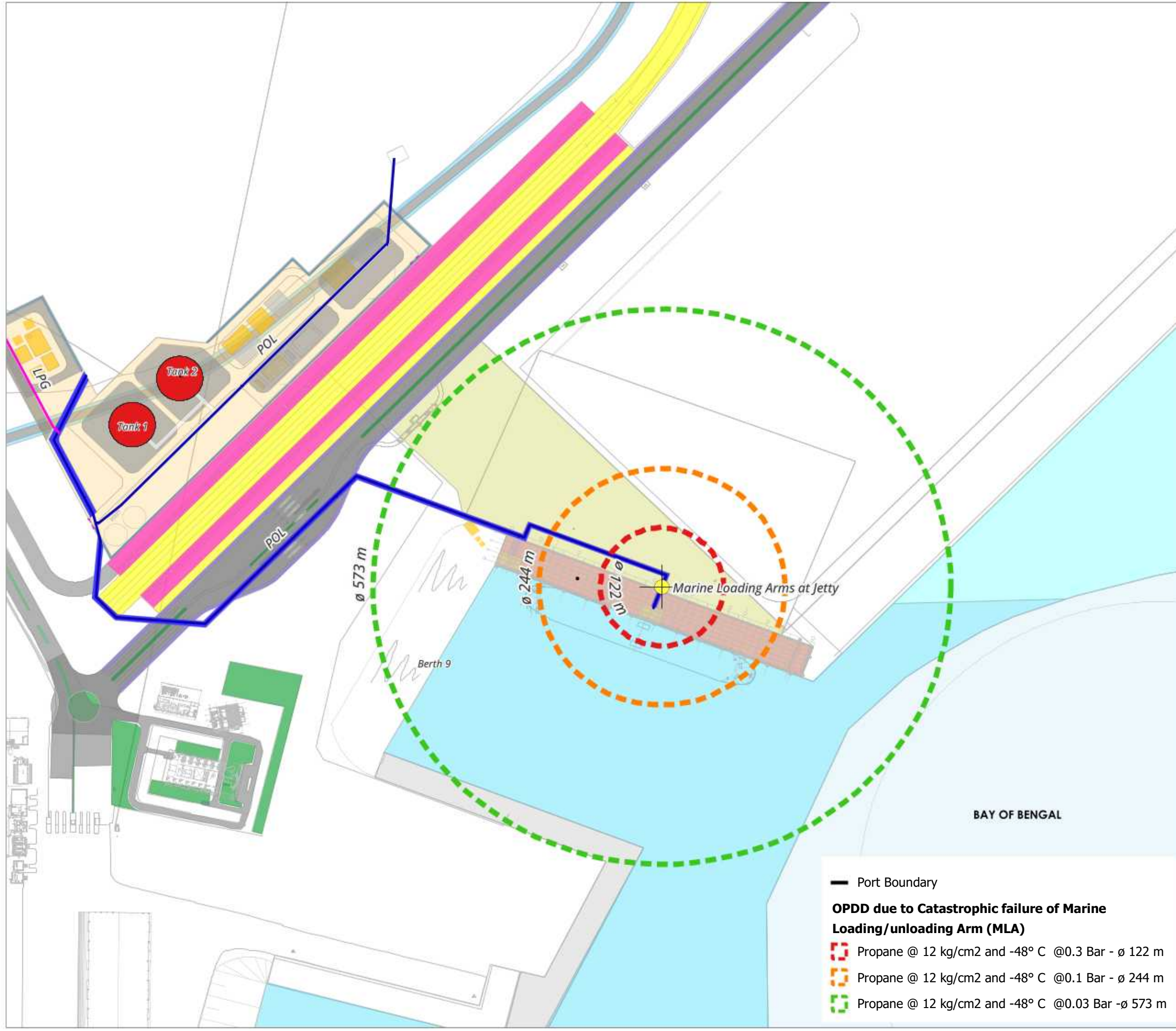
This drawing is the property of Falcon Resilient Infra Consultants. and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:
AGPL EC & CRZ Amendment

Title: HRDD due to Catastrophic failure of MLA of Butane	Project No: C23017
	Made: YAG
	Approved: SAM
	Date: 04/06/24
	Figure No: RD001
	Rev: 0

FALCON RESILIENT
INFRA CONSULTANTS
501A, Sudheer Tapani Towers
Himmayat Nagar, Hyderabad – 500029

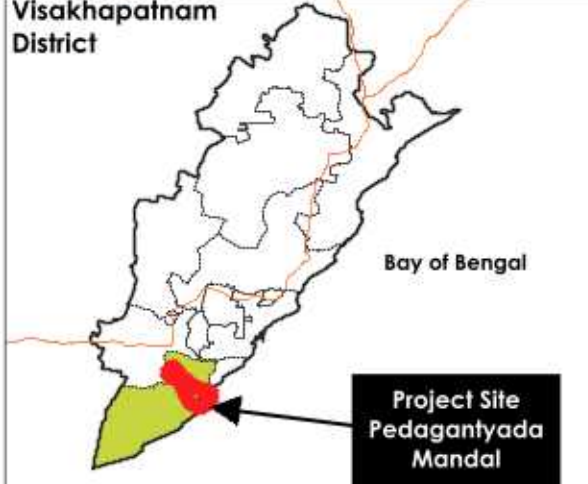
E:\F2024\09-Gangavaram Port (AGPL EC & CRZ Amendment)\GIS\AGPL EC Risk Drawings.dwg



- Port Boundary
- OPDD due to Catastrophic failure of Marine Loading/unloading Arm (MLA)**
- Propane @ 12 kg/cm2 and -48° C @0.3 Bar - ø 122 m
- Propane @ 12 kg/cm2 and -48° C @0.1 Bar - ø 244 m
- Propane @ 12 kg/cm2 and -48° C @0.03 Bar - ø 573 m



Key Map



Legend

SCALE



1:3,000

Client :
AGPL

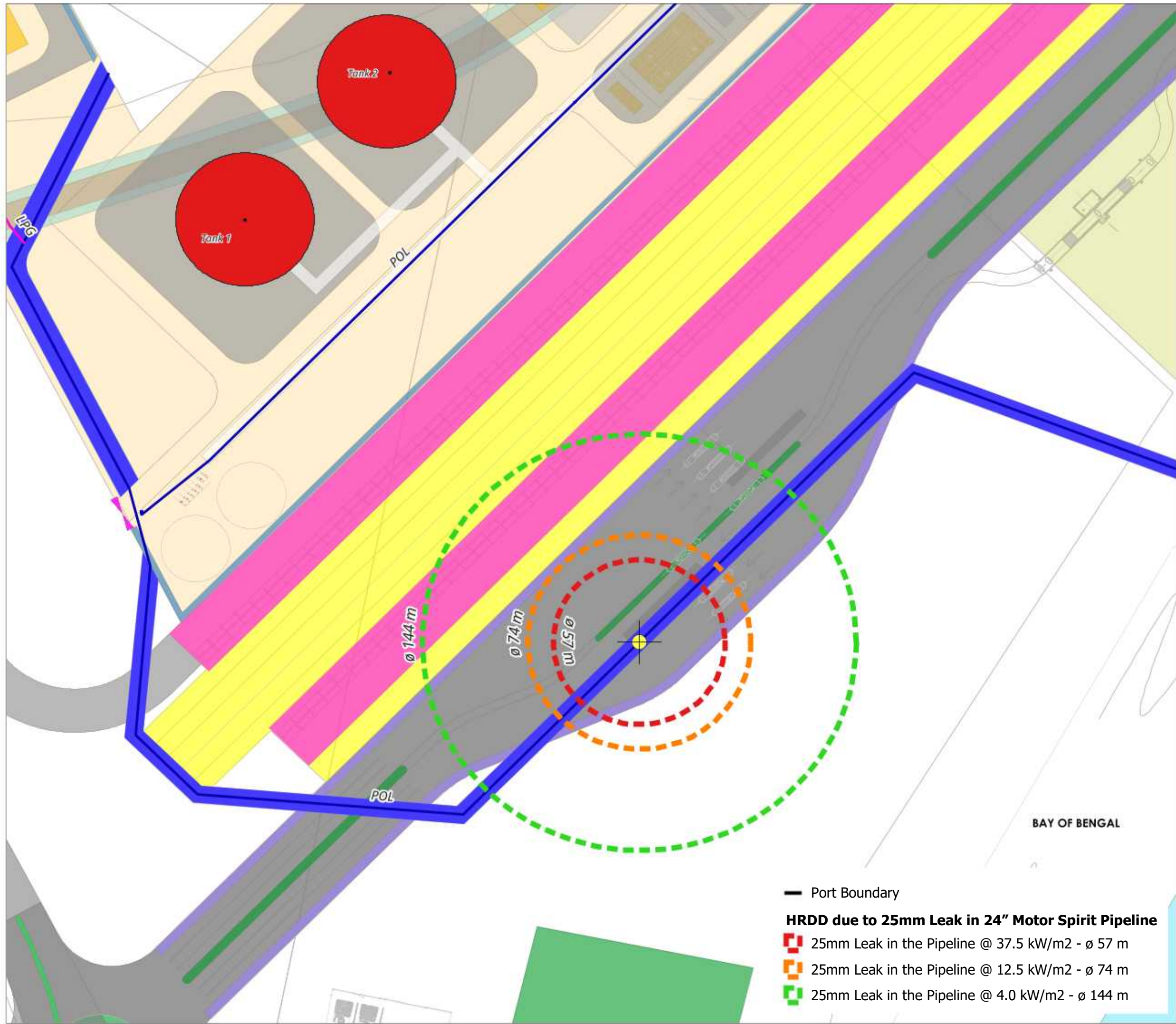
This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:

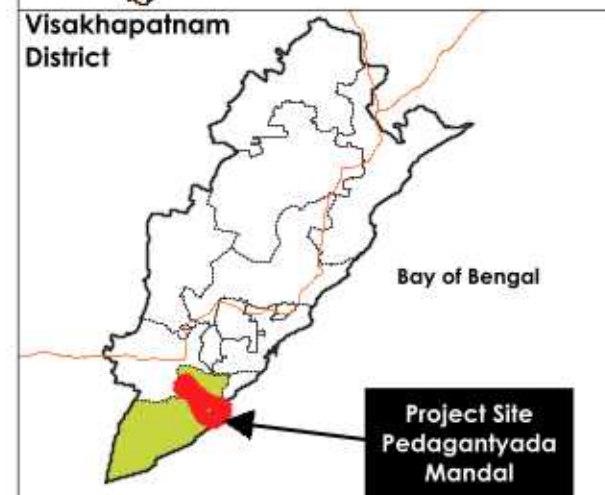
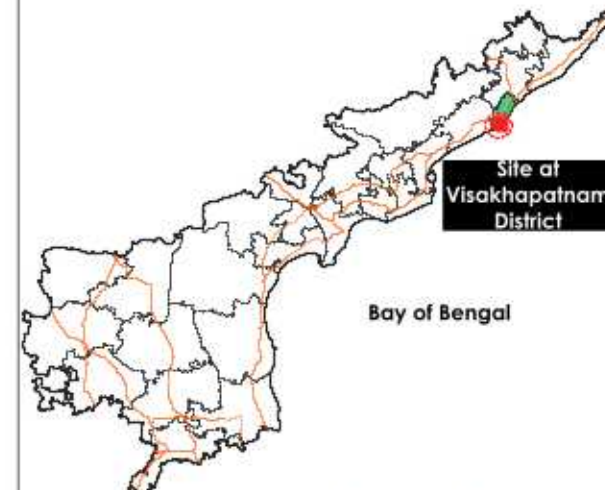
AGPL EC & CRZ Amendment

Title: OPDD due to Catastrophic failure of MLA of Propane	Project No: C23017	
	Made: YAG	Approved: SAM
 501A, Sudheer Tapani Towers Himmayat Nagar, Hyderabad – 500029	Date: 04/06/24	
	Figure No: RD002	Rev: 0

E:\F2024\09-Gangavaram Port (AGPL EC & CRZ Amendment)\GIS\AGPL EC Risk Drawings.dwg

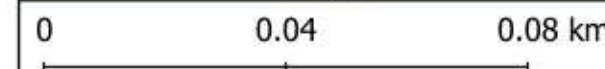


Key Map



Legend

SCALE



1:1,000

Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

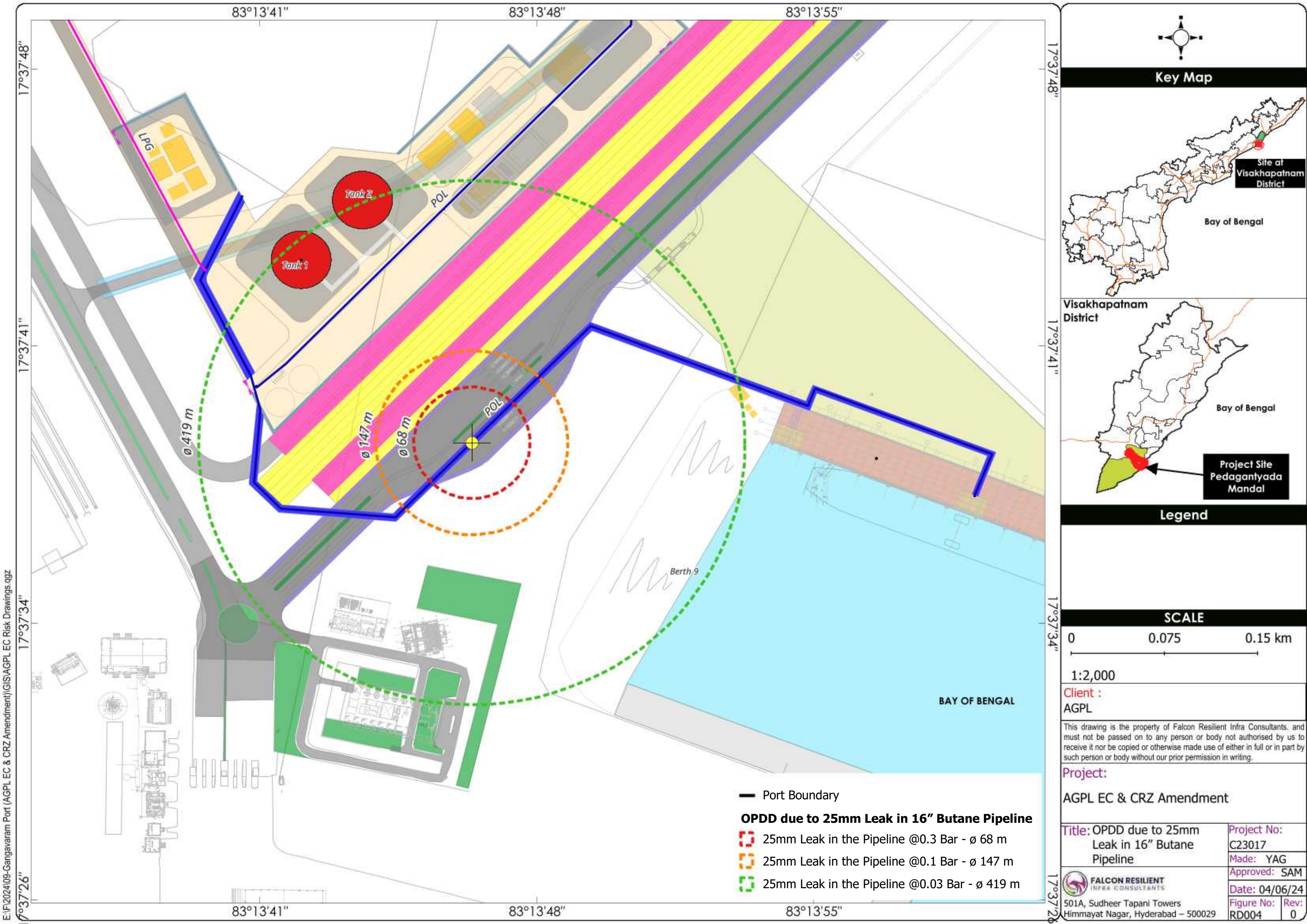
Project:

AGPL EC & CRZ Amendment

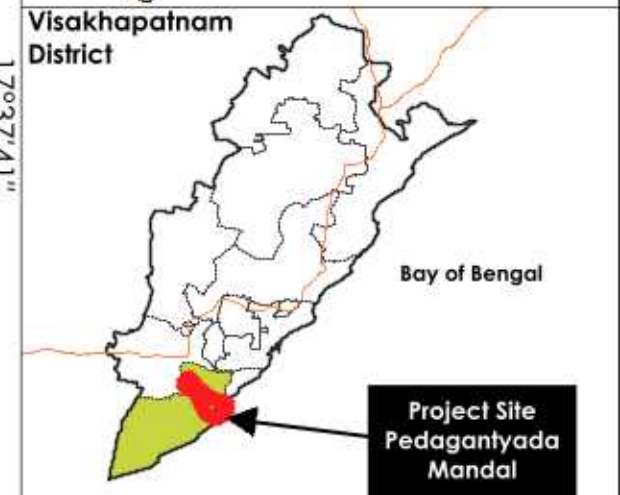
Title: HRDD due to 25mm Leak in 24" Motor Spirit Pipeline

Project No: C23017
Made: YAG
Approved: SAM
Date: 04/06/24
Figure No: RD003
Rev: 0

FALCON RESILIENT
INFRA CONSULTANTS
501A, Sudheer Tapani Towers
Himmayat Nagar, Hyderabad - 500029

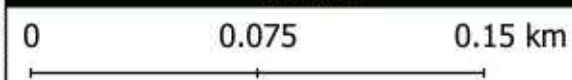


Key Map



Legend

SCALE



1:2,000

Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:

AGPL EC & CRZ Amendment

Title: OPDD due to 25mm Leak in 16 inch Butane Pipeline

Project No: C23017
Made: YAG
Approved: SAM
Date: 04/06/24
Figure No: RD004
Rev: 0

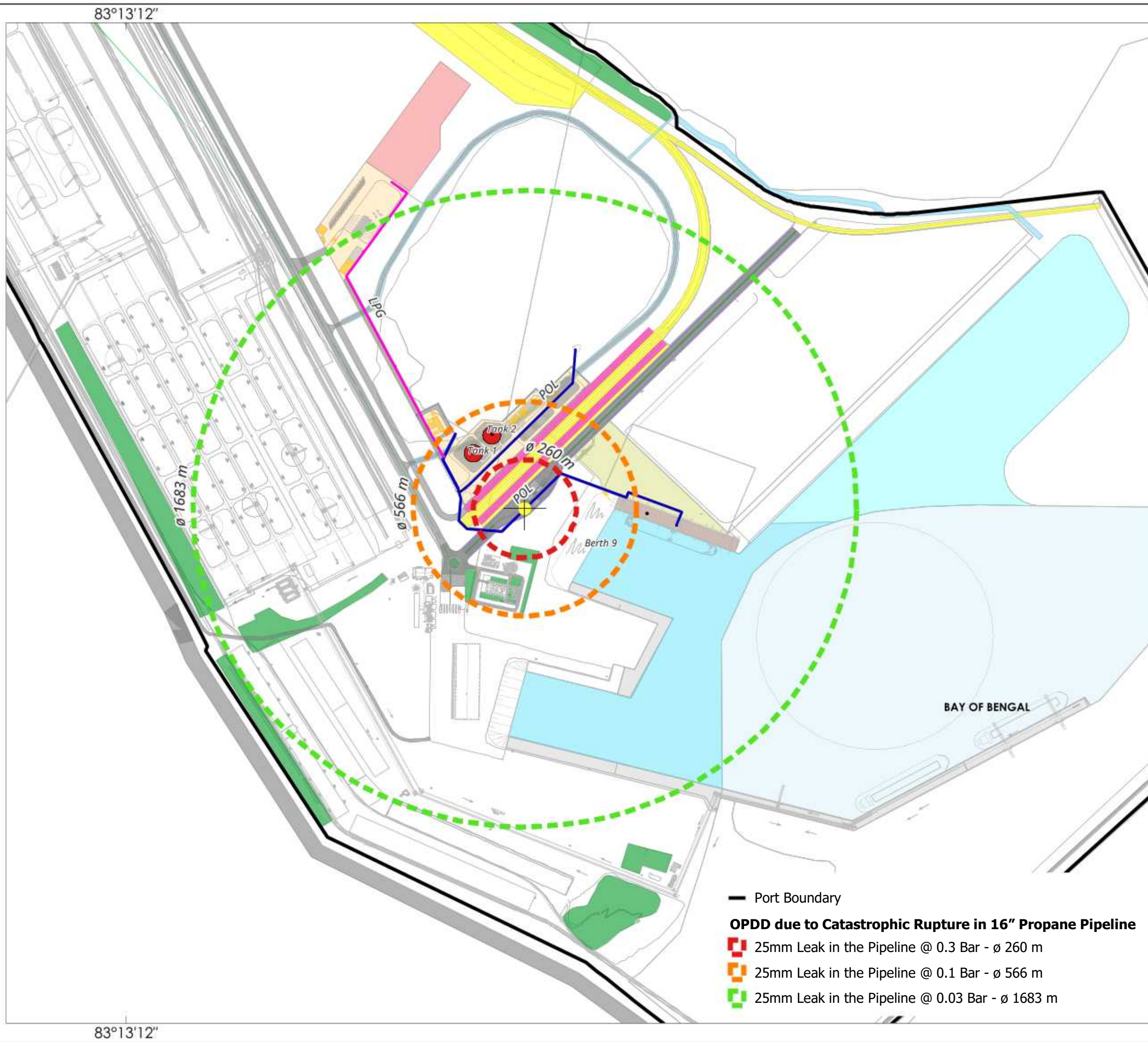
FALCON RESILIENT
INFRA CONSULTANTS
501A, Sudheer Tapani Towers
Himmayat Nagar, Hyderabad - 500029

Port Boundary

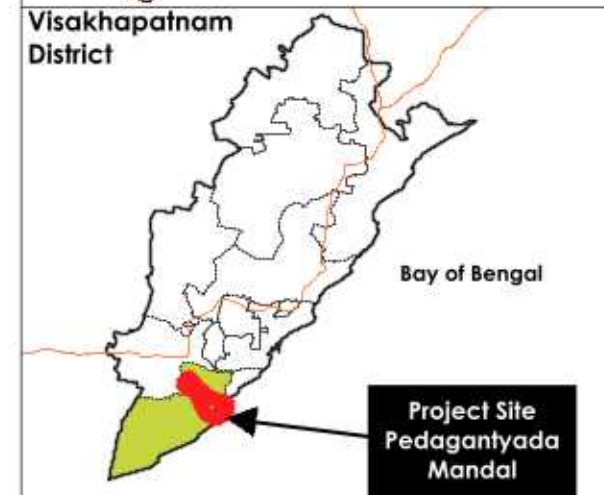
OPDD due to 25mm Leak in 16 inch Butane Pipeline

- 25mm Leak in the Pipeline @0.3 Bar - ϕ 68 m
- 25mm Leak in the Pipeline @0.1 Bar - ϕ 147 m
- 25mm Leak in the Pipeline @0.03 Bar - ϕ 419 m

E:\F2024\09-Gangavaram Port (AGPL EC & CRZ Amendment)\GIS\AGPL EC Risk Drawings.dwg

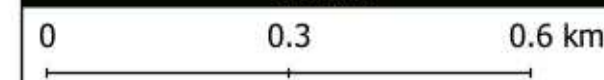


Key Map



Legend

SCALE



1:7,500

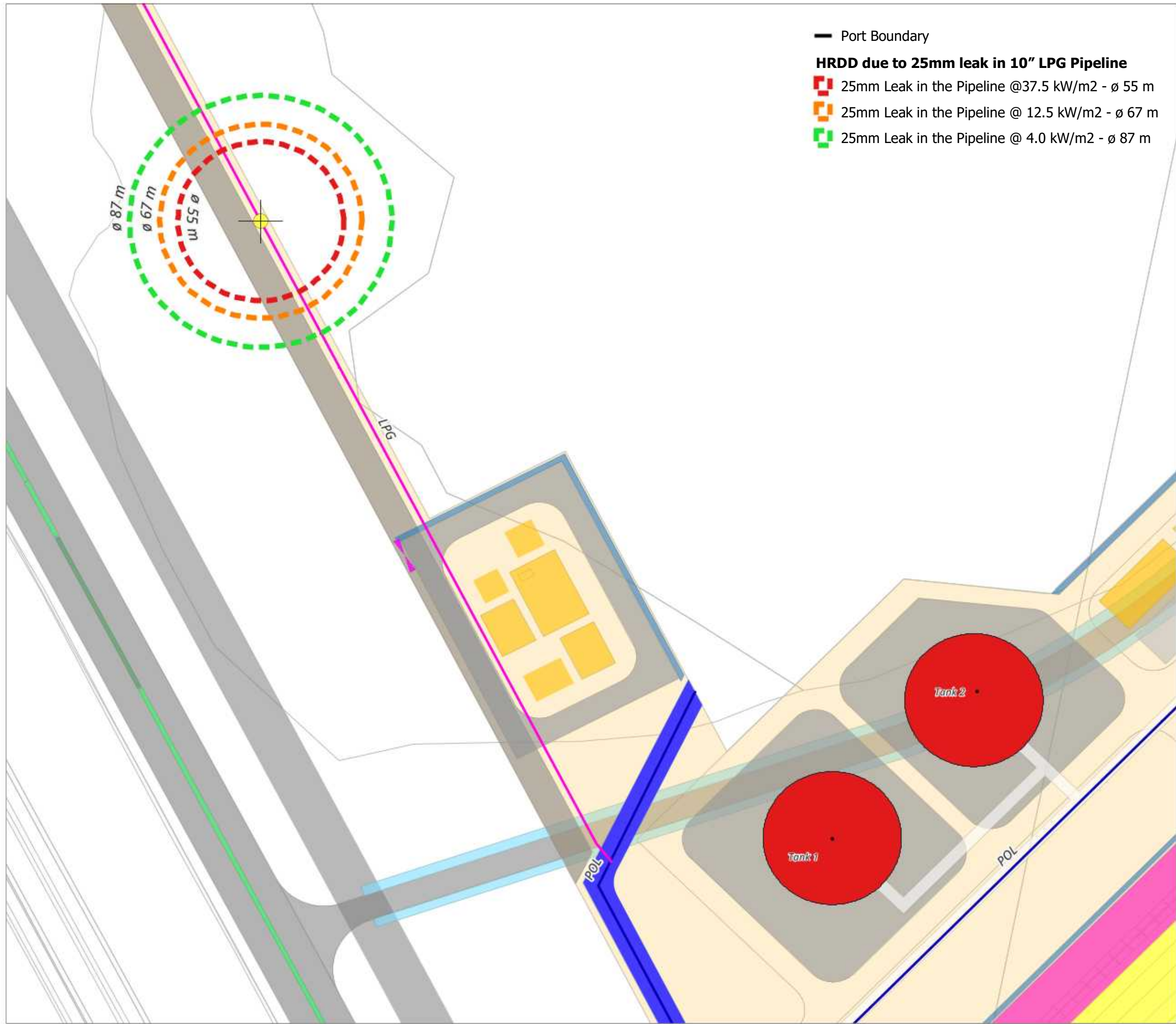
Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:

AGPL EC & CRZ Amendment

Title: OPDD due to Catastrophic Rupture in 16" Propane Pipeline	Project No: C23017	
	Made: YAG	Approved: SAM
FALCON RESILIENT INFRA CONSULTANTS 501A, Sudheer Tapani Towers Himmayat Nagar, Hyderabad - 500029	Date: 04/06/24	Rev: 0
	Figure No: RD005	



— Port Boundary

HRDD due to 25mm leak in 10" LPG Pipeline

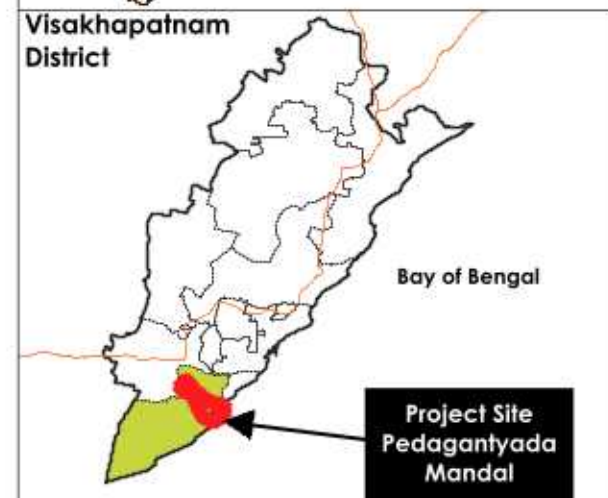
25mm Leak in the Pipeline @ 37.5 kW/m² - ø 55 m

25mm Leak in the Pipeline @ 12.5 kW/m² - ø 67 m

25mm Leak in the Pipeline @ 4.0 kW/m² - ø 87 m



Key Map



Legend

SCALE

0 0.04 0.08 km

1:1,000

Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:

AGPL EC & CRZ Amendment

Title: HRDD due to 25mm leak in 10" LPG Pipeline

Project No:
C23017

Made: YAG

Approved: SAM

Date: 04/06/24

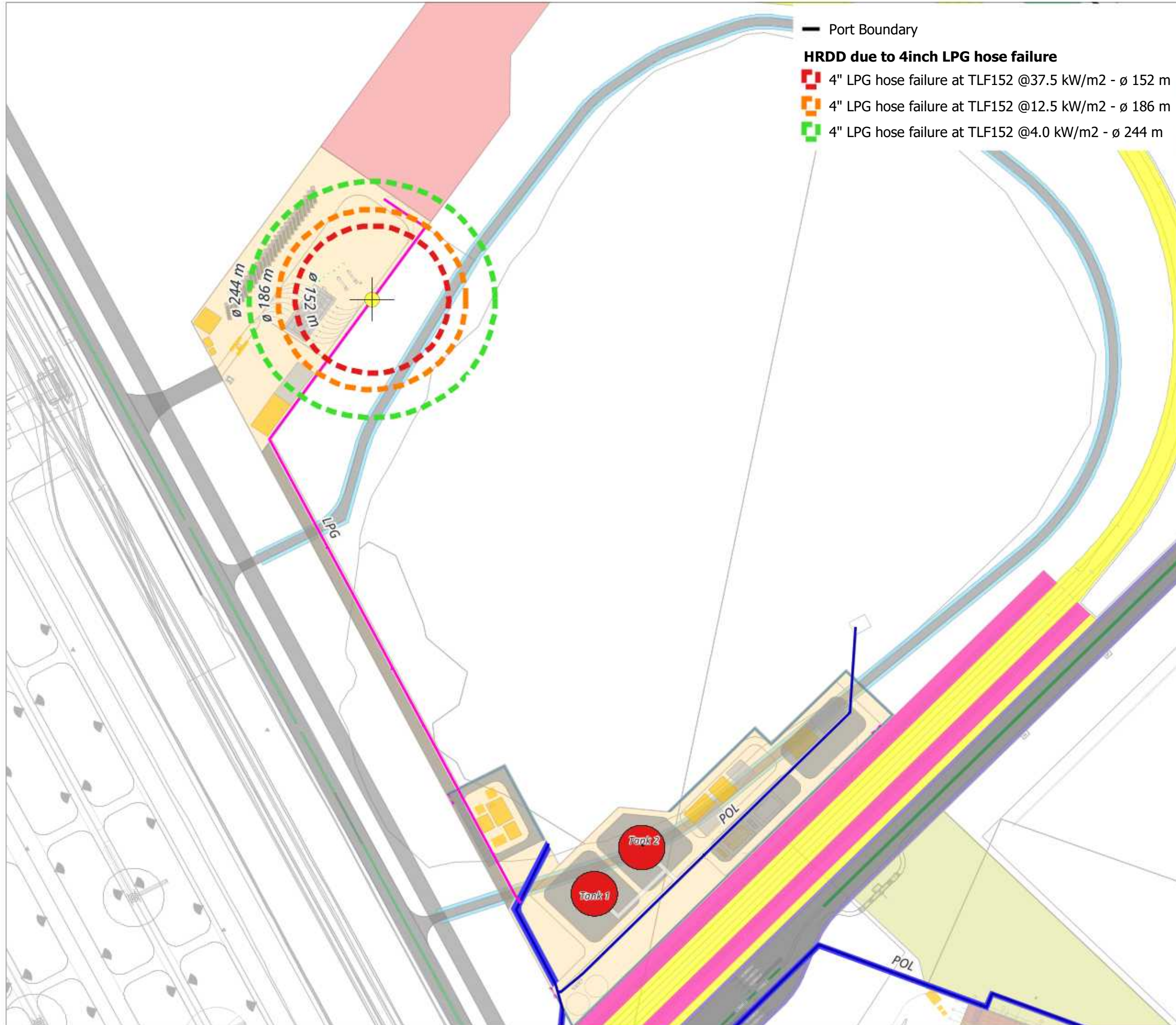
Figure No: RD006

Rev: 0



501A, Sudheer Tapani Towers
Himmayat Nagar, Hyderabad – 500029

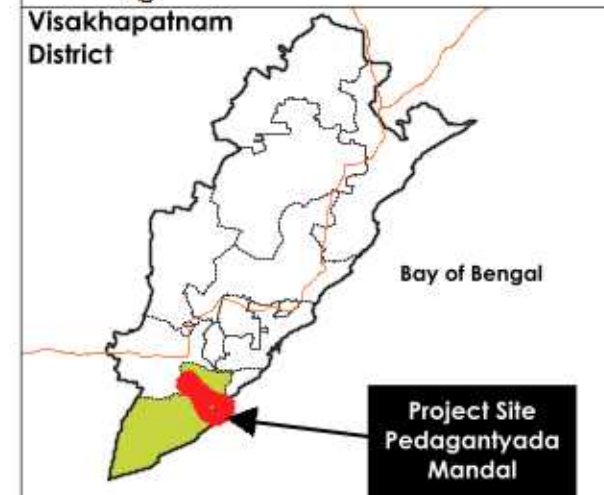
E:\F2024\09-Gangavaram Port (AGPL EC & CRZ Amendment)\GIS\AGPL EC Risk Drawings.dwg



- Port Boundary
- HRDD due to 4inch LPG hose failure**
- 4" LPG hose failure at TLF152 @37.5 kW/m2 - ø 152 m
 - 4" LPG hose failure at TLF152 @12.5 kW/m2 - ø 186 m
 - 4" LPG hose failure at TLF152 @4.0 kW/m2 - ø 244 m



Key Map



Legend

SCALE



1:3,000

Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

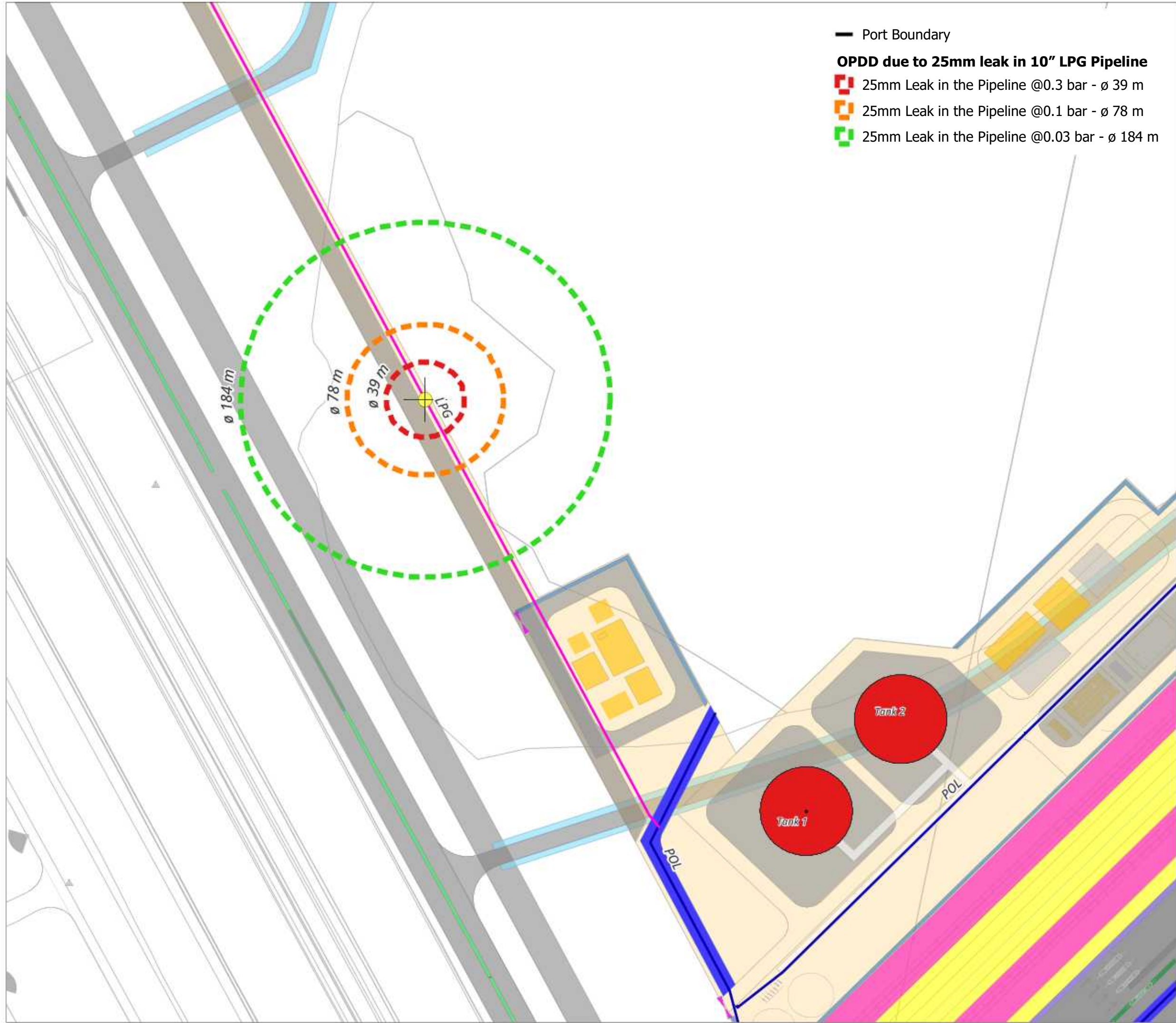
Project:
AGPL EC & CRZ Amendment

Title: HRDD due to 4inch
LPG hose failure

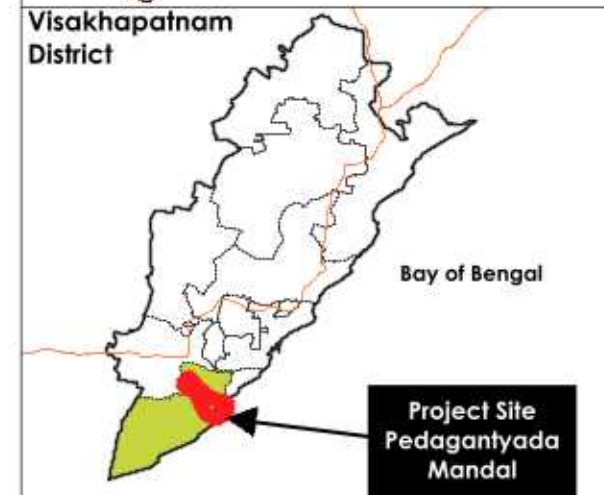
Project No:
C23017
Made: YAG
Approved: SAM
Date: 04/06/24
Figure No: RD007
Rev: 0

FALCON RESILIENT
INFRA CONSULTANTS
501A, Sudheer Tapani Towers
Himmayat Nagar, Hyderabad – 500029

E:\F2024\09-Gangavaram Port (AGPL EC & CRZ Amendment)\GIS\AGPL EC Risk Drawings.dwg

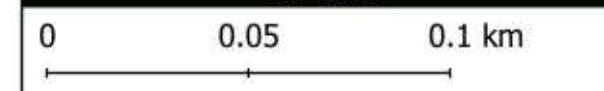


Key Map



Legend

SCALE



1:1,500

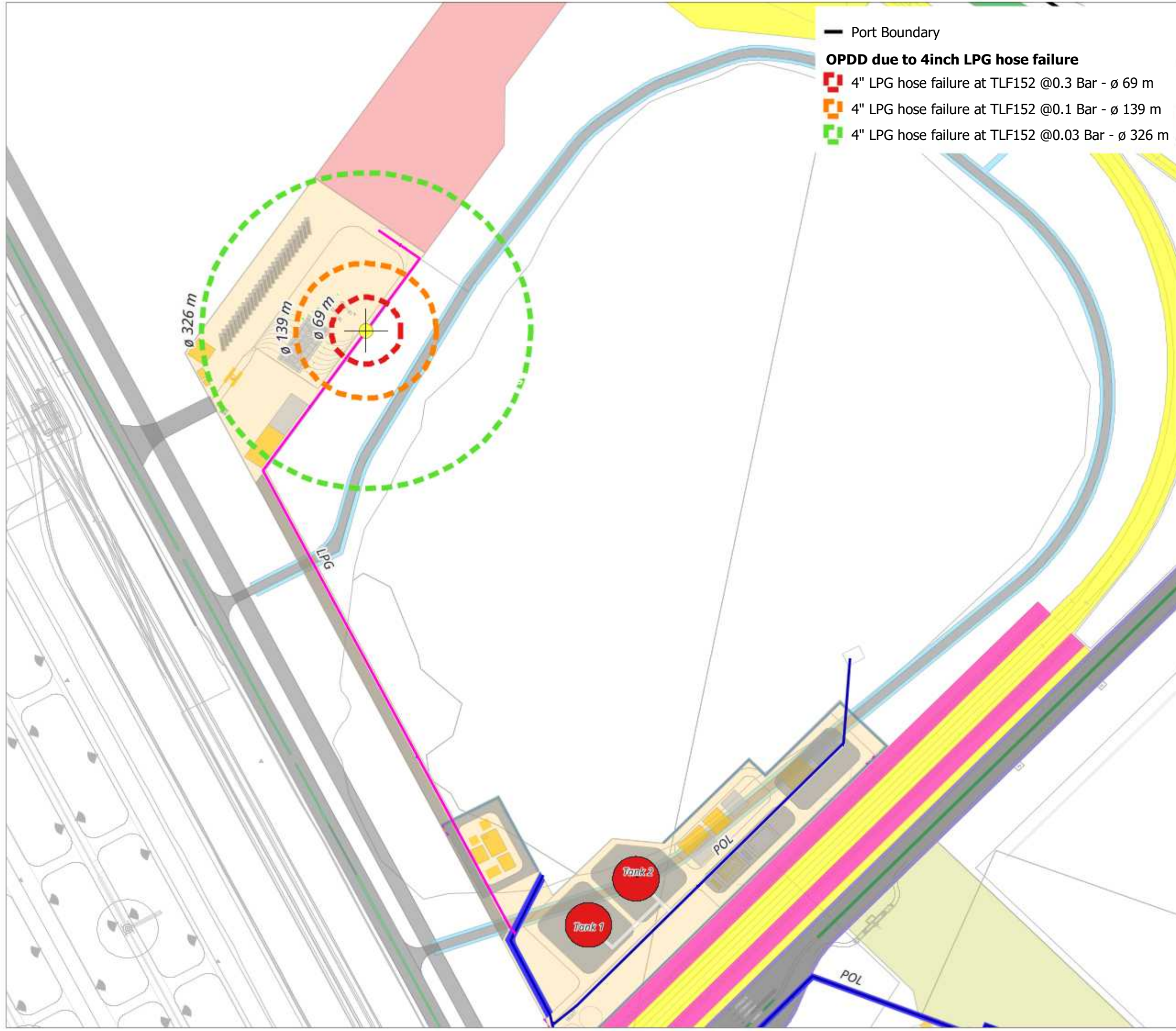
Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:
AGPL EC & CRZ Amendment

Title: RD008-OPDD due to 25mm leak in 10" LPG Pipeline	Project No: C23017	
	Made: YAG	Approved: SAM
FALCON RESILIENT INFRA CONSULTANTS 501A, Sudheer Tapani Towers Himmayat Nagar, Hyderabad – 500029	Date: 04/06/24	Rev: 0
	Figure No: RD008	

E:\F2024\09-Gangavaram Port (AGPL EC & CRZ Amendment)\GIS\AGPL EC Risk Drawings.dwg



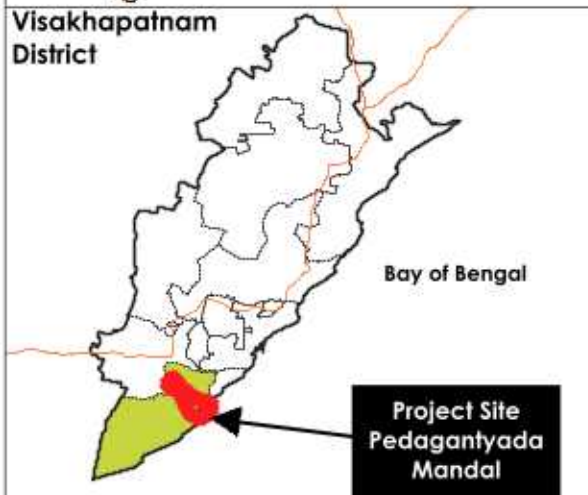
Port Boundary

OPDD due to 4inch LPG hose failure

- 4" LPG hose failure at TLF152 @0.3 Bar - ϕ 69 m
- 4" LPG hose failure at TLF152 @0.1 Bar - ϕ 139 m
- 4" LPG hose failure at TLF152 @0.03 Bar - ϕ 326 m

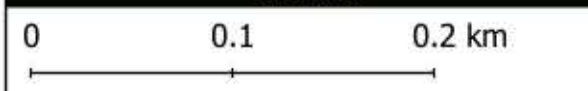


Key Map



Legend

SCALE



1:3,000.022665

Client :
AGPL

This drawing is the property of Falcon Resilient Infra Consultants, and must not be passed on to any person or body not authorised by us to receive it nor be copied or otherwise made use of either in full or in part by such person or body without our prior permission in writing.

Project:
AGPL EC & CRZ Amendment

Title: OPDD due to 4inch
LPG hose failure

Project No:
C23017
Made: YAG
Approved: SAM
Date: 04/06/24
Figure No: RD009
Rev: 0

FALCON RESILIENT
INFRA CONSULTANTS
501A, Sudheer Tapani Towers
Himmayat Nagar, Hyderabad - 500029



FALCON RESILIENT
INFRA CONSULTANTS

501A, Sudheer Tapani Towers
Opposite Telugu academy
Himayat Nagar, Hyderabad- 500029
www.frics.in.
Telephone:040-35607180

ANNEXURE-7
PLI POLICY COPY.



CONTRACT OF INSURANCE

INSURED NAME: ADANI GANGAVARAM PORT LIMITED



INSURER: IFFCO TOKIO General Insurance Company Limited

Policy Type - Public Liability - Act

Policy Period - (15/09/2025 to 14/09/2026)

Servicing Branch : AHMEDABAD

Policy Issuing Office : IFFCO TOKIO GEN INSU. CO. LTD. Ground Floor, IFFCO Bhavan Bh Maruti Arcade, Shivranjani Cross Rd, Satellite AHMEDABAD , GUJARAT - 380015 , GSTIN - 24AAACI7573H1ZI

Issuing Office GSTIN : 24AAACI7573H1ZI

Corporate Office : IFFCO TOKIO GEN INSU. CO. LTD. 4th - 5th Floor, IFFCO Towers Plot No 3, Sector 29, GURGAON (HARYANA) - 122001

Policy No : 41107066

Unique Invoice No : 41107066

Invoice Date : 17/09/2025

SAC : 997139

Intermediary Details : ACE INSURANCE BROKERS PVT LTD

POLICY SCHEDULE CUM TAX INVOICE

Insured	ADANI GANGAVARAM PORT LIMITED	
GSTIN	37AAVCA4772D1ZB	
Address	GANGAVARAM PORT LIMITED	
	GANGAVARAM POST	
	PEDAGANTYADA,	
	VISAKHAPATNAM	
	GVMC (PART)	
	Pin Code	530044
Place of Supply	ANDHRA PRADESH	
CKYC Number	*****8149	
Contact No	*****898	
Email	Me*****@adani.com	
Business Description	Port	
Policy Period	15/09/2025 - 14/09/2026	
Co Insurance Details	NA	
Limit of Liability	Cover	
	50,000,000 per occurrence and 150,000,000 in the aggregate	
Deductible	NA	
Territorial Limits	INDIA	
Jurisdiction	INDIA	
Turnover Details	INR 15,765,493,000	
Policy Type	Occurrence Based	
Premium	Premium Excluding Taxes: INR 5,161.00 CESS (0%): INR 0.00 GST - SGST (0%): INR 0.00 - UGST (0%): INR 0.00 - CGST (0%): INR 0.00 - IGST (18%): INR 928.98 ERF Amount: INR 5,161.00 Total Premium / Invoice Value : INR 11,251.00	
GST Related Declarations	Whether GST is Payable on Reverse Charge Basis- No	
	We hereby declare that though our aggregate turnover in any preceding financial year from 2017-18 onwards is more than the aggregate turnover notified under sub-rule (4) of rule 48, we are not required to prepare an invoice in terms of the provisions of the said sub-rule.	
Other Terms and Conditions	All Other terms & conditions as per Policy Wordings attached.	

Disclaimer:

The issuance of this Insurance Policy is subject to satisfactory verification of KYC documentation of the Client/ Policyholder as per IRDAI Master Circular dated 1st August 2022 on AML/ CFT. In case, if any discrepancy is found in KYC Verification of the Client/ Policyholder, it is agreed by the Client/ Policyholder to complete/ rectify the discrepancy found in the KYC documents/information for the generation of CKYC Number, failing which the policy will be considered ineffective/suspended/ cancelled and no claim will be payable under this Insurance Policy.

Toll Free: 1-800-103-5499; SMS "claim" to 56161 SAC Code: 9971 Regd. Office: IFFCO SADAN, C1 Distt Centre, Saket, New Delhi -110017 Corporate Identification Number (CIN) U74899DL2000PLC107621, IRDA Reg. No. 106 Consolidated Stamp Duty Deposited as per the order of Government of National Capital Territory of Delhi	

POLICY FORM
(PUBLIC LIABILITY INSURANCE – ACT ONLY POLICY)

1. OPERATIVE CLAUSE

Whereas the Insured Owner, named in the Schedule hereto and carrying on business described in the said Schedule, has applied to IFFCO-TOKIO General Insurance Co. Ltd. (hereinafter called the Company) for the indemnity hereinafter contained and has made a written proposal and declaration which shall be the basis of this contract and is deemed to be incorporated herein and has paid the premium and statutory contribution towards the Environment Relief Fund as per the provisions of the Public Liability Insurance Act and the rules framed thereunder.

NOW THIS POLICY WITNESSETH that subject to the terms, exceptions and conditions contained herein or endorsed hereon, the company will indemnify the insured owner against the statutory liability arising out of accidents occurring during the currency of the policy due to handling hazardous substances as provided for in the said act and the rules framed thereunder.

2. DEFINITIONS

- a) "Act" unless otherwise specifically mentioned shall mean the Public Liability Insurance Act, 1991.
- b) "Accident" means an accident involving a fortuitous or sudden or unintentional occurrence while handling any hazardous substance resulting in continuous, intermittent or repeated exposure to death of, or injury to any person or damage to any property but does not include an accident by reason only of war or radio-activity.
- c) "Handling" in relation to any hazardous substance, means the manufacture, processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substance.
- d) "Hazardous Substance" means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act, 1986, and exceeding such quantity as may be specified, by notification, by the Central Government.
- e) "Owner" means a person who owns, or has control over handling any hazardous substance at the time of accident and includes:-
- (i) in the case of a firm, any of its partners;
 - (ii) in the case of an association, any of its members, and
 - (iii) in the case of a company, any of its directors, managers, secretaries or other officers who is directly in-charge of and is responsible to the company for the conduct of the business of the company.
- (f) "Turnover" shall mean –
- i) Manufacturing units – Annual Gross Sales including all levies and taxes.
 - ii) Godown/warehouse owners – Annual rental receipts.
 - iii) Transport Operators – Annual freight receipts
 - iv) Others – Annual gross receipts

3. EXCLUSIONS

This Policy does not cover liability:

- (1) arising out of willful or intentional non-compliance of any Statutory Provisions.
- (2) in respect of fines, penalties, punitive and/or exemplary damages.
- (3) arising under any other legislation except in so far as is provided for in Section 8 Sub-Section (1) and (2) of the Act.
- (4) arising out of damage to property owned, leased or hired or under hire purchase or on loan to the Insured or otherwise in the Insured's control, care or custody.
- (5) directly or indirectly occasioned by, happening through or in consequence of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power.
- (6) directly or indirectly caused by or contributed to by
 - a) ionizing radiations or contamination by radio activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel.
 - b) the radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.

4. CONDITIONS

- (1) The Insured Owner shall give written notice to the Company as soon as reasonably practicable of any claim made against the Insured Owner or any

specific event or circumstance that may give rise to a claim. The Insured shall immediately give to the Company copies of notice of application(s) forwarded by the Collector and all such additional information and or assistance that the Company may require.

(2) No admission, offer, promise or payment shall be made or given by or on behalf of the Insured owner under this policy without the written consent of the Company.

(3) The Company shall not be liable for any claims for relief made after five years from the date of occurrence of the accident.

(4) The Insured Owner shall keep record of annual turnover, and at the time of renewal of insurance declare such turnover and all other details as may be required by the Company. The Company shall at all reasonable times have full rights to call for and examine such records.

(5) If at the time of happening of any accident, resulting in a claim under this policy, there be any other insurance covering the same liability, then the Company shall not be liable to pay or contributes more than its ratable proportion of such liability.

(6) This Policy may be cancelled by the Insured Owner by giving 30 days notice in writing to the Company in which event the Company will retain premium at short period scale subject to there not having occurred an accident during the policy period which may give rise to a claim(s), failing which no refund of premium shall be allowable.

(7) This Policy may also be cancelled by the Insurer by giving 30 days notice in writing to the Insured Owner in which event the Company shall be liable to repay on demand a rateable proportion of the premium for the unexpired term from the date of cancellation.

(8) If the Company shall disclaim liability to the Insured Owner for any claim hereunder and such claim shall not within 12 calendar months from the date of such disclaimer have been made the subject matter of a suit in a competent court of law, then the claim for all practicable purposes shall be deemed to have been abandoned and shall not thereafter be recoverable hereunder or be made the subject matter of any suit.

(9) The Company shall not be liable to make any payment in respect of any claim if such claim shall be in any manner fraudulent or supported by any person on behalf of the Insured and/or if the insurance has been continued in consequence of any material mis-statement or non-disclosure of any material information by or on behalf of the Insured. In such a case, if the Company pays any amount to the claimant due to any statutory provisions, such amount shall be recoverable from the Insured.

(10) The Policy and the Schedule shall be read together as one contract and any word or expression to which a specific meaning has been assigned in the Act and the Rules framed thereunder or this Policy shall bear such specific meaning.

(11) Any dispute regarding interpretation of the terms, conditions and exceptions of this Policy shall be determined in accordance with the law and practice of a court of competent jurisdiction within India.

GRIEVANCE OR COMPLAINT

In case of any grievance, We can be contacted at:

Website: <https://www.iffcotokio.co.in/customer-services/grievance-redressal>
Toll free: 1800-103-5499
E-mail: support@iffcotokio.co.in
Courier: Chief Grievance Officer
IFFCO-Tokio General Insurance Co Ltd
IFFCO Tower, Plot no. 3
Sector -29, Gurgaon – 122001

For updated details of grievance officer, kindly refer the link
<https://www.iffcotokio.co.in/customer-services/grievance-redressal>.

Grievance may also be lodged at IRDAI Integrated Grievance Management System

- <https://bimabharosa.irdai.gov.in/>

ANNEXURE-8
E-WASTE GENERATED & DISPOSED
DETAILS (FORM-3)

¹ The authors are grateful to the National Science Foundation (NSF) for the support of this work.

For 40 years, we've been manufacturing portable, rugged, on-site air quality testing and monitoring equipment for over 40 years. We're proud to have been a part of your business for 40 years.

[illegible][illegible]

1. Company Name: [Name of the Company] 2. Address: [Address of the Company] 3. City: [City of the Company] 4. State: [State of the Company] 5. Zip: [Zip of the Company]	6. Phone: [Phone of the Company] 7. Fax: [Fax of the Company] 8. E-mail: [E-mail of the Company] 9. Website: [Website of the Company]			
10. Product/Service: [Product/Service of the Company]	11. Year of Incorporation: [Year of Incorporation of the Company] 12. Number of Employees: [Number of Employees of the Company]	13. Industry: [Industry of the Company]	14. Market: [Market of the Company]	15. Other: [Other of the Company]
16. Comments: [Comments of the Company]	17. Signature: [Signature of the Company] 18. Date: [Date of the Company]	19. Printed Name: [Printed Name of the Company]	20. Title: [Title of the Company]	21. Address: [Address of the Company]

Please Print Name and Address of the Company on the back of the card.

Please Print Name and Address of the Company on the back of the card.

Date: 01/01/2015



Date:

1. **Company Name:** [Name of the Company]

2. **Address:** [Address of the Company]

3. **City:** [City of the Company]

4. **State:** [State of the Company]

5. **Zip:** [Zip of the Company]

ANNEXURE-9
HAZARDOUS WASTE ANNUL RETURNS
(FORM-4)

Annex A
Appendix A of the Environmental
Impact Assessment Report

The following table provides details of the proposed development and the proposed mitigation measures to be implemented during the construction phase.

Item No.		Proposed Development	Proposed Mitigation
1	1.1	Construction of a new 100m x 50m building.	1.1.1. Implement a dust suppression system during construction.
	1.2	Construction of a new 50m x 25m building.	1.2.1. Implement a dust suppression system during construction.
2	2.1	Construction of a new 100m x 50m building.	2.1.1. Implement a dust suppression system during construction.
	2.2	Construction of a new 50m x 25m building.	2.2.1. Implement a dust suppression system during construction.
	2.3	Construction of a new 100m x 50m building.	2.3.1. Implement a dust suppression system during construction.
	2.4	Construction of a new 50m x 25m building.	2.4.1. Implement a dust suppression system during construction.
	2.5	Construction of a new 100m x 50m building.	2.5.1. Implement a dust suppression system during construction.
3	3.1	Construction of a new 100m x 50m building.	3.1.1. Implement a dust suppression system during construction.
	3.2	Construction of a new 50m x 25m building.	3.2.1. Implement a dust suppression system during construction.
4	4.1	Construction of a new 100m x 50m building.	4.1.1. Implement a dust suppression system during construction.
	4.2	Construction of a new 50m x 25m building.	4.2.1. Implement a dust suppression system during construction.

1. ☐ ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED		DATE: 11/10/00	
2. ☐ BY: [Signature]		3. ☐ AUTHORITY: [Signature]	
4. ☐ DATE: 11/10/00		5. ☐ BY: [Signature]	
6. ☐ DATE: 11/10/00		7. ☐ BY: [Signature]	
8. ☐ DATE: 11/10/00		9. ☐ BY: [Signature]	
Part B. Data Used by [Signature] [Signature] [Signature] [Signature] [Signature]			
10. ☐ DATE: 11/10/00			
11. ☐ DATE: 11/10/00			
12. ☐ DATE: 11/10/00			
13. ☐ DATE: 11/10/00			
14. ☐ DATE: 11/10/00			
15. ☐ DATE: 11/10/00			
16. ☐ DATE: 11/10/00			
17. ☐ DATE: 11/10/00			
18. ☐ DATE: 11/10/00			
19. ☐ DATE: 11/10/00			
20. ☐ DATE: 11/10/00			
21. ☐ DATE: 11/10/00			
22. ☐ DATE: 11/10/00			
23. ☐ DATE: 11/10/00			
24. ☐ DATE: 11/10/00			
25. ☐ DATE: 11/10/00			
26. ☐ DATE: 11/10/00			
27. ☐ DATE: 11/10/00			
28. ☐ DATE: 11/10/00			
29. ☐ DATE: 11/10/00			
30. ☐ DATE: 11/10/00			
31. ☐ DATE: 11/10/00			
32. ☐ DATE: 11/10/00			
33. ☐ DATE: 11/10/00			
34. ☐ DATE: 11/10/00			
35. ☐ DATE: 11/10/00			
36. ☐ DATE: 11/10/00			
37. ☐ DATE: 11/10/00			
38. ☐ DATE: 11/10/00			
39. ☐ DATE: 11/10/00			
40. ☐ DATE: 11/10/00			
41. ☐ DATE: 11/10/00			
42. ☐ DATE: 11/10/00			
43. ☐ DATE: 11/10/00			
44. ☐ DATE: 11/10/00			
45. ☐ DATE: 11/10/00			
46. ☐ DATE: 11/10/00			
47. ☐ DATE: 11/10/00			
48. ☐ DATE: 11/10/00			
49. ☐ DATE: 11/10/00			
50. ☐ DATE: 11/10/00			
51. ☐ DATE: 11/10/00			
52. ☐ DATE: 11/10/00			
53. ☐ DATE: 11/10/00			
54. ☐ DATE: 11/10/00			
55. ☐ DATE: 11/10/00			
56. ☐ DATE: 11/10/00			
57. ☐ DATE: 11/10/00			
58. ☐ DATE: 11/10/00			
59. ☐ DATE: 11/10/00			
60. ☐ DATE: 11/10/00			
61. ☐ DATE: 11/10/00			
62. ☐ DATE: 11/10/00			
63. ☐ DATE: 11/10/00			
64. ☐ DATE: 11/10/00			
65. ☐ DATE: 11/10/00			
66. ☐ DATE: 11/10/00			
67. ☐ DATE: 11/10/00			
68. ☐ DATE: 11/10/00			
69. ☐ DATE: 11/10/00			
70. ☐ DATE: 11/10/00			
71. ☐ DATE: 11/10/00			
72. ☐ DATE: 11/10/00			
73. ☐ DATE: 11/10/00			
74. ☐ DATE: 11/10/00			
75. ☐ DATE: 11/10/00			
76. ☐ DATE: 11/10/00			
77. ☐ DATE: 11/10/00			
78. ☐ DATE: 11/10/00			
79. ☐ DATE: 11/10/00			
80. ☐ DATE: 11/10/00			
81. ☐ DATE: 11/10/00			
82. ☐ DATE: 11/10/00			
83. ☐ DATE: 11/10/00			
84. ☐ DATE: 11/10/00			
85. ☐ DATE: 11/10/00			
86. ☐ DATE: 11/10/00			
87. ☐ DATE: 11/10/00			
88. ☐ DATE: 11/10/00			
89. ☐ DATE: 11/10/00			
90. ☐ DATE: 11/10/00			
91. ☐ DATE: 11/10/00			
92. ☐ DATE: 11/10/00			
93. ☐ DATE: 11/10/00			
94. ☐ DATE: 11/10/00			
95. ☐ DATE: 11/10/00			
96. ☐ DATE: 11/10/00			
97. ☐ DATE: 11/10/00			
98. ☐ DATE: 11/10/00			
99. ☐ DATE: 11/10/00			
100. ☐ DATE: 11/10/00			

Date: 11/10/00
 Name: [Signature]
 Title: [Signature]

[Signature]
 Director of the Bureau of
 Criminal Investigation

ANNEXURE-10
ENVIRONMENTAL STATEMENT (FORM-5)

1. **REPLY TO THE MEMORANDUM DATED 15.08.2023**

15.08.2023

1.1

The Government of India has
 issued the following
 orders:-
 1. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

1.2

2. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

1.3

1. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.
2. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.
3. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.
4. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

15.08.2023

The Government of India has
 issued the following
 orders:-
 1. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

2. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

3. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

4. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

5. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

[Signature]



15.08.2023

1. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

2. To provide for the
 establishment of a
 committee to study the
 feasibility of the project.

ANNEXURE

ENVIRONMENTAL STATEMENT FORM-V (See rule 14)

Environmental Statement for the financial year ending with 31st March

PART-A

- I. Name and address of the owner/
Occupier of the industry : Adani Gangavaram Port Limited,
Adani Corporate House,
Shantigram, Nr.Vaishno Devi Circle,
S.G. Highway, Khodiyar,
Ahmedabad – 382421,
Gujarat.
Corporate Office
- II. *Site Office* : *Adani Gangavaram Port Limited*
Gangavaram (Post)
Peda Gantyada (Mandal)
Visakhapatnam – 530 044
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* : **27.09.2025 for the period of 2024 -2025**

PART-B

- I. *Water and Raw Material Consumption* : **Please refer Annexure A**

Water consumption in m³/d
Process:
Cooling:
Domestic:

Name of Products	Process water consumption per unit of products	
	During the previous financial year	During the current financial year
---	---	---

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
Being a port activity, no raw material handling involved.			

** 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 – (Parameter as specified in the consent issued) : Please refer Annexure C

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: : 203.00 tons

Solid Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
a. From process	Municipal Solid waste only. In consultation with GVMC, AGPL made arrangements for daily collection & disposal of the solid waste to GVMC dump site, Pedagantyada, Visakhapatnam	a. The solid waste is being collected & disposed to GVMC dump site on regular basis. b. GVMC segregates the material into dry and wet. The dry waste like plastic, glass, iron, aluminum, cardboard, wooden are separated with the help of

	The average quantity of solid waste generating in the port is 16.92 TPM	dry resource collection center in MSF – VI, Gajuwaka and recycled. The wet material will be treated with windrow fermentation process which converts wet waste into useful organics mixture by emitting low CO2 level. This whole process is under Solid Waste Management Rules 2020 and Amendments thereafter for environment sustainability. c. Some quantity of the Bio-degradable waste is being used as manure for development of greenbelt within the Port premises d. The dry leaves are utilizing for preparation of vermin-compost.

Details of solid waste and Discarded material disposed to GVMC MSW Site during the period from April 2024 to March 2025:

Sl. No.	Month	Quantity (Tons)
1.	Apr-24	14.6
2.	May-24	9.4
3.	Jun-24	10.2
4.	Jul-24	14.7
5.	Aug-24	15.7
6.	Sep-24	17.8
7.	Oct-24	15.2
8.	Nov-24	15.1
9.	Dec-24	22.4
10.	Jan-25	20.9
11.	Feb-25	22.1
12.	Mar-25	24.9
	Total	203.0 tons
	Average per month	16.92 tons
	Average per day	550 kgs

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. **World Earth Day – 22nd April 2024**

Awareness campaign on

- Environment sustainability,
- Protection measures to be adopted to save the environment
- Significance & need of plantation
- Discharging usage of single use plastic
- Water conservation & Rainwater harvesting
- Adopting Reduce, Reuse, Recycle method
- Massive Plantation programme with 500 saplings plantation



2. **World Environment Day - 2024**

On the occasion of World Environment Day, AGPL has organized and conducted weeklong awareness programmes as detailed below:

- On 01.05.2024 has been conducted awareness program in various **Departments in port premises.**
- Field workers, drivers and employees are actively participated in this **Awareness program.**
- Whoever actively participated to share their ideas towards sustainable **Environment, we will be appreciated with them with surprising prize.**
- In this awareness program we are mainly focusing on ground level workers **Because they are, play a key role in industrial sector.**
- We are planning to conduct this awareness program in two days



3. World Ocean Day 8th June

Celebrated World Ocean's Day 8th June 2024 by initiating awareness program at the Port premises and beach cleaning activity.

4. World Nature Conservation Day 28th July, 2024

Conducting the following awareness program within the Port premises to express commitment towards environment protection and environment sustainability.

- Plantation.
- Awareness campaign on:
 - Reduce waste by recycling, composting, and using reusable products.
 - Switch to energy-efficient light bulbs, reduce water usage,
 - Use public transportation or carpool to reduce carbon footprint.

5. Ozone Day – 16th September

Awareness campaign on Ozone Day:

- Reduce waste by recycling, composting, and using reusable products.
- Switch to energy-efficient light bulbs, reduce water usage,
- Use public transportation or carpool to reduce carbon footprint.
- To safeguard and preserve the environment and natural resources.
- To make a commitment to taking action to build a sustainable future and future generations.
- To promote the necessity of sustainable development is one of the day's main objectives.
- To balance between social responsibility, environmental conservation, and economic progress.
- Plantation of 600 saplings within the Port premises.

6. Promotion of Environment sustainability

As a part of promotion of Environment sustainability, AGPL has been continuing by distributed 2500 No. of Clay Ganesh Idols among Port employees & associates at free of cost.



7. **Global Recycling Day – 18.03.2025**

The theme of 2025 Global-recycling day is **Breaking barriers**

AGPL 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



8. **International Day of Forests – 21st March 2025**

The theme for International Day of Forests 2024 is Forests and Innovation: New Solutions for a Better World. The battle against deforestation requires new technological advancements.

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



9. **World Water Day – 22nd March – 2025**

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

The sustainable water management generates several 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.



10

Beach cleaning

Beach Cleaning at RK Beach location with associated with APPCB and GVMC



Annexure – A

Water Source & Water Input - (April 2024 – March 2025)

Month/Year	Raw Water Source (VIWSCO) (KL/Month)
April - 2024	29175
May – 2024	35095
June – 2024	42978
July – 2024	37262
August – 2024	40635
September – 2024	27766
October – 2024	37338
November – 2024	39693
December – 2024	27644
January – 2025	38479
February – 2025	47596
March - 2025	61392
Total	465053
Daily average	1274.18

Fresh Water Consumption (KLD)

Month	Application as per the Consent Order				
	Green belt	Dust Suppression	Domestic	Ship Supply	Misc.
April – 2024	1214.00	25032	960	61.2	175.05
May – 2024	1734.00	30112	1212	61.2	210.57
June – 2024	1592.00	36875	1190	204	257.87
July – 2024	920.00	31971	2220	561	223.57
August – 2024	921.00	34865	1125	153	243.81
September – 2024	708.00	23823	769	627.3	166.60
October – 2024	452.00	32036	2172	581.4	224.03
November – 2024	794.00	34057	1884	102	238.16
December – 2024	828.00	23719	2064	346.8	165.86
January – 2025	1212.00	33015	2064	387.6	230.87
February – 2025	2208.00	40837	1680	102	285.58
March - 2025	2460.00	52674	2196	163.2	368.35
Total KL/Year	15043.00	399015.5	19536.00	3350.70	2790.32
Average/KLD	41.21	1093.19	53.52	9.18	7.64
Consented Qty/KLD	92	1373	75	50	10

Annexure – B

Cargo handled at Adani Gangavaram Port - (April 2024-March 2025)

S. No	Name of the Cargo	Consented quantity (MMTPA)	Commodities handled MMTPA
1.	Containers	5.00	AGPL has handled 26.79 MMTA of Commodities viz., Iron Ore, Coal, Slag, Fertilizer, Limestone, Steel Products, Industrial Raw Material and Bulk Ammonia during the period from April 2024 to March 2025
2.	Multi Cargo	8.00	
3.	Coal	26.00	
4.	Iron Ore	5.50	
5.	Fertilizer	2.50	
6.	Industrial raw material	3.50	
7.	Liquid Cargo	0.50	
	Consented Total	51.00	
8	Screened iron ore fines	1.0 lakh TPM	
9	Crushed Iron Ore	1.0 lakh TPM	

Annexure – C

Two numbers Sewage Treatment Plant (30 KLD and 5 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 the dust suppression / green belt development only.

AGPL also utilizing the Storm water for dust suppression purposes.

STP Treated & Storm water consumption (KLM)

Month/Year	STP Treated & Storm water (KLM)		
	Treated water	Storm Water	Total
April - 2024	388	2268	2520
May – 2024	668	264	652
June – 2024	628	1392	2060
July – 2024	604	1248	1876
August – 2024	604	612	1216
September – 2024	612	1956	2560
October – 2024	580	2916	3528
November – 2024	548	2868	3448
December – 2024	504	3542	4090
January – 2025	333	2854	3358
February – 2025	380	3192	3525
March - 2025	388	3456	3836
Total	5849	26568	32669
Average / Day	16.24	73.80	90.74

Annexure – D

- I. E – Waste in Form – III : Submitted on 02.06.2025 for the FY 2024 - 2025*
(Copy of Acknowledgement attached)
- II. Hazardous Waste in Form – IV : Submitted on 02.06.2025 for the FY 2024 - 2025*
(Copy of Acknowledgement attached)
- III. Used Battery Returns in Form – VIII : Submitted on 02.06.2025 for the FY 2024 - 2025*
(Copy of Acknowledgement attached)

Annexure E
COST OF ENVIRONMENTAL MEASURES FOR THE FINANCIAL YEAR 2024-2025

S. No	Facility details	Description	Cost in Rs.
1.	Pump house power consumption	Kanithi & UGR pump house power consumption cost.	17,35,623.00
2.	MDSS power consumption (Mechanical dust suppression system)	MDSS power consumption cost.	1,81,96,435.00
3.	5 KLD & 30 KLD STP	30 & 5 KLD STP Power Consumption cost.	3,15,620.00
4.	Truck Tyre Washing facility	Power consumption cost	2,85,838.00
5.	CAAQMS Operation & Maintenance	Annual operation & Maintenance of existing 4 nos. of CAAQM Beta Ray Attenuation.	1,41,16,875.00
6.	Water Cost (VIWSCO)	Water consumption for Dust Suppression & other port operations	1,48,23,999.00
7.	Dust suppression water tankers	Dust suppression water tankers cost	1,45,64,546.00
8.	Road sweepers	Road sweeping machines operation, diesel consumption, maintenance & Spare's cost	1,38,55,200.00
9.	Water sampling & analysis	Marine, Drinking, Sewage water sampling & analysis cost	15,49,380.00
10.	Sweeping with manpower	Manual cleaning of Roads, Berths, Godowns & all operational areas	45,33,511.00
11.	5 KLD & 30 KLD STP	30 & 5 KLD STP Operation & Maintenance cost	18,02,400.00
12.	Truck Tyre Washing facility	Operation & Maintenance cost	20,32,800.00
13.	Truck & Wagon Tarpaulin Covering station	Operation & Maintenance cost.	12,91,74,725.00
14.	Greenbelt department	Vermi compost, FYM, Plants, JCB, Transport, Diesel, Vehicle bills cost	1,00,14,743.00
15.	Community development & Awareness Programmes.	Environment day celebrations & Clay Ganesh Idols distribution cost	1,67,500.00
16.	Fire tender	Fire tender New Equipment & Its Operation ,Trailer Pump and Fire tender diesel & maintenance cost (Engine & Tinkering works)	1,09,26,800.00
17.	Solid waste Collection & Dumping	Charges for collection of solid waste from 78 locations of AGPL & dumping at GVMC site	8,04,000.00
18.	IOT & Digital water flow meters	12 no's critical locations installed	31,00,000.00
		Total Amount	24,19,99,995.00

Annexure F

Environmental measures in the Adani Gangavaram Port Limited

M/s Adani Gangavaram Port Limited – AGPL (formerly Gangavaram Port Limited) is located at Gangavaram (PO), Pedagantyada (M), Visakhapatnam District of Andhra Pradesh, India.

AGPL has the unique distinction of being one of the few Greenfield port projects in India which has been implemented on schedule. Construction at the site commenced in December 2005 and the Port commenced trial operations in August 2008.

AGPL has been developed as an all-weather, multipurpose port with water depth upto 20.2 meters, making it the deepest and capable of handling fully laden Cape size vessels of up to 200,000 DWT, with its deep draft berths and efficient operations AGPL has become the gateway port for a hinterland spread over 8 states across Eastern, Western, Southern and Central India. Its ability to handle larger vessels efficiently has resulted in substantial savings to trade and port users. Adani Gangavaram Port Limited provides efficient cargo handling services for a variety of bulk and break-bulk cargo groups including Coal, Iron Ore, Fertilizer, Limestone, Bauxite, Raw Sugar, Project Cargo, Alumina, Steel products etc.

The Port, its related facilities and material handling system are among the most advanced in Asia and meet the highest standards in terms of pollution prevention and safety.

AGPL is presently operating with 9 berths and with consented cargo handling capacity of 51 MTPA for variety of Cargos of bulk and break bulk including coal, iron ore, Multi Cargo (Agri products, Slag, Limestone, Steel products etc.), Fertilizer, Industrial Raw Materials such as Gypsum, Aluminum Ingots and their facilities includes berths, state-of-the-art cargo handling systems, mechanized storage facilities, railway sidings etc.,

The Port extended to 2800 acres, out of which Port development and operation is in 1800 acres only.

- Out of 9 berths, 3 berths (Berth No.4, 5 & 6) are fully mechanized,
- 5 berths (Berth No.1, 2, 3, 7 & 8) are semi-mechanized
- Provides cargo handling services for a variety of bulk and break bulk including coal, iron ore, multipurpose cargo (Agri products, Slag, Limestone, Steel products etc.), and Fertilizer, Industrial Raw Materials etc.
- Berth No. 9 is for container operation.



Berths Layout Image

1. Mechanized Operations:

- 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. Ensuring these measures, the Port can 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 with a cost of more than Rs 21 Cr is established at various locations. AGPL is spending Rs 22 lakhs per month on an average towards water, power charges and maintenance for DSS. Around 20 people are working daily for operating the DSS.
- Mechanical Dust Suppression System (MDSS) is mounted on each of the mobile hopper. Plain water fog systems are provided at receipt points. A dry fog system is installed at the discharge point. The system consists of one water tank mounted on a hopper, two (1 working + 1 standby) pumps for each mobile hopper are provided.

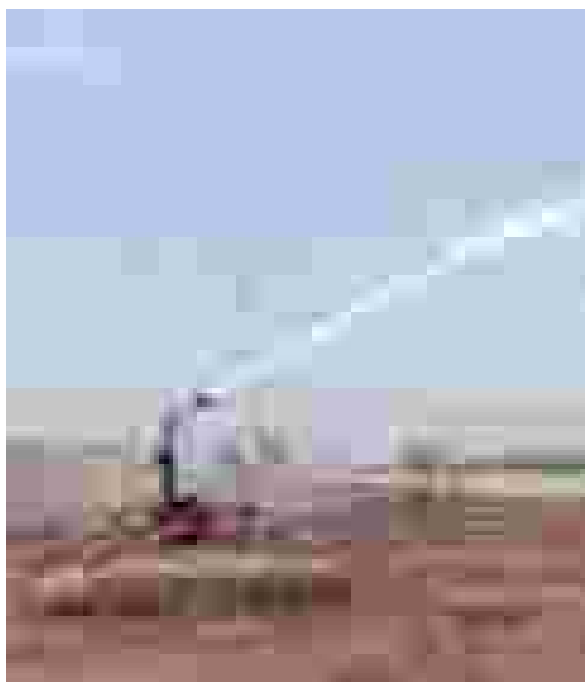
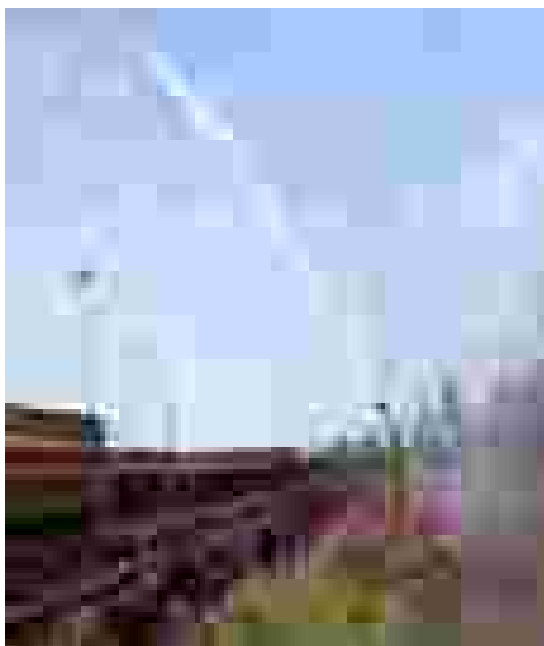
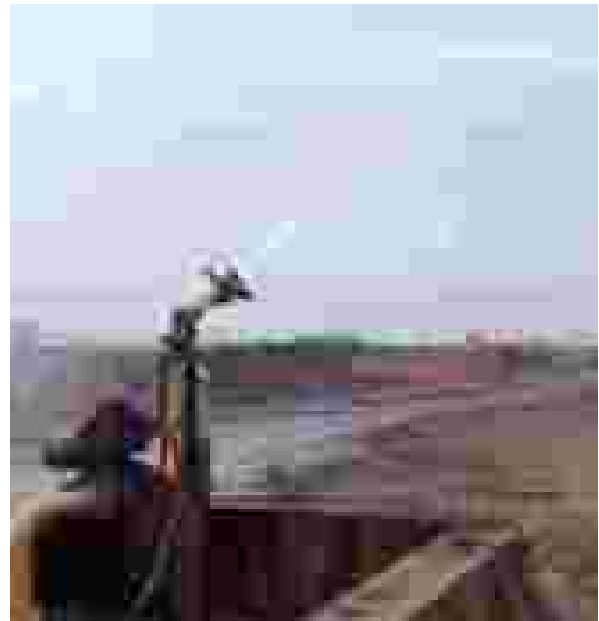


2. Dust Suppression – Mechanical Dust Suppression System (MDSS)

- AGPL provided PLC based Mechanical Dust Suppression System to control the fugitive emission from the dry bulk cargo storage areas i.e., coal and iron ore stockyards and handling areas.
- The total area covered with the water sprinkler system of the facility is classified into seven sections or segments. Two types of sprinklers are provided in the water sprinkling system. Water is sprayed through 176 no. of cannons. The cannons are operated in a cycle for the period of approximately 10 to 15 minutes per shift.
- All the 8 sections shall be operated sequentially. The operation of MDSS will be 6 times per day during the dry weather conditions and twice per day in the winter season.
- There are two types of sprinklers/cannons. Type 1 sprinklers are 9.5mm/h and Type 2 sprinklers are 6mm/h respectively. The Type 1 sprinkler line will be operated for 10 minutes and the Type 2 sprinkler line will be operated for 15 minutes. The sprinklers are mounted on sprinkler posts of 6 meters height. It enables uniform water sprinkling on stockpiles height of approximately 13 meters.
- The water cannons cover a radius of approx. 50 meters & sprinkles waters up to 15 meters' height and rotate in 360° directions. The distance between two sprinklers is 100mts to cover total cargo stack area

PLC based MDSS in the Yards





Dust suppression through Tankers

- Water sprinkling is being carried out on the general cargo berth and in other areas viz. Roads and yards through water tankers of 20 nos. to arrest the dust pollution causing by the vehicular movement in the port. AGPL is spending around Rs. 6.50 lakhs per month on an average towards water charges and maintenance. Around 10 persons are working for this activity.

Dust suppression through Tankers

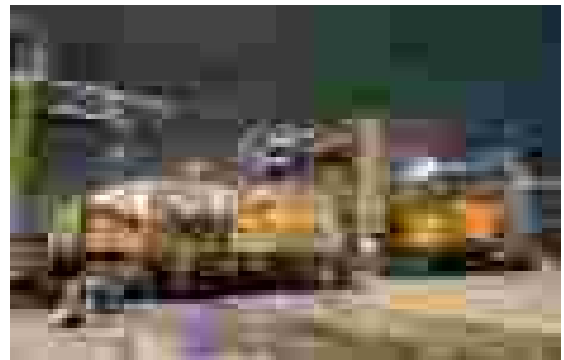
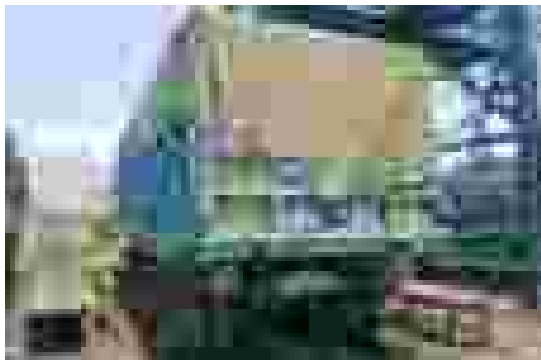




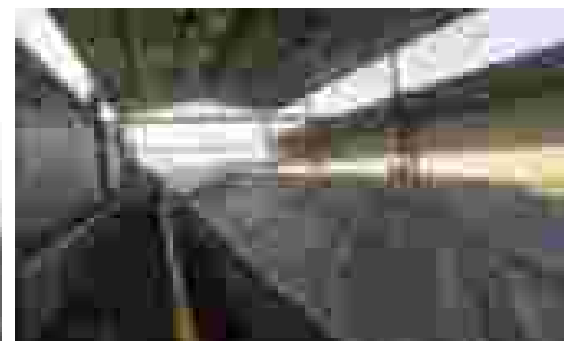
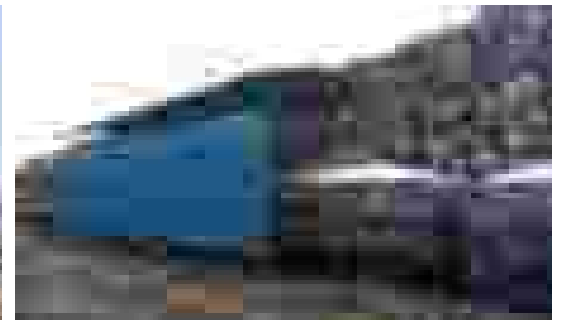
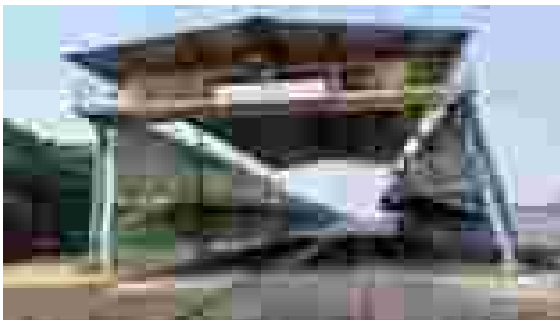
3. Truck/Wagon Tarpaulin Covering facilities:

- AGPL established 16 No. of semi mechanized truck tarpaulin covering stations at various locations within the Port to facilitate and ensure all the outgoing cargos by Trucks are covered with tarpaulin.
- AGPL ensuring that the tarpaulin is covered in all sides of the truck and tightly tied with rope so that the tarpaulin should not be uncovered while traveling until the truck reaches the destination without any transit spillage.





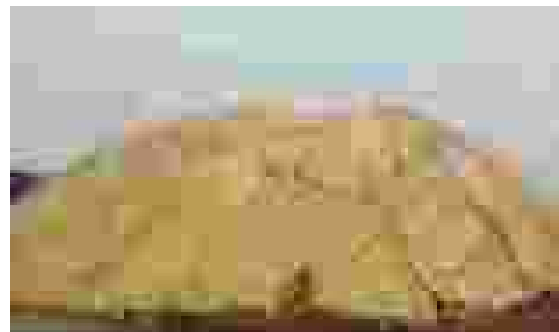
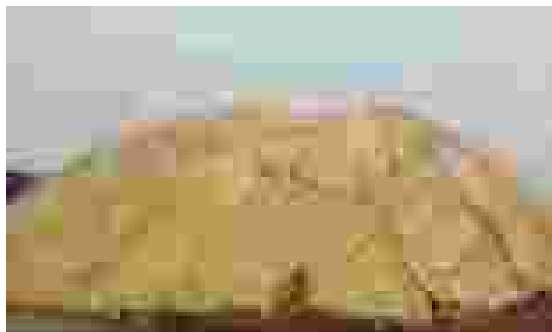
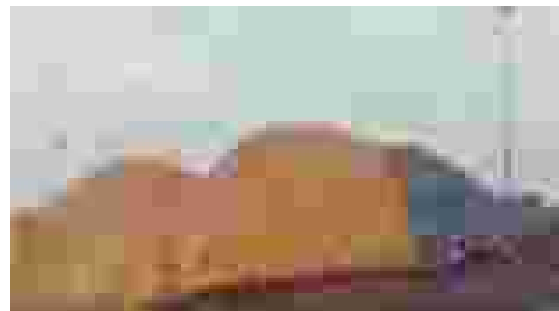
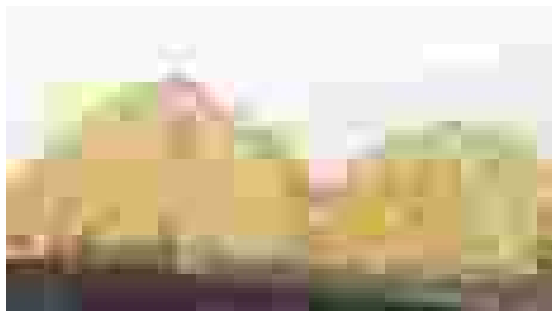
- AGPL established a semi mechanized railway wagon tarpaulin covering station at Silo location within the Port to facilitate and ensure all the outgoing cargo rakes are covered with tarpaulin and tightly tied with rope so that the tarpaulin should not be uncovered while traveling until the wagon reaches the destination without any transit spillage.





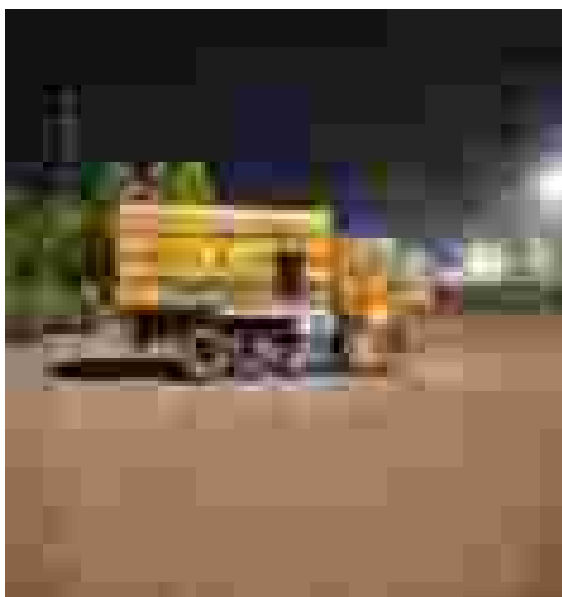
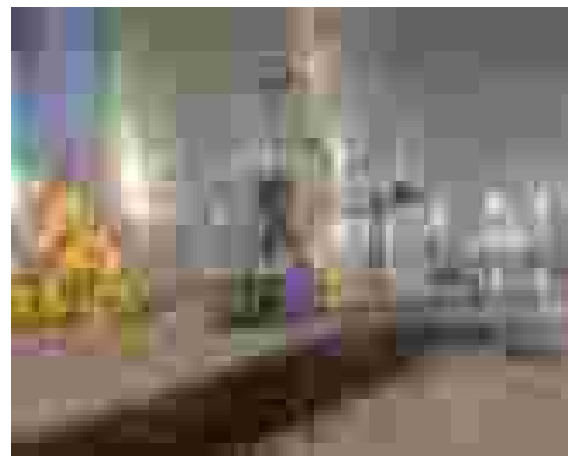
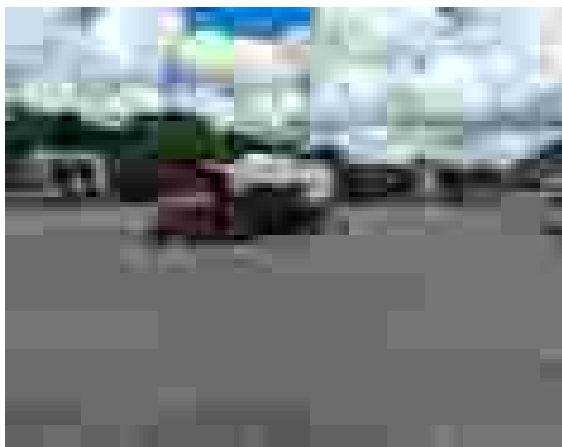
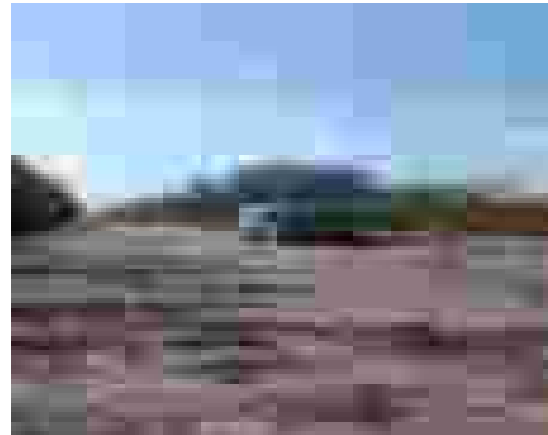
4. Cargo covered with tarpaulin:

- AGPL has been maintaining the tarpaulin covering on the cargos to the extent possible to avoid fugitive emissions.



5. Deployment of Road Sweeping Machines:

- Laid BT roads internally and 5 No. of sweeping machines were deployed for the cleaning of berths, back up areas and roads.



Road Sweeping machines

Road Sweeping machines

6. Truck Tyre washing facilities:

- Provided 2 no. of automatic sensor-based truck/tyre washing facilities to ensure two stage wheels washing of all the outgoing vehicles to avoid dust passage on to outside roads.



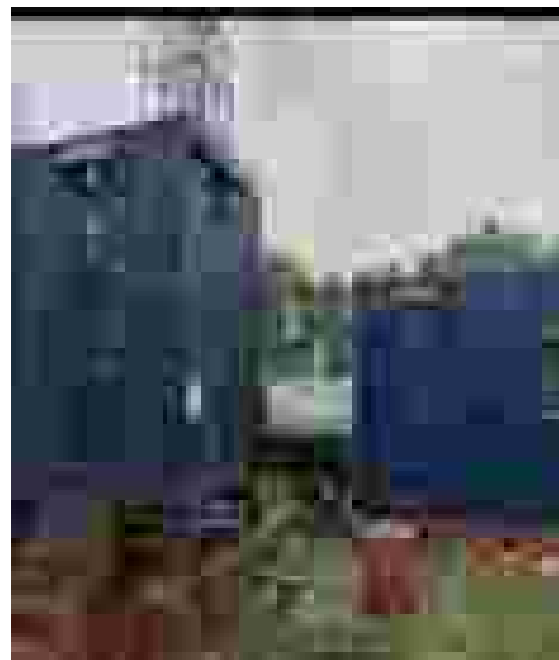
- The 2nd automatic sensor-based truck tyre washing facility wheel washing facility is established with advanced technology which having cleaning water recycling & reusing system with oil skimmer facility.





7. Bio-toilets:

- Provided 25 Bio Toilets at Berths, CS Godowns, yards, and other operational locations to cater to the needs of the contractual employees with a cost of 90.00 Lakhs.

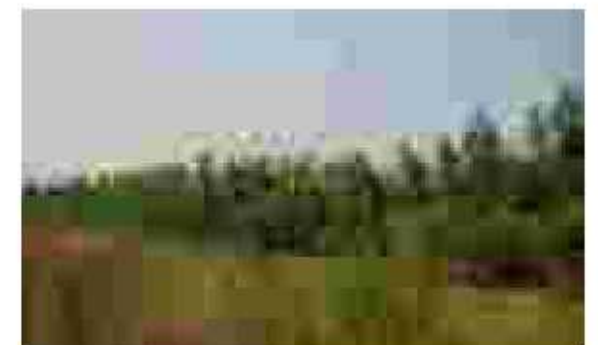


8. Specific measures towards Habitation:

Erected wind breaking walls towards Gangavaram village and HB Colony to prevent any dust transfer to habitation and a thick green belt developed supporting to the wind breaking wall, 10 layers in North-West direction to arrest the dust emissions to the villages.



Wind breaking wall towards HB Colony & Gangavaram (V)



Plantation at - GPL Site Office & all along North boundary wall side plantation supporting Wind screen towards Gangavaram village, towards Kongapalem & Venkannapalem Villages

9. Environmental Monitoring Programme in AGPL

As per the statutory guidelines AGPL appointed an authorized 3rd party agency, for continuous monitoring of the environmental parameters of the Port as well as Gangavaram village and Peda Gantyada areas.

A. Ambient Air Quality

Operating 4 No. of Continuous Ambient Air Quality Monitoring stations at the below mentioned located as suggested by SPCB within 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 devices for measuring SO₂, NO, NO₂, & CO parameters,

- i. Administrative office towards H.B. Colony (Station 1):
- ii. Project site office building towards Venkannapalem (Station2)
- iii. Watch tower – 4 towards Gangavaram village (Station3)
- iv. Upwind direction towards RINL (Station-4)

B. Noise Monitoring

Noise monitoring is being carried out fortnightly as per the statutory regulations for the four locations and the reports are well within the statutory limits and the same are being submitted to the APPCB on monthly basis.

1. Cargo handling area (as source)
2. Gangavaram
3. Peda Gantyada/Security Gate
4. HB colony



At HB Colony



At Gangavaram (V)



**At Port
operational area**



At Port Main Gate

C. Surface & Ground water monitoring

As per the statutory regulations & requirement, Surface & Ground water quality is being monitoring by AGPL on monthly basis at Gangavaram (Village) and reports being submitted to the APPCB, and to MoEF & CC along with Half-yearly EC Compliance

1. Gangavaram (Village)
2. North Boundary Wall (NBW) open well.



Open well at Gangavaram (V)



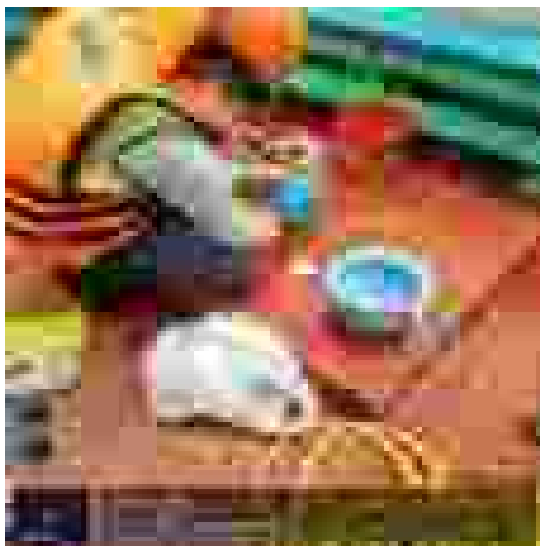
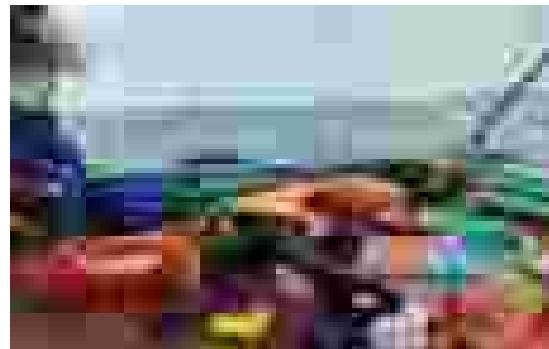
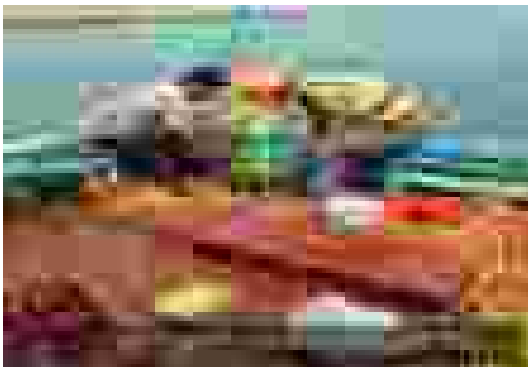
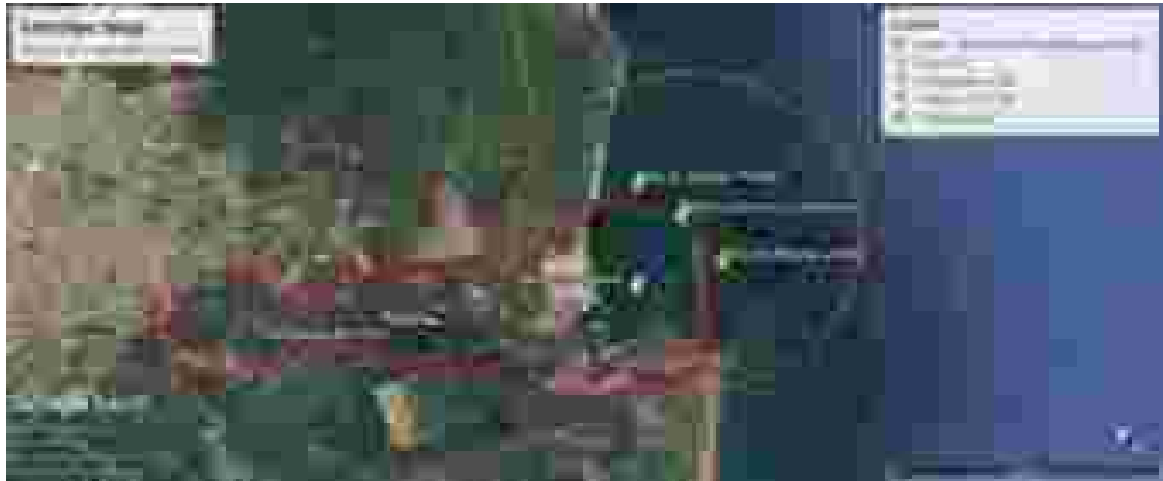
Bore well at Gangavaram (V)

D. Marine water / Sediment monitoring

The marine water and sediment quality monitoring is being carried out fortnightly basis of tidal sampling for the Four locations as

1. Harbor Basin
2. Port entrance channel
3. South break wall outside
4. North break wall outside

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 are indicating that the waters are not having any noticeable contaminatio



E. Beach nourishment

Beach nourishment to safeguard the ecosystem, protecting shorefront properties, expanding, and preserving beaches & helps in building back up and protect the shoreline from diminishing beach space



10. Environment Sustainability Measures:

i. Weather & meteorological monitoring:

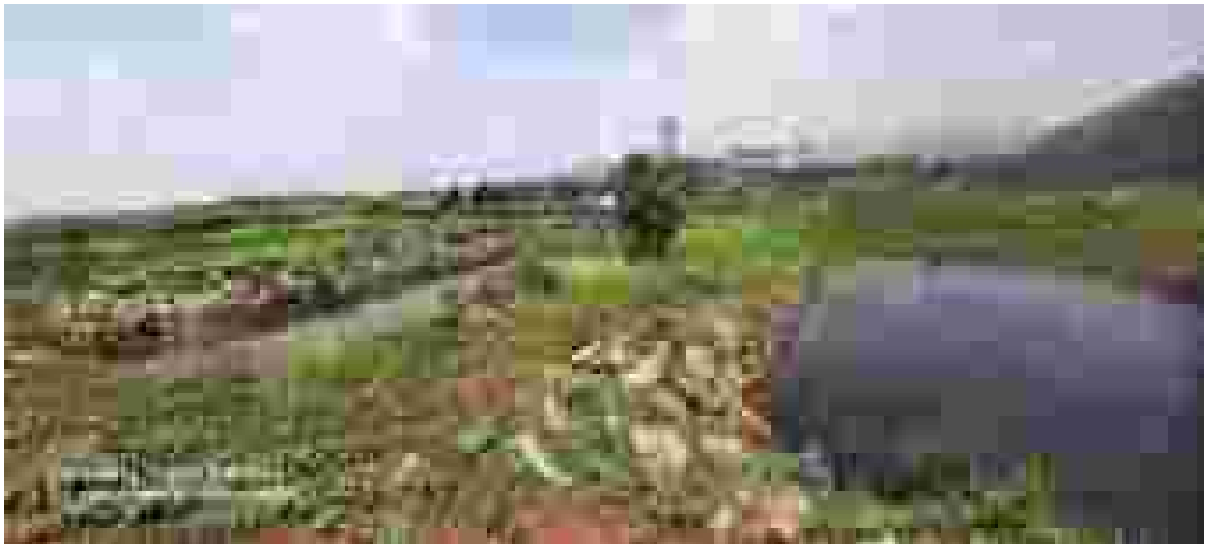
- CWC, Visakhapatnam installed an Automatic Weather Station (AWS) within AGPL premises as per the IMD guidelines to know the weather forecast.
- AGPL is one and only Port having the IMD Automatic Weather Station (AWS) installed by the Indian Meteorological Department, Visakhapatnam within the Port premises which is available in the domain IP address <http://aws.imd.gov.in.8091>



- Installed Automatic Weather station on the top of Signal Station, Vellametta and at Berth for weather forecasting & meteorological data generation.

ii. Water conservation measures:

Settling ponds provided at yards for collection of yards runoff and the supernatant water is being used for dust suppression.

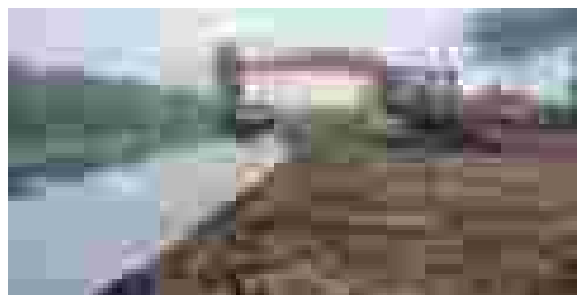


A natural pond is available in Nursery area for collection of rain/runoff water. The water is utilizing for nursery development.



Rainwater harvesting pits around the buildings are being maintained.

Rainwater drains are being maintained periodically & pre-monsoon season to avoid stagnation & free flow of water and the water is using for dust suppression to the possible extent.





11. Sewage Treatment Plants:

AGPL operating 2 No. of Sewage Treatment Plants to cater the needs of sewage water treatment.

1. 5 KLD capacity STP at AGPL Main gate location – will receive the domestic sewerage from AOB Building & Security posts.
2. 30 KLD capacity STP at AGPL Harbour gate location – will receive the domestic sewerage from the COB, ERA, POB Location cluster buildings & Canteen

The Domestic sewage water receiving from office buildings of different locations of Port is being treated in STPs and being used for greenbelt development



5 KLD STP



30 KLD STP

The STP inlet & outlet water is being analyzed through a 3rd party agency on fortnight basis and as per the analysis reports, the values are meeting the prescribed standards of APPCB.



30 KLD STP Inlet & Outlet sampling



5 KLD STP Inlet & Outlet

12. Waste management:

- a. **Plastic waste** is being collected and disposed to SPCB authorized plastic waste recycling units.
- b. **E – Waste** is being collected and disposed to SPCB authorized E-waste recyclers and submitting the details in Form – 3 to SPCB.
- c. **Hazardous waste (Waste oil)** – as per the CFO & HWA of APPCB, AGPL is permitted to generate & dispose waste oil including bilge oil. AGPL is quantifying the waste oil and disposing to SPCB authorized Waste oil recyclers and submitting the details in Form – 4 to SPCB.
- d. **Solid waste** – In consultation with GVMC Authorities, AGPL arranged for daily collecting and disposing of the domestic solid waste to GVMC authorized dump site for further waste management process.



- e. **Organic waste**– is being collected on regular basis within the Port and being disposed to GVMC authorized dump site for landfilling and using for vermin-compost preparation.



- f. **Bio-Medical Waste** - operating an Onsite Health Centre (OHC) to provide First Aid facility to the victims and generating very less quantity of Bio-Medical Waste. AGPL made an agreement with M/s. Vasistha Environ 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.

13. Details of Green belt in Adani Gangavaram Port

Development of greenbelt is a continuous process in AGPL. As of now the total plantation in the Port is about 320 Acres.

- Green cover needs to reduce the pollution levels
- Improve the standard of Ambient Air Quality

- Meet the statutory requirements & compliance.
- Reduce the carbon emissions

Environment department is fixing its own targets besides statutory requirements and achieving the targets from time to time.

The land available in AGPL is mostly sand dunes and salt pans which are not supportive for plantation.

AGPL developed good plantation with the saplings suitable for the available land achieved good results.

In the process of developing greenbelt, AGPL encountered the following severe cyclones wherein the existing greenbelt was damaged badly.

- Hud Hud Cyclone 12th to 14th October 2014
- Titli Cyclone – 8th October 2018
- Gulab Cyclone – 26th & 27th September 2021

To achieve good and dense plantation, AGPL adopted Miyawaki plantation on the advice of APPCB

High Density Plantation (Miyawaki)

Miyawaki afforestation / plantation involves several different types of native plants closely just to form a Green Wall and a completely chemical free forest in an organic way that sustains itself, supports local biodiversity, and attracts birds and insects.

In 'Miyawaki' forests, the trees grow more quickly and absorb more CO₂ than plantations grown for timber.

Its benefits include lowering temperature, making soil nutritious, supporting local wildlife and sequestration of carbon.

- With the spirit of Miyawaki type plantation, AGPL continued further plantation in Miyawaki method in the other locations viz., Weigh Bridge – 3, MRSS Location, Quarry yard, 3.75 Acres location in an extent of about 5.0 Acres.

Below details show the periodical development of Greenbelt during the last 4 years:

Table T 3.11

Sl. No.	Financial Year	Target	Achieved	Survival Rate (%)
1.	2021-22	60,000	63,500	80%
2.	2022-23	50,000	51,840	95%
3.	2023-24	2,00,000	2,01,904	95%
4.	2024-25	50,000	40634	85%
	Total	3,60,000	3,37,874	

Nursery:

AGPL Established an exclusive nursery in an extent of 2.0 Acres within the Port premises and maintaining about 60 to 70,000 saplings of Avenue, Ornamental & Fruit bearing species viz., Badam, Conacarpus, Neem, T. Rosia, Vusiri, Casia Nadoja, Ganuga, Oil Palm, Maha Gani, Spathodia, Maredu, Piltopharm, Pycus panda, Coconut, Custard Apple, Lemon, Pedilanthus, Mandara etc.

The captive nursery played a significant role in restoration / reforestation after series of cyclones.

14. Community Plantation - Participation in plantation programmes organized by District Administration & APPCB.

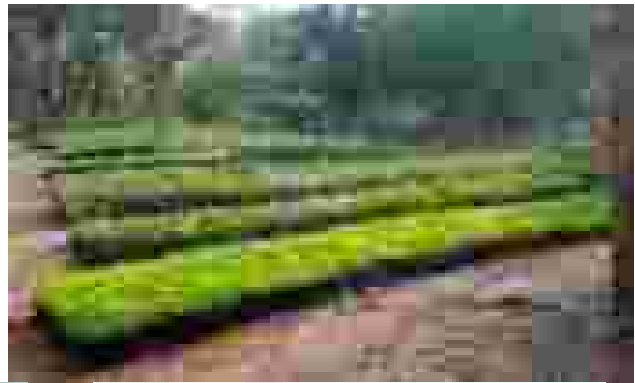
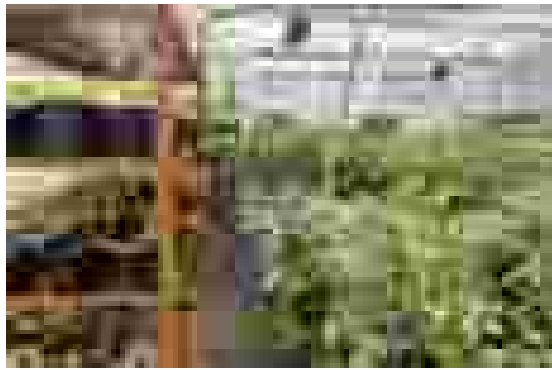
- Participated in Green Visakha – Clean Visakha - Green Visakha – Clean Visakha – One million Tree Plantation Programme jointly taken-up by Visakhapatnam District Administration & A.P. Pollution Control Board on World Environment Day 5th June 2022, wherein GPL completed the targeted plantation of 50,000 by 18.08.2022 against the target of 50,000
- Participated in "Green Visakha 40 Lakhs Plantation Programme" jointly taken-up by SPCB & District Administration as per the directions of the Hon'ble Parliamentary Committee, during 2011 wherein GPL was given a target of 1.35 Lakhs plantation and achieved highest plantation of 1,43 lakh saplings with Geo-tagging & 87.24% survival rate.
- The details of year wise plantation target, achievement. Geo Tagged and survival rate details are as below:

Table T 3.12

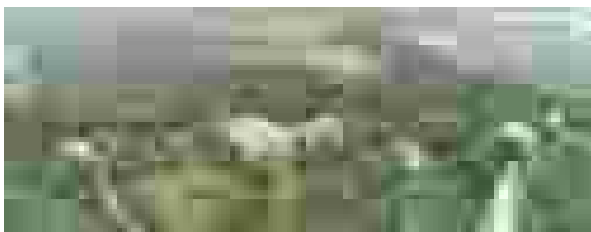
S. No.	Year	Plantation details			
		Target	Achieved	Geo Tagged	Survival %
1	2012-13	20,000	20,000	19,000	87.24%
2	2013-14	30,000	30,000	24,955	
3	2014-15	10,000	16,600	7,650	
4	2015-16	38,000	38,500	31,306	
5	2016-17	37,000	38,500	32,030	
		135,000	143,600	114,941	

Photographs of Nursery & Greenbelt:

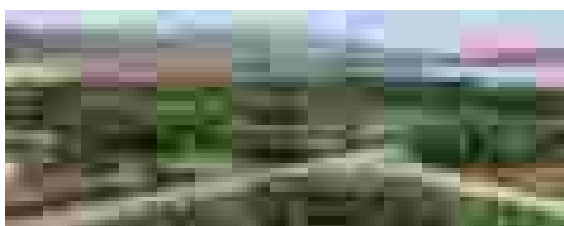
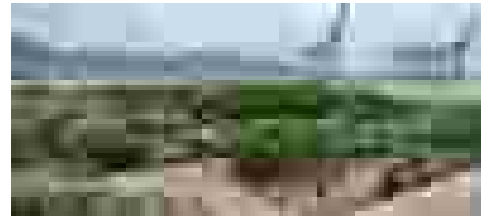
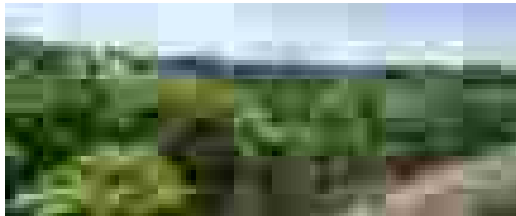




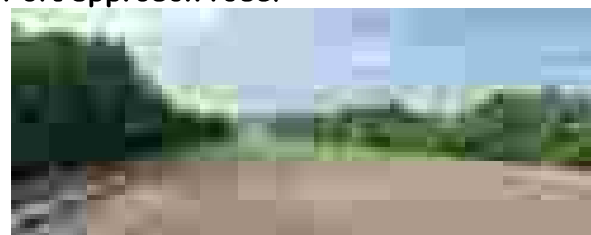
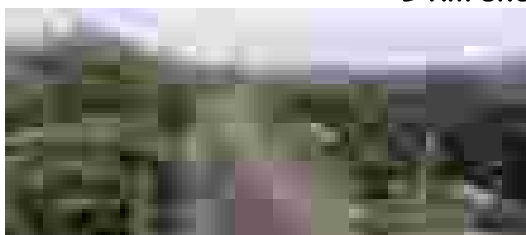
Greenbelt in and around the Port Boundary



Greenbelt within the Port premises covering yards & berths



Greenbelt within the Port premises all along the 4-lane road of 5 Km and at Port approach road.





15. New Initiatives for effective Environment & Sustainability: 2024-25

1. Power Provision for Teli Stacker Operations

- New power arrangements made at multiple locations on **CC7** to support Teli stacker operations.

2. Commissioning of EGSU Units

- Two units of **Economical Grab Ship Unloaders (EGSU)** commissioned at **Berth-3** to enhance energy-efficient mechanize cargo handling.

3. Energy Monitoring System Implementation

- Energy Monitoring System application adapted to track and manage energy consumption in real-time across operational points.

4. Fire Suppression System Installation

- Fire suppression systems are installed across all berths and yard equipment to improve safety and environmental compliance.

5. Water Management

- IOT-based digital flow meters have been newly installed as part of our environmental sustainability initiative to monitor and manage water usage.

6. Shore Power Provision for Marine Tugs at Jetty

- All marine tugs are provided with 100% shore power while at the jetty.

ANNEXURE- 11
ISO-45001 CERTIFICATE

Certificate of Approval

Issued by Indian Register Quality Systems



Certificate No.
IRQS/250400434

To certify that the Occupational Health and Safety Management Systems of

Adani Gangavaram Port Limited

ADDRESS

Gangavaram (Post),
Pedagantyada (Mandal), Visakhapatnam,
Andhra Pradesh - 530044, India

has been assessed and found conforming to the requirement of **ISO 45001: 2018**

INITIAL CERTIFICATION DATE

APRIL 18, 2022

CURRENT DATE OF GRANTING

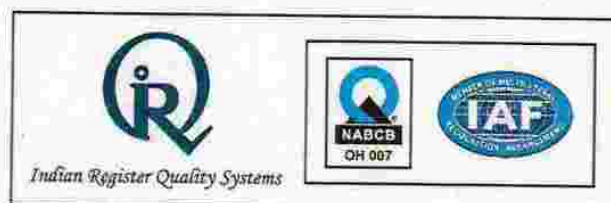
MARCH 19, 2025

EXPIRY DATE

APRIL 17, 2028

CERTIFICATION SCOPE

Providing Integrated Seaport Facilities and Related
Services for Handling, Storage and Delivery of Cargo
at Adani Gangavaram Port Limited



AUTHORISED CERTIFICATION BODY SIGNATURE

Shashi Nath Mishra
Chief Operating Officer (COO)

This approval is subject to continued satisfactory maintenance of the Occupational Health and Safety Management Systems of the organization to the above requirements which will be monitored by IRQS during annual Surveillance audits. Validity of the Certificate is subject to successful completion of annual surveillance audits. The use of the Accreditation Mark indicates accreditation with respect to activities covered by the certificate with NABCB accreditation no. OH 007.

Condition Overleaf.

Indian Register Quality Systems (A Division of IRCLASS Systems and Solutions Private Limited)

Head Office: 52A, Adl Shankaracharya Marg, Opp. Powai Lake, Powai, Mumbai - 400 072, India. Website: www.irqs.co.in, www.irclass.org

COA/IRQS/NABCB/OHSMS/Rev 04

ANNEXURE -12
TF PCB SUBMIT COPY-APR-26

Lr. No. AGPL/ENV/APPCB/TF/2026-27/02

Date: 23.04.2026

To
The Member Secretary,
Andhra Pradesh Pollution Control Board,
Paryavaran Bhavan, APIIC Colony Road,
Gurunanak Colony, Autonagar,
Vijayawada - 520 007.

Dear Sir,

Sub: AGPL - Directions of APPCB External Advisory Committee (Task Force) -
Quarterly Compliance Report for the period from 1st January 2026 to
31st March 2026 - Submitted - Reg.

Ref: 1. CTO & HWA Order No. APPCB/VSP/113/CFO/HO/2009, dated 22.08.2024,
valid up to 31.07.2029.
2. APPCB EAC (TF) Directions Order No. 755/ APPCB/ HO/ ECS/ OA571/
VSP/2023, dated 27.04.2023.

AGPL was directed to comply with the External Advisory Committee (Task Force)
Directions issued in the 2nd reference and to furnish the compliance status on a
quarterly basis until 100% compliance is achieved.

As per the EAC Directions, AGPL achieved 100% compliance by August 2023. AGPL has
submitted the quarterly compliance status reports from 10.07.2023 to date. The Details
of the submitted reports are as follows:

As per the directions of the External Advisory Committee (Task Force) of APPCB, AGPL
has submitted the quarterly compliance status on the directions & the details are as
below:

Sl. No.	Date of submission	Quarterly Period
1.	10.07.2023	April 2023 to June 2023
2.	05.10.2023	July 2023 to September 2023
3.	02.01.2024	October 2023 to December 2023
4.	04.04.2024	January 2024 to March 2024
5.	14.08.2024	April 2024 to June 2024
6.	18.10.2024	July 2024 to September 2024
7.	10.01.2025	October 2024 to December 2024
8.	15.04.2025	January 2025 to March 2025
9.	17.07.2025	April 2025 to June 2025
10.	16.10.2025	July 2025 to September 2025
11.	28.01.2026	October 2025 to December 2025



Adani Gangavaram Port Limited

(Formerly "Adani Gangavaram Port Private Limited")

Gangavaram Post, Pedagantyada,

Visakhapatnam, Andhra Pradesh, India - 530 044

CIN : U61100GJ2021PLC124091

Registered Office : Adani Corporate House, Shanthigram, Nr. Vaishno Devi Circle, S.G. Highway, Khodiyar, Ahmedabad-382421, Gujarat, India.

Tel + 91-891-2701177, 2889999

Fax +91-891-2703377

www.adaniports.com

Page: 1

We are hereby submitting the compliance status report for the period from January -26 to March 26 for your kind perusal.

We reiterate that AGPL is committed to the best environmental management practices and will continue to take all necessary measures to prevent dust pollution, ensuring that pollution parameters remain within the permissible limits stipulated by APPCB. We humbly request the withdrawal of the Task force Directions as we have achieved 100% compliance with the Directions.

Thanking you,

For, **Adani Gangavaram Port Limited**

Dehene
23-04-2026

Authorized Signatory

Enclosures: as above

Copy to:

1. The Joint Chief Environmental Engineer, APPCB, Legal Cell, Board Office, Visakhapatnam.
2. The Joint Chief Environmental Engineer, APPCB, Zonal Office, Visakhapatnam.
3. The Environmental Engineer, APPCB, Regional Office, Visakhapatnam.

Adani Gangavaram Port Limited

(Formerly "Adani Gangavaram Port Private Limited")

Gangavaram Post, Pedagantyada,

Visakhapatnam, Andhra Pradesh, India - 530 044

CIN : U61100GJ2021PLC124091

Registered Office : Adani Corporate House, Shanthigram, Nr. Vaishno Devi Circle, S.G. Highway, Khodiyar, Ahmedabad-382421, Gujarat, India.

Tel + 91-891-2701177, 2889999

Fax +91-891-2703377

www.adaniports.com

ANNEXURE -13
MUNICIPAL SOLID WASTE GVMC ORDER

**GREATER VISAKHAPATNAM MUNICIPAL CORPORATION
VISAKHAPATNAM**

From
The Chief Medical Officer of Health,
GVMC,
Visakhapatnam

To
M/s Adani Gangavaram Port Limited
Gangavaram Post,
Pedagantyada
Visakhapatnam - 530044

Lr.Rc.No.104/2026/PH/Gwk/Zone-VI, dt. 19-05-2026.

Sir,

Sub: GVMC – Public Health Department – Representation Received from M/s Adani Gangavaram Port Limited, Visakhapatnam – Permission issued to dump the Wet and Dry Waste (Non- Hazardous Material) into GTS, Zone – IX, Visakhapatnam - Reg.

Ref: Instructions of the Executive Authority, GVMC dated 24.03.2026.

@@@

Permission is hereby granted to M/s Adani Gangavaram Port Limited, Pedagantyada, Visakhapatnam for the disposal of Wet and Dry Waste into GTS, Zone – IX for the period of **One Year as per the instructions of EA, dated 24.03.2026** with the following conditions.

- The above Waste/ Garbage shall be allowed into the into GTS, Gajuwaka for disposal in the respective processing units, and the waste shall be transported in your own vehicle.
- The agency shall dump the garbage during the day time only.
- The garbage shall be free from flies and other insects such as mosquitoes etc., and the garbage from such ships with de-ratification certificate only allowed for disposal.
- The garbage shall be transported with closed doors and tight lids over top to avoid exposure and spill etc.
- Any hazardous material in the garbage shall not be transported for the disposal to the dumping yard except with proper treatment to render it from infection.
- The agency has to pay an amount of Rs.600/- (Rupees Six Hundred only) for One Metric Ton of waste to GVMC by way of Challan and the copy of the same shall be submitted at In-charge of Dumping Yard.

Chief Medical Officer of Health
G.V.M.C

Copy to the In-Charge,
Dumping Yard, Gajuwaka Zone, GVMC
Garbage Transfer Station

Copy to the Assistant Medical Officer of Health, GVMC.

ANNEXURE -14
RAIN WATER HARVESTING LETTER



Annexure - XVI

GANGAVARAM PORT LIMITED

Plot No. 485, Road No. 54
Jilani Hills, Hyderabad-500033
Andhra Pradesh, India
Tel: +91 40 5001 1444
Fax: +91 40 5001 2700
Email: info@gangavaram.com
Web: www.gangavaram.com

GPL/Gen/002
09/06/05

The Chief Conservator of Forests
Ministry of Environment & Forests
Regional Office (S2)
Kendriya Sadan, 4th Floor, E&F Wing
17th Main Road, 1-Block
Koromongla, Bangalore - 560 034

Sub: Development of Gangavaram Port - Rain Water Harvesting

Ref: MoEF Letter No. 10-3/2005-IA-III, dated 11th March 2005

Dear Sir,

With reference to and in compliance with the Environmental Clearance accorded by Ministry of Environment and Forests for Development of Minor Port at Gangavaram, Visakhapatnam District, Andhra Pradesh, vide MoEF letter cited above, we are pleased to furnish herewith (ref. Annexure 1 enclosed to this letter) information related to proposed 'Rain Water Harvesting' at Gangavaram Port.

Thanking You,

For Gangavaram Port Limited

Authorized Signatory

Encl: As Above.

Annexure 1: Rain Water Harvesting at Gangavaram Port

The water requirement for Gangavaram Port has been estimated to be 1.70 MLD for meeting various requirements of the port. As part of the State Support Agreement for Development of Gangavaram Port, Government of Andhra Pradesh (GoAP) has committed to provide the required quantity of fresh water to Gangavaram Port both for port construction as well as operational stages. To this extent, GoAP has identified 'Yeluru Canal' as the source of water supply to Gangavaram Port. GoAP has commenced the work on water supply and it is expected to be completed shortly. Thus the water requirements of the port are proposed to be met by developing the requisite facilities and not by relying on the existing facilities. Therefore it may be seen that the water requirements of port would be met without affecting the users in the region and also the ground water resources.

The ground water would not be used for meeting the water requirements for Gangavaram Port. Further, rainwater harvesting will also be adopted for enhancing the ground water potential in the region. It is proposed to provide 'Rain Water Harvesting' for important buildings such as Administrative Building, Port Operational Building, Canteen etc. within port premises. The rainwater thus collected from these buildings would be suitably discharged into ground through pipeline systems.

ANNEXURE -15
ENVIRONMENTAL MONITORING
REPORTS

1. Executive Summary:

1.1 BRIEF OVERVIEW OF SAMPLING SCOPE

This report presents the findings from monthly environmental monitoring conducted at and around the Gangavaram Port area, covering marine, inland (ground and surface), sewage water bodies, and ambient air quality, as part of compliance with Pollution Control Board guidelines and environmental management practices.

The monitoring program aims to:

- Assess water quality across multiple environmental matrices to identify pollution trends,
- Evaluate the effectiveness of sewage treatment systems,
- Ensure adherence to regulatory standards, and
- Monitor ambient air quality (AAQ) at selected port boundary and buffer locations to assess dust levels, gaseous pollutants, and emission trends from cargo handling, vehicular movement, and port operations.

The integrated approach provides a comprehensive understanding of the environmental health of the port and surrounding areas, and supports continuous improvement in environmental management.

1.2 THE SCOPE OF WORK – SAMPLING & MONITORING PLAN

Category	Monitoring Component	Frequency	Locations	Parameters
1. Marine Monitoring	Marine Water & Sediment Sampling	Fortnightly	1. Harbour Basin 2. Port Entrance Channel 3. Outside South Break Wall 4. Outside North Break Wall	General parameters, DO, BOD, COD, TDS, TSS, Oil & Grease, Nutrients, Metals, Chlorophyll-a, Phyto/Zooplankton, Benthic Organisms
2. Groundwater, Surface Water and Fresh Water	Ground, Surface and Fresh Water Sampling	Monthly	1. Gangavaram Village 2. North Boundary Wall Open Well (within port)	General parameters, metals, DO, BOD, COD, O&G, microbiological
3. Sewage Monitoring	Sewage Water Sampling (open drains/culverts)	Monthly	1. Culvert at Gangavaram (V) 2. Kanithi Gedda Nalla near Visakhapatnam Steel Plant	pH, TDS, TSS, DO, BOD, COD, O&G, coliforms, toxicity (if applicable)
4. STP Monitoring	Sewage Treatment Plant (Inlet and Outlet Sampling)	Monthly	3 STPs (2 × 15 KLD, 1 × 5 KLD)	pH, TSS, BOD, COD, O&G, nutrients, coliforms
5. Ambient Air Quality	Air Quality Monitoring	Monthly	1. Gangavaram (V) – North of Port 2. Pedagantyada Junction – Northwest 3. Novus Residential Apartment – West 4. Silo Gate – Southwest (upwind)	PM10, PM2.5, SO ₂ , NO ₂ , CO

6. Noise Monitoring	Ambient Noise Levels (Leq dB[A])	Monthly	1. Cargo Handling Area 2. Gangavaram Village 3. Pedagantyada / AGPL Security Gate 4. HB Colony	Day & Night Noise Levels (Leq dB[A])
7. Stack Monitoring	DG Stack Emissions (DG sets)	Once in 6 Months	DG Sets: 200 KVA (1 No.), 320 KVA (3 Nos.), 380 KVA (2 Nos.), 800 KVA (1 No.), 1250 KVA (3 Nos.)	PM, SO ₂ , NO _x , CO, Stack temperature, Velocity

2. SAMPLING PROCEDURE:

2.1 MARINE WATER SAMPLING PROCEDURE:

Marine water sampling was conducted at four designated locations: Harbour Basin, Port Entrance Channel, Outside South Break Wall, and Outside North Break Wall, as part of routine environmental monitoring around Gangavaram Port. The sampling procedure was designed to ensure representative, uncontaminated samples for a wide range of physico-chemical, nutrient, biological, and microbiological parameters.

2.1.1. SAMPLING PREPARATION

- All sampling containers (polyethylene, glass, sterile) were pre-cleaned and rinsed with distilled water.
- Field meters (for pH, EC, DO, salinity, temperature, turbidity) were calibrated prior to sampling.
- Sample labels included details such as sample ID, location, date, time, and parameter type.
- Chain of Custody (CoC) forms were prepared for each batch of samples.

2.1.2. SAMPLE COLLECTION

- Water samples were collected as grab samples from approximately 30 cm below the surface using a clean, non-contaminating dipper or water sampler (e.g., Van Dorn or Ruttner).
- DO samples were collected in glass-stoppered BOD bottles and fixed on-site using MnSO₄ and alkali-iodide reagents (Winkler method).
- Chlorophyll-a samples were collected by filtering 1–2 litres of water through GF/C filters using vacuum filtration. Filters were preserved in 90% acetone.
- Primary Productivity samples were collected using paired light and dark borosilicate bottles, incubated on-site under natural light conditions.

- Phytoplankton samples were collected as bulk water samples and preserved with Lugol's iodine.
- Zooplankton samples were collected using plankton nets (typically 64 μm mesh), concentrated, and preserved in 5% formalin.
- Benthic organism samples were collected using a sediment grab sampler (Van Veen grab), transferred to labeled containers, and preserved with 4% formalin or 70% ethanol.

2.1.3. SAMPLE HANDLING AND PRESERVATION

- Preservation protocols were strictly followed for each parameter as per APHA and CPCB guidelines.
 - Physico-chemical parameters such as pH, EC, and temperature were measured on-site immediately.
 - TDS, chloride, alkalinity, sulphate, etc. were stored at $\leq 4^{\circ}\text{C}$ in polyethylene bottles.
 - Heavy metals and major cations (Ca, Mg, Na, K) were acidified with HNO_3 to $\text{pH} < 2$.
 - COD and Oil & Grease were preserved with H_2SO_4 and stored in amber glass bottles.
 - Biological and nutrient samples were treated with suitable preservatives (e.g., HgCl_2 for nutrients, acetone for chlorophyll, Lugol's iodine for phytoplankton).
 - Microbiological samples were collected in sterile containers and transported under refrigeration ($\leq 4^{\circ}\text{C}$) for analysis within 6 hours.

2.1.4. TRANSPORTATION AND DOCUMENTATION

- All samples were stored in insulated iceboxes at 4°C (those applicable) and transported to the laboratory within the holding time limits specified for each parameter.
- A complete record of sampling time, environmental conditions (tide, weather, water appearance), and field observations was documented in the field logbook.
- Photographic documentation was carried out at all locations for transparency and traceability.

S. No	Parameters	Sample Type	Container Type	Volume / Quantity	Preservation Method
1	pH, EC, Temperature, Turbidity	Water	Polyethylene	250 mL	Analyze on-site (no preservative)
2	Colour, TDS, Alkalinity, Chloride, Sulphate, Fluoride	Water	Polyethylene	500 mL	Cool at $\leq 4^{\circ}\text{C}$
3	Calcium, Magnesium, Sodium, Potassium, Total Hardness	Water	Polyethylene (acid-washed)	250 mL	Acidify to pH < 2 with HNO_3
4	COD, Oil & Grease	Water	Borosilicate Glass	500 mL	Acidify to pH < 2 with H_2SO_4 , Cool $\leq 4^{\circ}\text{C}$
5	Dissolved Oxygen (DO)	Water	Glass DO Bottle	60 mL	Fix on-site with MnSO_4 + Alkali-Iodide
6	BOD (with refrigeration)	Water	BOD Bottle (Glass)	300 mL	Cool at $\leq 4^{\circ}\text{C}$
7	BOD (without refrigeration)	Water	BOD Bottle (Glass)	300 mL	Add 0.5 mL saturated HgCl_2
8	Nutrients: NO_3^- , NO_2^- , NH_4^+ , PO_4^{3-} , SiO_2	Water	Polyethylene	250 mL	Add 0.5 mL saturated HgCl_2
9	Chlorophyll-a	Water (filtered)	GF/C filter paper + Glass vial	Filter 1000–2000 mL	Preserve filter in 90% acetone; store in dark at 4°C
10	Primary Productivity (Light/Dark Method)	Water	Borosilicate Glass (Light/Dark)	60 mL each	No preservative; incubate immediately on-site
11	Heavy Metals: Fe, Zn, Pb, Mn, Cd, Cu, Cr, Ni	Water	Polyethylene (acid-washed)	250 mL	Acidify to pH < 2 with HNO_3
12	Mercury (Hg)	Water	Glass (acid-washed)	100 mL	Add HNO_3 + KMnO_4
13	Total Coliform, E. coli, TAMC	Water	Sterile Glass or PET	20 mL each	Cool at $\leq 4^{\circ}\text{C}$
14	Phytoplankton	Water	Polyethylene (wide-mouth)	1000 mL	Add 1 mL Lugol's Iodine
15	Zooplankton (Concentrated)	Water (Net Sample)	Polyethylene (wide-mouth)	250–500 mL	Add 5% formalin (1:10 dilution)
16	Benthic Organisms	Sediment (Grabs/Dredge)	Polyethylene Bucket/Bag	500–1000 g	Preserve with 4% Formalin or 70% Ethanol (in lab)

2.2 STP AND SEWAGE WASTEWATER SAMPLING PROCEDURE

As part of monthly environmental monitoring, wastewater sampling was carried out at designated points including STP inlets and outlets (2×15 KLD and 1×5 KLD units), sewage collection channels, and discharge culverts at Gangavaram (V) and Kanithi Gedda Nalla. The objective was to evaluate the efficiency of wastewater treatment and assess environmental compliance as per CPCB/IS standards.

2.2.1. SAMPLING LOCATIONS

- STP Inlet and Outlet: Samples were collected from the influent and treated effluent streams of all three STPs operating within port premises.
- Sewage Water Samples: Collected from open drains and culverts including:
 - Culvert near Gangavaram Village (V)
 - Drain near Kanithi Gedda Nalla (adjacent to VSP)

2.2.2. PRE-SAMPLING PREPARATION

- Sample containers (polyethylene, borosilicate glass, BOD bottles, and sterile microbiological bottles) were thoroughly cleaned, rinsed with distilled water, and pre-labelled.

2.2.3. SAMPLE COLLECTION

- Samples were collected from free-flowing sections or designated tapping points to ensure representative results.
- DO samples were collected in 300 mL glass bottles and fixed immediately using Winkler reagents (MnSO₄ and alkali-iodide).
- BOD samples were collected in glass-stoppered BOD bottles, filled without air bubbles.
- Microbiological samples were collected in sterile PET or glass bottles using aseptic techniques, avoiding contamination from surroundings.

2.2.4. SAMPLE PRESERVATION AND HANDLING

- pH, temperature, EC were recorded in the field immediately.
- TDS, TSS, COD, Oil & Grease, and BOD samples were preserved by cooling to $\leq 4^{\circ}\text{C}$.
- COD and O&G samples were acidified to $\text{pH} < 2$ using concentrated H₂SO₄.
- DO samples were chemically fixed on-site immediately after collection.
- Microbiological samples were kept under refrigeration (4°C) and processed within 6 hours of collection.
- Toxicity test samples were kept cool ($\leq 4^{\circ}\text{C}$) and analyzed as soon as possible, preferably within 6 hours.

2.2.5. TRANSPORTATION AND QUALITY ASSURANCE

- All samples were stored in insulated iceboxes at $\leq 4^{\circ}\text{C}$ and transported to the laboratory on the same day.
- All sampling and preservation were performed as per APHA 24th Edition, IS:3025, and CPCB guidelines, following NABL-compliant SOPs.

S. No	Parameters	Container Type	Volume (mL)	Preservation Method
1	pH, EC, Temperature	Polyethylene	250	Analyze on-site (no pre-servative)
2	TDS, TSS	Polyethylene	500	Cool to $\leq 4^{\circ}\text{C}$
3	Dissolved Oxygen (DO)	Glass DO bottle (300 mL)	60	Fix on-site (Winkler reagents)
4	BOD (with refrigeration)	BOD bottle (glass)	300	Cool to $\leq 4^{\circ}\text{C}$
5	COD, Oil & Grease	Borosilicate Glass Amber Colour	500	Add H_2SO_4 to pH < 2, Cool to $\leq 4^{\circ}\text{C}$
6	TAMC, Fecal Coliform, Total Coliform, <i>E. coli</i>	Sterile Glass or PET Bottle	100	Cool to $\leq 4^{\circ}\text{C}$

2.3 GROUNDWATER, DRINKING WATER AND FRESH WATER SAMPLING PROCEDURE

Groundwater, drinking water and fresh water samples were collected from designated locations near Gangavaram Port and its surrounding areas to assess potable water quality and to monitor potential impacts from port-related activities. The sampling covered both shallow open wells and community water sources in compliance with IS 10500:2012, APHA 24th Edition, and CPCB protocols.

2.3.1. SAMPLING LOCATIONS

- **Location 1:** Open well near the North Boundary Wall (outside port premises)
- **Location 2:** Groundwater source near Gangavaram Village (outside port premises)
- **Location 3:** Drinking water source near 3rd Berth (within the port premises)

2.3.2. SAMPLING PREPARATION

- All containers were cleaned, rinsed with distilled water, and labeled with sampling details (ID, date, time, source type).
- Polyethylene bottles were used for general and metal parameters; borosilicate and amber glass bottles for Oil & Grease; sterile bottles for microbiological analysis.

2.3.3. SAMPLE COLLECTION PROCEDURE

- **General and Physico-Chemical Parameters:**
 - Samples were collected using a grab technique directly from inside of the open well and Bore well outlets.
 - First flush (2–3 times sample bottle) was discarded to obtain representative samples.
 - Parameters like pH, EC, temperature, and turbidity were recorded once reach the lab immediately after collection.
- **DO Samples:**
 - Collected in 60 mL BOD bottles and immediately fixed on-site using MnSO_4 and alkaline-iodide reagents (Winkler method).
- **Metal Samples:**
 - Collected in acid-washed polyethylene bottles and preserved with concentrated nitric acid (HNO_3) to $\text{pH} < 2$.
- **Oil & Grease:**
 - Collected in dark amber glass bottles and acidified with concentrated H_2SO_4 to $\text{pH} < 2$. Stored under refrigeration ($\leq 4^\circ\text{C}$).
- **Microbiological Samples:**
 - Collected in sterile vials using aseptic techniques, avoiding contamination from hand contact or surroundings.
 - Samples were transported under chilled conditions and analyzed within the specified holding period.

2.3.4. SAMPLE TRANSPORT AND PRESERVATION

- All samples were placed in iceboxes with temperatures maintained at $\leq 4^{\circ}\text{C}$ (those applicable) and transported to the laboratory within 6 hours of collection.
- Preservation protocols were strictly followed based on parameter group requirements.

S. No	Parameter Group	Parameters Included	Container Type	Volume	Preservation Method
1	General Parameters	Colour, Odour, Taste, Turbidity, pH, EC, TDS Total Alkalinity, Total Hardness, Calcium, Magnesium Chlorides, Sulphate, Iron, Fluoride, Nitrite, Phosphate	Polyethylene	500 mL	Analyze on-site or Cool to $\leq 4^{\circ}\text{C}$
2	Metal Parameters	Ca, Mg, Na, K, Fe, Zn, Pb, Cd, Cr, Mn, Cu, Ni	Polyethylene (acid-washed)	250 mL	Acidify with HNO_3 to $\text{pH} < 2$
3	DO	-	Glass DO Bottle (BOD type)	60 mL	Fix on-site with Winkler reagents
5	Oil & Grease	-	Amber Glass Bottle	500 mL	Add H_2SO_4 to $\text{pH} < 2$, Cool to $\leq 4^{\circ}\text{C}$
6	Microbiological	Total Coliform, Fecal Coliform, <i>E. coli</i> , Total Bacterial Count	Sterile Vials	10 mL	Cool to $\leq 4^{\circ}\text{C}$

2.4 AMBIENT AIR QUALITY MONITORING PROCEDURE:**2.4.1. SAMPLING PREPARATION**

- Instruments were calibrated using traceable calibration gases and flow calibrators.
- Filter media (glass fiber for PM_{10} and PTFE or quartz for $\text{PM}_{2.5}$) were pre-conditioned and weighed under controlled conditions.
- Absorbing solutions for SO_2 and NO_2 were freshly prepared and kept at 4°C before use.
- All samplers were cleaned and leak-checked prior to operation.

2.4.2. SAMPLE COLLECTION PROCEDURE

- PM₁₀ was collected using a High Volume Sampler (HVS) as per **IS 5182 (Part 23): 2006**, with 24-hour continuous sampling at 1.1–1.3 m³/min.
- PM_{2.5} was collected using a Fine Particulate Sampler following **IS 5182 (Part 24): 2019**, operated at 16.7 L/min.
- Sulphur Dioxide (SO₂) sampling was done using impingers containing potassium tetrachloromercurate absorbing solution as per **IS 5182 (Part 2/Sec 1): 2023**.
- Oxides of Nitrogen (NO₂) were absorbed in sodium hydroxide-sodium arsenite solution as per IS 5182 (Part 6): 2006 and analyzed spectrophotometrically.
- Carbon Monoxide (CO) was measured using spectrophotometrically as per **IS 5182 (Part 10): 2018**.

2.4.3. SAMPLE TRANSPORT AND PRESERVATION

- Filters were placed in clean petri dishes, sealed, and transported in desiccators.
- Absorption solutions were transferred into labeled glass bottles and stored at ≤4°C.
- Samples were analyzed within their respective holding times under controlled conditions in NABL-accredited labs.

2.5 AMBIENT NOISE MONITORING

2.5.1. SAMPLING PREPARATION

- Sound Level Meter (Type 1, integrating) was calibrated using an acoustic calibrator (94 dB @ 1 kHz) before and after use.
- Equipment was placed on a tripod at 1.5 m height and away from reflective surfaces.
- Environmental conditions (wind, rain) were ensured to be within permissible monitoring limits.

2.5.2. SAMPLE COLLECTION PROCEDURE

- Conducted as per **IS 9989:1981**, with continuous 24-hour monitoring.
- Measurements included Leq (day and night), L10, L90, Lmax, and Lmin values.
- Data was digitally logged at 1-minute intervals using real-time logging equipment.

2.5.3. SAMPLE TRANSPORT AND PRESERVATION

- Data was stored in internal memory, downloaded post-monitoring, and reviewed with calibration records.
- All readings were processed and validated as per QA/QC protocols.

2.6 DG STACK EMISSIONS MONITORING PROCEDURE

2.6.1. SAMPLING PREPARATION

- Sampling ports were prepared as per IS 11255 standards.
- Stack diameter, temperature, and velocity were recorded using a thermocouple and Pitot tube assembly.
- Equipment was cleaned, calibrated, and leak-checked before use.
- Absorbing solutions for SO₂ and NO_x were freshly prepared.

2.6.2. SAMPLE COLLECTION PROCEDURE

- Particulate Matter: Collected on pre-weighed glass fiber filters using isokinetic stack sampling setup per IS 11255 (Part 1 & 2).
- SO₂ and NO_x: Collected in absorbing solutions and analyzed spectrophotometrically as per IS 11255 (Part 7).
- CO: Measured using portable NDIR analyzers as per IS 11255 (Part 9).
- Stack gas temperature and velocity: Measured as per IS 11255 (Part 3): 2008 using thermocouple and Pitot tube.

2.6.3. SAMPLE TRANSPORT AND PRESERVATION

- Filters were desiccated and transported for gravimetric analysis.
- Absorption solutions were sealed in amber bottles and transported chilled ($\leq 4^{\circ}\text{C}$).
- Digital CO and velocity readings were stored and downloaded for analysis.

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Test Results

Continue....

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water-Harbour Basin (1 st Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	°C	27.8	30.6	29.6	32.2	27.8	30.6	27.6	28.4	28.2	28.6	26.4	26.4
2	pH @ 25 °C	---	8.09	8.11	8.14	8.22	8.09	8.11	8.14	8.22	8.46	8.37	8.14	7.98
3	*Salinity	PSU	32.5	33.8	31.8	32.4	32.5	33.8	28.8	30.2	27.4	29.8	26.2	28.4
4	Turbidity	NTU	1	1	1	1	1	1	1	1	1	1	1	1
5	Total Suspended Solids	mg/l	48	62	50	52	48	62	48	52	52	56	48	50
6	*Transparency	Mts.	2.1	1.8	2.6	2.2	2.1	1.8	2.0	2.2	2.0	2.2	2.0	2.4
7	*Electrical Conductivity	mMho	38.6	40.2	39.94	42.4	38.6	40.2	55.6	56.2	58.4	56.6	56.4	58.9
8	Sulphate as SO ₄	mg/l	1562	1486	1536	1440	1562	1486	1588	1670	1640	1722	1542	1924
9	Phosphates as PO ₄	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.74
10	*Nitrate as NO ₃	mg/l	0.86	1.24	1.04	0.88	0.86	1.24	1.22	1.06	1.34	1.28	1.74	1.36
11	Nitrite Nitrogen as NO ₂	mg/l	0.22	0.26	0.14	0.18	0.22	0.26	0.36	0.38	0.46	0.52	0.52	0.55
12	Chlorides as Cl	mg/l	17930	18620	17880	18460	17930	18620	17960	19988	18442	20084	17894	21452
13	Iron as Fe	mg/l	0.86	1.02	0.94	1.14	0.86	1.02	0.74	1.22	0.68	1.36	0.58	1.84
14	Dissolved Oxygen	mg/l	5.6	6.4	5.2	5.8	5.6	6.4	5.8	6.4	6.2	6.8	5.6	5.2
15	BOD_3 days @ 27 °C	mg/l	6.4	4.2	6.8	5.5	6.4	4.2	4.8	6.8	5.2	6.4	6.4	7.6
16	Oil & Grease	mg/l	5.2	4.12	5.52	4.84	5.2	4.12	8.0	6.0	7.6	8.2	8.2	7.4
17	*Chromium as Cr ⁺⁶	mg/l	0.014	0.016	0.016	0.018	0.014	0.016	0.016	0.018	0.018	0.024	0.0012	0.0021
18	*Mercury as Hg	mg/l	<0.001	0.004	<0.001	0.004	<0.001	0.004	<0.001	0.008	<0.001	0.007	<0.001	0.006
19	*Zinc as Zn	mg/l	0.34	0.18	0.36	0.24	0.34	0.18	0.44	0.36	0.52	0.48	0.46	0.52
20	*Manganese as Mn	mg/l	0.22	0.19	0.26	0.14	0.22	0.19	0.17	0.06	0.04	0.08	0.06	0.09
21	*Cadmium as Cd	mg/l	0.016	0.006	0.014	0.006	0.016	0.006	0.009	0.005	0.008	0.006	0.006	0.014

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide;

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water- Port Entrance Channel - (1 st Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	°C	30.6	30.8	30.4	31.1	30.6	30.8	26.4	28.8	27.4	28.2	28.4	28.8
2	pH @ 25 °C	---	8.09	8.12	8.18	8.26	8.09	8.12	8.22	8.14	8.12	8.21	8.06	8.06
3	*Salinity	PSU	32.6	33.5	31.4	32.6	32.6	33.5	29.8	30.4	28.4	29.2	27.9	28.4
4	Turbidity	NTU	1	5	1	5	1	5	1	5	1	5	1	5
5	Total Suspended Solids	mg/l	92	64	96	58	92	64	74	84	68	72	76	78
6	*Transparency	Mts.	0.9	0.8	0.4	0.7	0.9	0.8	0.8	0.7	0.7	0.9	1.4	2.8
7	*Electrical Conductivity	mMho	44.8	43.8	42.6	40.8	44.8	43.8	49.9	50.2	50.4	51.4	54.8	56.7
8	Sulphate as SO ₄	mg/l	1402	1489	1386	1436	1402	1489	1380	1420	1460	1516	1386	1478
9	Phosphates as PO ₄	mg/l	0.66	<0.5	0.62	<0.5	0.66	<0.5	0.74	<0.5	0.82	<0.5	0.66	<0.5
10	*Nitrate as NO ₃	mg/l	1.7	1.2	1.8	1.4	1.7	1.2	1.42	1.96	1.56	1.84	1.7	1.46
11	Nitrite Nitrogen as NO ₂	mg/l	0.22	0.18	0.24	0.16	0.22	0.18	0.36	0.56	0.46	0.72	0.52	0.78
12	Chlorides as Cl	mg/l	16720	17820	17882	17922	16720	17820	15768	17468	16786	18746	17648	18564
13	Iron as Fe	mg/l	1.11	1.08	1.14	1.24	1.11	1.08	1.14	1.21	1.28	1.36	1.32	1.42
14	Dissolved Oxygen	mg/l	6.2	6.4	6.4	5.8	6.2	6.4	7.8	6.6	5.8	6.2	6.1	6.6
15	BOD_3 days @ 27 °C	mg/l	5.2	4.4	5.6	4.8	5.2	4.4	6.8	5.2	6.6	5.4	7.2	5.2
16	Oil & Grease	mg/l	<4	4.2	5.44	6.28	<4	4.2	6.6	7.56	6.1	6.8	6.8	7.4
17	*Chromium as Cr ⁺⁶	mg/l	0.018	0.016	0.012	0.018	0.018	0.016	0.016	0.026	0.012	0.022	0.014	0.026
18	*Mercury as Hg	mg/l	<0.001	0.008	<0.001	0.006	<0.001	0.008	<0.001	0.008	0.004	0.006	0.008	0.008
19	*Zinc as Zn	mg/l	0.14	0.16	0.16	0.22	0.14	0.16	0.22	0.26	0.18	0.22	0.22	0.26
20	*Manganese as Mn	mg/l	<0.05	0.33	<0.05	0.33	<0.05	0.33	<0.05	0.38	0.06	0.34	0.08	0.42
21	*Cadmium as Cd	mg/l	0.008	<0.005	0.016	0.022	0.008	<0.005	0.024	0.025	0.026	0.028	0.044	0.052

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water- Outside the South Brake Wall - (1 st Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	^o C	33.6	32.8	32.6	33.6	33.6	32.8	28.6	29.4	24.4	28.2	25.7	27.7
2	pH @ 25 °C	---	8.28	8.12	8.42	8.36	8.28	8.12	8.22	8.16	8.04	8.22	8.16	8.08
3	*Salinity	PSU	33.4	32.9	31.4	30.6	33.4	32.9	30.8	31.4	28.4	29.1	27.6	29.4
4	Turbidity	NTU	1	1	1	1	1	1	1	1	1	1	1	1
5	Total Suspended Solids	mg/l	59	92	62	78	59	92	52	66	56	62	58	66
6	*Transparency	Mts.	0.8	1.2	9.4	1.42	0.8	1.2	0.9	1.7	1.2	1.8	1.4	2.2
7	*Electrical Conductivity	mMho	49.2	48.8	52.1	56.4	49.2	48.8	58.2	64.4	54.2	62.3	55.8	64.5
8	Sulphate as SO ₄	mg/l	1380	1294	1460	1340	1380	1294	1620	1740	1720	1814	1676	1760
9	Phosphates as PO ₄	mg/l	<0.5	0.58	<0.5	0.72	<0.5	0.58	0.52	0.72	0.62	0.78	0.74	0.82
10	*Nitrate as NO ₃	mg/l	0.34	1.42	0.56	1.24	0.34	1.42	0.82	1.26	0.82	1.46	0.88	1.54
11	Nitrite Nitrogen as NO ₂	mg/l	0.24	0.52	0.32	0.72	0.24	0.52	0.55	0.68	0.48	0.56	0.52	0.62
12	Chlorides as Cl	mg/l	17280	16940	18402	17661	17280	16940	17850	18764	18746	19248	19674	20148
13	Iron as Fe	mg/l	0.82	1.06	0.88	1.46	0.82	1.06	0.84	1.22	0.92	1.36	0.88	1.44
14	Dissolved Oxygen	mg/l	5.2	5.6	5.4	6.2	5.2	5.6	5.4	6.2	5.8	6.4	5.6	6.8
15	BOD_3 days @ 27 °C	mg/l	3.8	4.2	4.4	5.6	3.8	4.2	5.6	6.6	5.6	6.6	4.9	7.2
16	Oil & Grease	mg/l	4.2	<4	4.6	6.4	4.2	<4	5.0	7.0	4.8	6.6	4.1	6.8
17	*Chromium as Cr ⁺⁶	mg/l	<0.01	0.09	<0.01	0.09	<0.01	0.09	<0.01	0.09	<0.01	0.09	<0.01	0.12
18	*Mercury as Hg	mg/l	<0.001	0.004	<0.001	0.004	<0.001	0.004	<0.001	0.005	<0.001	0.005	<0.001	0.007
19	*Zinc as Zn	mg/l	<0.05	0.08	<0.05	0.08	<0.05	0.08	<0.05	0.08	<0.05	0.08	<0.05	0.06
20	*Manganese as Mn	mg/l	0.052	<0.05	0.055	<0.05	0.052	<0.05	0.071	<0.05	0.076	<0.05	0.077	<0.05
21	*Cadmium as Cd	mg/l	<0.005	0.052	<0.005	0.055	<0.005	0.052	<0.005	0.058	<0.005	0.062	<0.005	0.066

"" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water- Outside the North Brake Wall - (1 st Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	°C	32.8	31.6	33.4	32.4	32.8	31.6	29.4	30.6	28.4	31.6	27.4	30.8
2	pH @ 25 °C	---	8.04	8.06	8.46	8.28	8.04	8.06	8.06	8.12	8.14	8.28	8.26	8.06
3	*Salinity	PSU	32.8	31.6	31.8	30.8	32.8	31.6	29.8	30.4	26.8	28.2	28.4	27.4
4	Turbidity	NTU	1	5	1	5	1	5	1	5	1	5	1	5
5	Total Suspended Solids	mg/l	49	56	50	54	49	56	56	60	52	58	55	62
6	*Transparency	Mts.	0.9	0.9	1.2	1.42	0.9	0.9	1.4	1.2	1.8	1.4	1.6	1.8
7	*Electrical Conductivity	mMho	49.2	46.4	54.8	48.4	49.2	46.4	53.4	56.8	54.8	55.4	53.4	54.4
8	Sulphate as SO ₄	mg/l	1462	1528	1568	1574	1462	1528	1488	1560	1520	1622	1538	1736
9	Phosphates as PO ₄	mg/l	0.52	0.66	0.58	0.72	0.52	0.66	0.64	0.78	0.72	0.84	0.68	0.82
10	*Nitrate as NO ₃	mg/l	1.2	0.98	1.22	0.86	1.2	0.98	0.82	0.96	0.64	0.76	0.72	0.88
11	Nitrite Nitrogen as NO ₂	mg/l	0.44	0.42	0.36	0.46	0.44	0.42	0.48	0.58	0.52	0.64	0.64	0.69
12	Chlorides as Cl	mg/l	18890	17240	19668	16986	18890	17240	16762	17654	17678	18456	18346	18456
13	Iron as Fe	mg/l	0.9	0.6	0.8	0.9	0.9	0.6	0.78	0.92	0.81	0.98	0.88	0.98
14	Dissolved Oxygen	mg/l	4.9	5.8	5.8	6.2	4.9	5.8	6.4	7.2	6.6	7.6	6.1	7.1
15	BOD_3 days @ 27 °C	mg/l	5.2	4.8	5.8	5.2	5.2	4.8	6.8	7.6	5.2	6.2	5.8	6.9
16	Oil & Grease	mg/l	<4	5.2	<4	5.6	<4	5.2	<4	6.0	4.0	6.6	4.4	6.1
17	*Chromium as Cr ⁺⁶	mg/l	0.07	<0.01	0.06	<0.01	0.07	<0.01	0.09	0.01	0.08	0.06	0.09	0.11
18	*Mercury as Hg	mg/l	0.006	0.008	0.005	0.012	0.006	0.008	0.008	0.016	0.007	0.022	0.012	0.032
19	*Zinc as Zn	mg/l	0.09	0.06	0.09	0.08	0.09	0.06	0.18	0.08	0.22	0.14	0.26	0.18
20	*Manganese as Mn	mg/l	0.08	<0.05	0.06	<0.05	0.08	<0.05	0.14	0.05	0.16	0.08	0.18	0.24
21	*Cadmium as Cd	mg/l	0.006	<0.005	0.012	<0.005	0.006	<0.005	0.016	0.005	0.018	0.004	0.022	0.028

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water- Harbour Basin (2nd Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	^o C	31.4	29.4	31.8	30.6	31.4	29.4	27.7	29.4	24.4	29.2	22.6	28.4
2	pH @ 25 °C	---	8.23	8.16	8.08	8.18	8.23	8.16	8.06	8.12	8.14	8.32	7.94	8.24
3	*Salinity	PSU	31.9	32.4	30.6	32.4	31.9	32.4	29.6	32.4	27.4	28.9	24.6	27.4
4	Turbidity	NTU	1	1	1	1	1	1	1	1	1	1	1	1
5	Total Suspended Solids	mg/l	84	54	58	56	84	54	58	66	54	68	58	74
6	*Transparency	Mts.	1.4	1.6	1.8	1.4	1.4	1.6	2.4	2.6	2.4	2.6	2.2	2.8
7	*Electrical Conductivity	mMho	41.6	39.8	40.8	40.4	41.6	39.8	48.6	58.8	52.4	54.8	53.4	58.2
8	Sulphate as SO ₄	mg/l	1494	1508	1524	1466	1494	1508	1450	1522	1516	1596	1634	1736
9	Phosphates as PO ₄	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.82
10	*Nitrate as NO ₃	mg/l	1.6	0.94	1.14	0.65	1.6	0.94	1.34	1.46	1.22	1.56	1.46	1.74
11	Nitrite Nitrogen as NO ₂	mg/l	<0.1	0.18	0.08	0.21	<0.1	0.18	0.06	0.28	0.08	0.18	0.14	0.26
12	Chlorides as Cl	mg/l	17440	17230	17320	17660	17440	17230	17574	18764	18684	17984	18566	19846
13	Iron as Fe	mg/l	1.04	1.12	1.44	1.36	1.04	1.12	0.84	1.38	0.92	1.56	0.88	1.26
14	Dissolved Oxygen	mg/l	6.2	5.9	6.4	6.6	6.2	5.9	6.6	5.2	5.8	5.6	5.6	5.4
15	BOD_3 days @ 27 °C	mg/l	5.4	4.8	4.4	4.2	5.4	4.8	4.6	4.2	5.2	5.8	6.8	8.4
16	Oil & Grease	mg/l	5.13	4.67	4.76	4.74	5.13	4.67	4.0	4.0	5.8	6.4	5.4	7.8
17	*Chromium as Cr ⁺⁶	mg/l	0.023	0.018	0.027	0.022	0.023	0.018	0.026	0.022	0.028	0.026	0.034	0.022
18	*Mercury as Hg	mg/l	0.003	0.002	0.003	0.002	0.003	0.002	0.004	0.007	0.006	0.008	0.004	0.008
19	*Zinc as Zn	mg/l	<0.05	0.16	<0.05	0.24	<0.05	0.16	<0.05	0.32	<0.05	0.46	<0.05	0.48
20	*Manganese as Mn	mg/l	0.09	0.06	0.09	0.06	0.09	0.06	0.12	0.008	0.14	0.006	0.02	0.08
21	*Cadmium as Cd	mg/l	0.008	0.005	0.012	0.008	0.008	0.005	0.008	<0.005	0.006	<0.005	0.008	0.016

"" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water- Port Entrance Channel - (2nd Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	°C	32.6	32.8	30.8	30.6	32.6	32.8	29.8	27.4	28.8	27.8	26.4	26.8
2	pH @ 25 °C	---	8.22	8.09	8.22	8.04	8.22	8.09	8.11	8.26	8.36	8.14	8.44	8.36
3	*Salinity	PSU	32.7	31.6	30.8	31.6	32.7	31.6	28.4	30.8	27.4	29.6	28.9	28.4
4	Turbidity	NTU	1	1	1	1	1	1	1	1	1	1	1	5
5	Total Suspended Solids	mg/l	72	102	76	84	72	102	66	76	58	64	64	76
6	*Transparency	Mts.	1.1	1.4	0.88	0.74	1.1	1.4	2.2	0.76	1.9	0.82	2.4	2.6
7	*Electrical Conductivity	mMho	40.6	48.8	44.6	46.6	40.6	48.8	50.2	54.6	52.6	55.8	55.8	54.6
8	Sulphate as SO ₄	mg/l	1382	1362	1455	1460	1382	1362	1526	1640	1674	1720	1720	1816
9	Phosphates as PO ₄	mg/l	0.72	<0.5	0.86	<0.5	0.72	<0.5	0.82	<0.5	0.94	<0.5	0.98	<0.5
10	*Nitrate as NO ₃	mg/l	1.6	2.3	1.2	0.84	1.6	2.3	1.22	0.84	1.24	0.89	1.38	0.92
11	Nitrite Nitrogen as NO ₂	mg/l	0.16	0.54	0.22	0.86	0.16	0.54	0.48	0.94	0.58	0.98	0.92	0.94
12	Chlorides as Cl	mg/l	17040	18920	17148	19248	17040	18920	18964	19565	19248	20456	18442	21348
13	Iron as Fe	mg/l	0.94	1.16	0.15	1.08	0.94	1.16	0.18	1.18	0.38	1.22	0.44	1.36
14	Dissolved Oxygen	mg/l	5.8	5.9	5.4	5.1	5.8	5.9	5.2	6.4	4.6	5.2	5.8	5.8
15	BOD_3 days @ 27 °C	mg/l	3.9	5.3	3.2	4.8	3.9	5.3	3.8	6.2	2.8	5.8	3.8	5.2
16	Oil & Grease	mg/l	5.4	<4	4.61	3.84	5.4	<4	5.42	4.58	5.2	6.2	5.6	6.6
17	*Chromium as Cr ⁺⁶	mg/l	<0.01	0.021	<0.01	0.024	<0.01	0.021	<0.01	0.038	<0.01	0.032	<0.01	0.044
18	*Mercury as Hg	mg/l	<0.001	0.004	<0.001	0.004	<0.001	0.004	<0.001	0.006	0.002	0.004	0.008	0.006
19	*Zinc as Zn	mg/l	<0.05	0.018	<0.05	0.024	<0.05	0.018	<0.05	0.032	0.06	0.028	0.06	0.08
20	*Manganese as Mn	mg/l	0.26	<0.05	0.26	<0.05	0.26	<0.05	0.28	<0.05	0.32	0.08	0.07	0.32
21	*Cadmium as Cd	mg/l	0.006	0.006	0.008	0.011	0.006	0.006	0.008	0.014	0.012	0.018	0.082	0.058

"" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water- Outside the South Brake Wall - (2nd Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	°C	31.8	32.6	30.8	31.4	31.8	32.6	27.4	28.4	26.8	27.4	26.4	26.8
2	pH @ 25 °C	---	8.13	8.04	8.22	8.09	8.13	8.04	8.21	8.01	8.14	7.96	8.28	7.88
3	*Salinity	PSU	32.5	31.8	31.6	32.2	32.5	31.8	31.2	32.6	27.4	26.8	24.6	28.4
4	Turbidity	NTU	1	1	1	1	1	1	1	1	1	1	1	1
5	Total Suspended Solids	mg/l	46	66	54	68	46	66	58	72	68	74	66	80
6	*Transparency	Mts.	0.6	0.8	0.91	0.76	0.6	0.8	0.8	1.3	0.9	1.6	0.8	2.4
7	*Electrical Conductivity	mMho	46.4	46.2	54.4	50.2	46.4	46.2	49.6	52.8	49.8	53.2	51.2	55.8
8	Sulphate as SO ₄	mg/l	1108	1274	1482	1660	1108	1274	1480	1560	1518	1574	1548	1688
9	Phosphates as PO ₄	mg/l	0.72	0.64	0.82	0.94	0.72	0.64	0.84	0.92	0.94	0.97	0.84	0.94
10	*Nitrate as NO ₃	mg/l	0.54	1.22	0.86	0.94	0.54	1.22	0.78	0.94	0.82	0.98	0.96	0.94
11	Nitrite Nitrogen as NO ₂	mg/l	0.28	0.6	0.46	0.58	0.28	0.6	0.56	0.66	0.51	0.68	0.56	0.74
12	Chlorides as Cl	mg/l	17284	17920	17766	17878	17284	17920	15432	16254	18752	16474	17526	19898
13	Iron as Fe	mg/l	0.64	0.52	0.74	0.62	0.64	0.52	0.78	0.82	0.84	0.87	0.82	0.88
14	Dissolved Oxygen	mg/l	6.1	5.9	7.2	6.6	6.1	5.9	5.8	6.6	5.2	6.8	5.8	6.4
15	BOD_3 days @ 27 °C	mg/l	3.9	5.2	4.8	5.8	3.9	5.2	5.8	6.8	5.8	6.8	6.2	6.2
16	Oil & Grease	mg/l	4.6	<4	5.8	2.6	4.6	<4	4.0	6.0	5.2	6.4	5.8	6.6
17	*Chromium as Cr ⁺⁶	mg/l	0.05	<0.01	0.05	<0.01	0.05	<0.01	0.05	<0.01	0.05	<0.01	0.06	<0.01
18	*Mercury as Hg	mg/l	0.005	0.008	0.005	0.008	0.005	0.008	0.006	0.008	0.008	0.007	0.012	0.009
19	*Zinc as Zn	mg/l	0.06	<0.05	0.062	<0.05	0.06	<0.05	0.062	<0.05	0.062	<0.05	0.072	<0.05
20	*Manganese as Mn	mg/l	0.062	0.083	0.074	0.071	0.062	0.083	0.082	0.078	0.092	0.086	0.091	0.098
21	*Cadmium as Cd	mg/l	0.052	0.052	0.056	0.048	0.052	0.052	0.068	0.052	0.074	0.058	0.082	0.088

"" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.No	Parameter	Units	Marine Water - Outside the North Brake Wall - (2nd Fortnight)											
			Oct 2025		Nov 2025		Dec 2025		Jan 2026		Feb 2026		Mar 2026	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	*Temperature	^o C	31.8	32.6	32.6	31.8	30.9	32.6	28.4	31.4	29.8	30.6	29.2	28.8
2	pH @ 25 °C	---	8.13	8.04	8.34	8.51	8.11	8.32	8.22	8.16	8.18	8.08	8.22	7.98
3	*Salinity	PSU	32.5	31.8	32.2	32.2	33.4	33.6	32.4	32.8	31.6	30.6	26.8	30.6
4	Turbidity	NTU	1	1	1	1	1	1	1	1	1	1	1	1
5	Total Suspended Solids	mg/l	46	66	68	64	82	49	56	64	62	66	58	64
6	*Transparency	Mts.	0.6	0.8	1.26	1.56	1.2	1.4	2.1	2.6	2.6	3.1	2.2	2.8
7	*Electrical Conductivity	mMho	46.4	46.2	52.6	51.6	48.4	49.1	52.1	53.8	53.6	55.6	52.8	55.6
8	Sulphate as SO ₄	mg/l	1108	1274	1420	1498	1386	1428	1260	1396	1346	1428	1450	1548
9	Phosphates as PO ₄	mg/l	0.72	0.64	0.82	0.62	0.69	0.54	0.82	0.96	0.78	0.98	0.79	1.06
10	*Nitrate as NO ₃	mg/l	0.54	1.22	1.22	1.56	1.4	1.3	1.04	1.16	1.12	1.28	1.04	1.48
11	Nitrite Nitrogen as NO ₂	mg/l	0.28	0.6	0.68	0.42	0.38	0.38	0.68	0.72	0.58	0.74	0.64	0.94
12	Chlorides as Cl	mg/l	17284	17920	18460	18872	17840	18240	18652	19786	17326	18714	17984	18245
13	Iron as Fe	mg/l	0.64	0.52	0.6	1.2	0.8	1.1	0.86	1.2	0.88	1.4	0.81	1.8
14	Dissolved Oxygen	mg/l	6.1	5.9	7.4	6.8	6.2	5.9	6.1	6.8	6.4	6.9	5.8	7.6
15	BOD_3 days @ 27 °C	mg/l	3.9	5.2	5.8	7.2	5.6	6.2	8.2	9.4	7.6	8.4	7.4	9.2
16	Oil & Grease	mg/l	4.6	<4	6.5	6.2	6.1	6.8	7.0	8.0	7.2	8.6	6.9	8.8
17	*Chromium as Cr ⁺⁶	mg/l	0.05	<0.01	0.07	<0.01	0.09	<0.01	0.08	<0.01	0.07	0.01	0.08	0.09
18	*Mercury as Hg	mg/l	0.005	0.008	0.004	0.006	<0.001	0.005	0.007	0.009	0.008	0.016	0.022	0.026
19	*Zinc as Zn	mg/l	0.06	<0.05	<0.05	0.04	<0.05	0.08	0.06	0.08	0.08	0.09	0.09	0.12
20	*Manganese as Mn	mg/l	0.062	0.083	0.12	0.06	0.12	0.09	0.17	0.08	0.14	0.06	0.24	0.31
21	*Cadmium as Cd	mg/l	0.052	0.052	0.006	0.008	0.007	0.006	0.008	0.006	0.007	0.005	0.009	0.011

"" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Sediment Parameters Analysis Report											
			Cationic Elements				Anionic Elements				Major Elements			
			Ca (mg/kg)	Mg (mg/kg)	Na (mg/kg)	K (mg/kg)	Cl (mg/kg)	S (mg/kg)	Fe (mg/kg)	P (mg/kg)	Si (mg/kg)	Al (mg/kg)	Mar (mg/kg)	Org (mg/kg)
1	pH @ 25 °C	---	7.11	7.24	7.46	7.84	7.44	7.38	7.12	7.52	7.48	7.38	7.11	7.44
2	Organic Matter	%	3.9	4.2	4.5	5.8	1.1	1.3	0.52	0.56	0.66	0.58	5.2	4.8
3	Nitrate as NO ₃	mg/kg	3.42	3.22	3.8	4.26	2.21	3.63	2.46	2.76	2.84	2.64	2.88	2.16
4	Phosphate as P	mg/kg	3.82	4.16	4.46	3.88	18.4	16.4	4.48	5.22	4.22	5.21	4.28	5.28
5	*Oil & Grease	mg/kg	2.4	1.8	2.8	1.6	6	8	1.8	2.1	1.6	2.8	1.6	2.1
6	*Iron as Fe	mg/kg	1024	1162	1128	1140	1144	1128	1072	1340	1124	1420	1084	1256
7	*Manganese as Mn	mg/kg	156	142	160	128	114	126	178	144	174	152	174	133
8	*Nickel as Ni	mg/kg	6.22	7.24	6.74	8.02	5.42	6.24	7.28	8.74	7.16	8.28	7.22	8.97
9	*Chromium as Cr ⁺⁶	mg/kg	14.2	15.2	15.2	16.4	14.4	15.2	16.8	16.8	17.4	17.4	17.6	16.7
10	*Mercury as Hg	mg/kg	0.21	0.18	0.28	0.12	0.22	0.16	0.22	0.18	0.28	0.22	0.24	0.18
11	*Zinc as Zn	mg/kg	84	86	76	78	82	88	98	104	92	112	92	106
12	*Lead as Pb	mg/kg	24.6	26.8	26.8	24.7	22.4	20.6	28.4	27.6	27.4	26.4	29.8	27.7
13	*Arsenic as As	mg/kg	0.32	0.44	0.44	0.52	0.52	0.64	0.32	0.44	0.46	0.41	0.36	0.44
14	*Selenium as Se	mg/kg	0.14	0.32	0.22	0.44	0.21	0.42	0.18	0.28	0.24	0.34	0.24	0.29
15	*Copper as Cu	mg/kg	24.2	26.4	26.4	22.6	22.8	21.4	28.4	28.9	27.4	26.8	28.4	29.3

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Sediment Port Entrance Channel Stationing											
			Cut		Over		Ech		Anchor		E		Marker	
			o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide
1	pH @ 25 °C	---	7.22	7.38	7.46	7.52	7.96	7.84	7.58	7.66	7.68	7.24	7.48	7.52
2	Organic Matter	%	2.8	3.2	2.4	4.2	0.89	1.06	0.58	0.66	0.72	0.68	2.2	2.8
3	Nitrate as NO ₃	mg/kg	4.16	3.82	4.51	5.2	3.16	4.74	3.24	3.74	3.56	4.06	3.02	3.6
4	Phosphate as P	mg/kg	3.66	3.48	3.72	4.26	16.8	26.4	4.48	3.76	4.74	3.98	4.12	3.35
5	*Oil & Grease	mg/kg	5.68	6.24	6.24	6.24	8	12	6.46	5.66	6.87	6.46	6.15	5.82
6	*Iron as Fe	mg/kg	1124	1084	1220	1142	1316	1168	1154	1340	1236	1348	1089	1292
7	*Manganese as Mn	mg/kg	152	142	158	148	130	146	144	156	156	168	142	158
8	*Nickel as Ni	mg/kg	13.2	11.8	14.2	12.2	16.6	14.4	14.6	10.4	15.6	12.8	14.2	9.2
9	*Chromium as Cr ⁺⁶	mg/kg	9.4	10.3	8.8	11.6	9.2	12.4	12.4	11.4	13.4	18.2	11.9	10.7
10	*Mercury as Hg	mg/kg	0.25	0.32	0.36	0.46	0.42	0.56	0.54	0.32	0.62	0.46	0.34	0.28
11	*Zinc as Zn	mg/kg	132	108	136	118	124	106	128	128	134	136	128	121
12	*Lead as Pb	mg/kg	13.2	14.6	14.4	15.4	15.2	16.4	17.9	15.8	18.4	16.8	17.9	15.2
13	*Arsenic as As	mg/kg	0.42	0.54	0.58	0.62	0.78	0.56	0.54	0.82	0.64	0.74	0.54	0.76
14	*Selenium as Se	mg/kg	0.18	0.14	0.22	0.18	0.24	0.16	0.09	0.14	0.06	0.28	0.09	0.12
15	*Copper as Cu	mg/kg	22.9	18.6	24.6	19.2	21.4	20.1	29.2	28.2	28.4	27.6	29.2	27.4

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No.	Parameters/Test	Unit	Sediment on inside the port area of all 1st portnight											
			Oct		Nov		Dec		Jan		Feb		Mar	
			HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	pH @ 25 °C	---	7.8	8.12	7.46	8.56	7.41	8.32	7.32	7.74	7.14	7.36	7.42	7.87
2	Organic Matter	%	5.2	6.4	5.8	7.2	0.74	0.86	0.69	0.82	0.74	0.88	6.9	7.8
3	Nitrate as NO ₃	mg/kg	4.2	6.2	4.8	6.6	3.88	4.21	3.6	5.2	4.2	4.8	3.8	4.7
4	Phosphate as P	mg/kg	1.8	2.6	2.2	3.2	16.6	22.4	2.8	4.2	2.2	5.6	2.4	3.9
5	*Oil & Grease	mg/kg	2.8	2.4	4.6	2.8	5	8	3.6	4.6	3.8	5.2	3.1	4.2
6	*Iron as Fe	mg/kg	1320	1428	1260	1380	1298	1424	1146	1260	1268	1346	1124	1251
7	*Manganese as Mn	mg/kg	109	98	112	86	120	128	118	112	144	128	115	108
8	*Nickel as Ni	mg/kg	5.4	4.8	6.4	4.2	7.4	5.6	6.84	5.86	7.08	6.42	6.72	5.56
9	*Chromium as Cr ⁺⁶	mg/kg	8.2	11.2	7.8	12.4	8.6	13.4	9.7	14.8	9.2	15.8	9.8	14.6
10	*Mercury as Hg	mg/kg	0.12	0.09	0.16	0.11	0.24	0.32	0.09	0.22	0.08	0.28	0.09	0.18
11	*Zinc as Zn	mg/kg	68.4	64.8	74.2	72.4	80	78	90.8	80.6	92.6	82.4	90.2	80.2
12	*Lead as Pb	mg/kg	14.4	16.2	16.4	16.8	17.2	16.1	15.4	17.8	16.8	14.6	15.2	17.5
13	*Arsenic as As	mg/kg	0.24	0.62	0.34	0.66	0.56	0.74	0.16	0.18	0.14	0.22	0.12	0.14
14	*Selenium as Se	mg/kg	0.26	0.33	0.48	0.37	0.52	0.40	0.36	0.36	0.42	0.44	0.28	0.32
15	*Copper as Cu	mg/kg	11.8	13.2	12.6	14.6	14.4	16.2	12.4	16.8	12.8	17.4	12.9	16.4
"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide														

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Mediment Side the Port Race all st Portnight											
			Oct		Nov		Dec		Jan		Feb		Mar	
			HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	pH @ 25 °C	---	6.98	7.12	7.24	7.46	7.44	7.38	7.38	7.42	7.58	7.84	7.22	7.35
2	Organic Matter	%	7.2	7.4	6.8	7.8	1.1	1.4	0.72	0.78	0.82	0.92	6.9	7.4
3	Nitrate as NO ₃	mg/kg	1.6	2.6	2.2	3.4	2.68	3.16	2.8	3.8	2.8	3.2	2.7	3.1
4	Phosphate as P	mg/kg	2.4	1.8	2.1	2.6	18.1	20.2	1.86	1.56	1.86	2.04	1.95	1.48
5	*Oil & Grease	mg/kg	4.2	3.4	5.2	4.4	4	8	3.36	1.28	2.36	1.46	3.19	1.25
6	*Iron as Fe	mg/kg	1022	982	1120	1020	1226	1146	720	734	748	768	717	728
7	*Manganese as Mn	mg/kg	64.2	68.4	58.6	74.2	66.4	82.6	79.8	69.9	82.8	71.4	79.5	69.8
8	*Nickel as Ni	mg/kg	6.24	7.26	7.24	7.68	8.8	9.6	5.8	6.8	6.6	7.4	5.2	6.4
9	*Chromium as Cr ⁺⁶	mg/kg	8.6	9.4	8.8	10.8	9.4	11.6	10.6	12.8	12.4	13.8	10.1	12.6
10	*Mercury as Hg	mg/kg	0.18	0.42	0.24	0.56	0.31	0.48	0.18	0.34	0.24	0.62	0.17	0.3
11	*Zinc as Zn	mg/kg	109	114	112	120	120	134	118	126	136	146	115	128
12	*Lead as Pb	mg/kg	12.8	11.4	13.4	12.2	12.9	13.4	15.6	8.88	15.8	9.24	15.4	8.79
13	*Arsenic as As	mg/kg	0.22	0.18	0.38	0.24	0.46	0.55	0.22	0.34	0.28	0.48	0.18	0.27
14	*Selenium as Se	mg/kg	0.44	0.24	0.52	0.36	0.56	0.48	0.36	0.22	0.42	0.26	0.31	0.17
15	*Copper as Cu	mg/kg	12.8	14.6	13.2	14.8	14.1	15.2	14.8	19.6	15.6	20.4	14.7	19.8

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Sediment Parameters and Portngt											
			pH		DO		EC		Salinity		Temperature		Moisture	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	pH @ 25 °C	---	7.14	7.46	7.36	7.56	7.16	7.84	7.56	7.76	7.56	7.82	7.25	7.78
2	Organic Matter	%	4.6	4.9	5.2	5.2	0.99	1.2	0.62	0.68	0.66	0.72	4.8	5.2
3	Nitrate as NO ₃	mg/kg	2.86	3.42	2.34	4.84	2.46	3.64	2.36	3.42	2.24	3.56	2.36	3.35
4	Phosphate as P	mg/kg	4.24	2.84	4.86	3.56	20.4	22.6	3.52	1.56	3.46	1.62	3.48	1.44
5	*Oil & Grease	mg/kg	1.6	2.2	1.4	2.26	4	10	2.8	2.2	2.4	2.8	2.1	2.8
6	*Iron as Fe	mg/kg	1284	1350	1198	1246	1182	1294	1564	1476	1620	1488	1548	1489
7	*Manganese as Mn	mg/kg	152	136	160	144	108	118	178	156	156	166	172	148
8	*Nickel as Ni	mg/kg	6.84	6.26	7.42	7.42	7.88	6.62	7.84	6.84	8.02	6.74	7.98	9.89
9	*Chromium as Cr ⁺⁶	mg/kg	14.8	13.8	16.8	12.7	16.2	13.6	15.8	17.8	16.4	17.2	15.4	17.2
10	*Mercury as Hg	mg/kg	0.32	0.16	0.56	0.16	0.82	0.28	0.32	0.36	0.46	0.56	0.24	0.32
11	*Zinc as Zn	mg/kg	106	124	112	136	96	118	118	158	116	166	115	157
12	*Lead as Pb	mg/kg	32.2	30.6	38.4	28.6	32.4	26.8	35.2	26.2	36.6	26.8	35.9	26.5
13	*Arsenic as As	mg/kg	0.62	0.54	0.76	0.62	0.82	0.74	0.26	0.46	0.27	0.52	0.28	0.41
14	*Selenium as Se	mg/kg	0.18	0.26	0.24	0.42	0.18	0.38	0.25	0.38	0.32	0.46	0.21	0.34
15	*Copper as Cu	mg/kg	18.6	22.6	17.4	21.4	18.6	20.2	24.2	28.6	28.4	28.4	24.7	28.1

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Sediment Port Entrance Channel and Portnight											
			Oct		Nov		Dec		Jan		Feb		Mar	
			HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	pH @ 25 °C	---	7.11	7.24	7.46	7.46	7.52	7.32	7.82	7.56	7.22	7.56	7.26	7.33
2	Organic Matter	%	3.4	2.9	4.2	3.4	1.4	1.5	0.72	0.82	0.84	0.82	2.7	3.4
3	Nitrate as NO ₃	mg/kg	4.08	4.12	4.56	4.78	3.76	4.28	3.72	5.68	3.22	5.68	3.56	4.88
4	Phosphate as P	mg/kg	3.92	3.64	5.25	3.66	28.2	25.5	4.68	4.04	4.52	4.04	4.25	3.31
5	*Oil & Grease	mg/kg	6.42	5.24	6.78	6.48	14	16	7.52	7.16	7.68	7.16	7.34	6.95
6	*Iron as Fe	mg/kg	1248	1230	1168	1248	1188	1276	1340	1462	1296	1462	1294	1452
7	*Manganese as Mn	mg/kg	138	142	142	150	128	136	178	184	184	184	172	165
8	*Nickel as Ni	mg/kg	12.2	10.4	13.6	11.2	12.2	11.8	12.8	9.9	12.2	9.9	13.2	9.2
9	*Chromium as Cr ⁺⁶	mg/kg	8.24	10.8	7.86	14.6	8.8	15.2	11.6	13.7	13.6	13.7	11.6	12.6
10	*Mercury as Hg	mg/kg	0.42	0.62	0.56	0.82	0.74	0.96	0.38	0.48	0.42	0.48	0.35	0.45
11	*Zinc as Zn	mg/kg	124	142	130	150	128	142	152	162	164	162	148	159
12	*Lead as Pb	mg/kg	12.8	14.4	11.5	16.2	12.6	15.8	14.8	16.8	15.8	16.8	14.2	16.2
13	*Arsenic as As	mg/kg	0.38	0.52	0.22	0.64	0.36	0.42	0.82	0.92	0.96	0.92	0.76	0.86
14	*Selenium as Se	mg/kg	0.42	0.26	0.56	0.32	0.44	0.38	0.14	0.38	0.28	0.38	0.12	0.35
15	*Copper as Cu	mg/kg	28.2	24.6	26.4	22.6	24.6	23.8	32.8	26.8	34.6	26.2	32.2	26.7

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Sediment on outside the coast of Rajahmundry Port											
			Oct 2023		Nov 2023		Dec 2023		Jan 2024		Feb 2024		Mar 2024	
			OH	LT	OH	LT	OH	LT	OH	LT	OH	LT	OH	LT
1	pH @ 25 °C	---	7.04	7.24	7.22	7.46	7.98	7.26	7.72	7.64	7.84	7.86	7.89	7.55
2	Organic Matter	%	4.2	4.8	5.8	5.2	0.68	0.74	0.56	0.72	0.64	0.82	3.9	6.8
3	Nitrate as NO ₃	mg/kg	4.2	4.8	4.4	4.4	3.46	4.08	2.6	3.6	3.2	4.6	2.4	3.9
4	Phosphate as P	mg/kg	2.8	2.4	3.2	2.8	21.4	26.4	2.1	5.8	2.6	6.2	2.4	5.2
5	*Oil & Grease	mg/kg	1.8	2.4	2.2	3.2	10	14	1.8	3.6	2.4	3.8	1.4	3.9
6	*Iron as Fe	mg/kg	1204	1320	1160	1260	1136	1340	1274	1186	1348	1422	1254	1198
7	*Manganese as Mn	mg/kg	124	116	134	112	122	146	128	138	136	142	121	134
8	*Nickel as Ni	mg/kg	6.2	6.9	6.4	5.8	7.2	6.2	7.64	5.28	6.84	5.74	7.71	5.12
9	*Chromium as Cr ⁺⁶	mg/kg	10.6	13.4	12.2	11.4	12.8	12.4	12.2	16.2	13.4	17.4	12.6	15.6
10	*Mercury as Hg	mg/kg	0.24	0.26	0.46	0.34	0.58	0.46	0.18	0.26	0.22	0.38	0.12	0.21
11	*Zinc as Zn	mg/kg	82.4	66.4	84.2	62.6	88	72	79.8	74.8	83.6	76.2	79.2	74.6
12	*Lead as Pb	mg/kg	13.8	14.9	16.6	15	15.4	14.6	12.2	20.2	13.4	24.8	11.8	19.8
13	*Arsenic as As	mg/kg	0.46	0.34	0.52	0.22	0.62	0.33	0.16	0.34	0.22	0.46	0.14	0.29
14	*Selenium as Se	mg/kg	0.45	0.24	0.64	0.42	0.58	0.44	0.38	0.42	0.41	0.58	0.32	0.38
15	*Copper as Cu	mg/kg	14.2	16.4	15.2	18.0	16.8	17.2	18.6	19.8	19.2	20.2	18.9	19.9
**" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide														

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	Sediment Outside the Port Area all around Portnight											
			Oct		Nov		Dec		Jan		Feb		Mar	
			o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide	o Tide	ig Tide
1	pH @ 25 °C	---	7.08	7.24	7.28	7.56	7.96	7.68	7.42	7.36	7.64	7.08	7.38	7.29
2	Organic Matter	%	5.9	6.2	6.2	6.8	0.96	0.84	0.68	7.6	0.74	7.2	6.3	7.8
3	Nitrate as NO ₃	mg/kg	2.8	3.2	3.4	4.2	4.16	3.82	3.24	3.52	4.08	3.68	3.12	3.45
4	Phosphate as P	mg/kg	1.9	2.2	1.6	3.2	22.9	24.4	1.64	1.86	2.14	2.04	1.56	1.78
5	*Oil & Grease	mg/kg	3.2	1.92	3.8	2.92	6.0	10.0	2.76	3.24	2.98	3.88	2.98	3.15
6	*Iron as Fe	mg/kg	1064	946	1128	966	1256	988	678	720	738	756	672	718
7	*Manganese as Mn	mg/kg	70.6	72.4	72.4	72.8	78.4	76.9	80.8	75.2	82.4	74.1	80.2	74.2
8	*Nickel as Ni	mg/kg	7.84	6.82	7.34	5.82	7.6	6.6	6.1	7.8	6.8	8.4	5.9	7.5
9	*Chromium as Cr ⁺⁶	mg/kg	10.2	8.42	10.2	6.42	12.4	8.84	8.72	11.2	8.07	12.4	8.65	11.6
10	*Mercury as Hg	mg/kg	0.36	0.16	0.26	0.16	0.22	0.26	0.28	0.46	0.24	0.52	0.21	0.34
11	*Zinc as Zn	mg/kg	106	132	118	142	126	124	126	150	132	148	121	148
12	*Lead as Pb	mg/kg	12.5	9.4	13.2	9.8	12.8	10.4	13.8	8.98	14.6	8.06	13.9	8.96
13	*Arsenic as As	mg/kg	0.26	0.22	0.24	0.26	0.31	0.44	0.32	0.36	0.44	0.52	0.28	0.31
14	*Selenium as Se	mg/kg	0.26	0.18	0.42	0.12	0.41	0.22	0.38	0.28	0.51	0.66	0.36	0.24
15	*Copper as Cu	mg/kg	12.8	18.2	13.4	18.8	13.8	17.9	16.4	21.4	18.2	20.8	16.9	21.6

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

ID	Parameters/Test	Unit	Biological Parameters											
			Chlorophyll		Phytoplankton		Biomass		Primary Productivity		Secondary Productivity		Marine Invertebrates	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	Phytoplankton Cell Abundance	No./L	4080	3390	3750	2970	4080	3390	4020	3900	3930	3750	3630	3510
2	Zooplankton Abundance	No./ml	172	240	149	179	172	240	173	184	161	182	139	150
3	Zooplankton Abundance	No./m ³	99.2	175.1	87.6	130.6	99.2	175.1	106.3	134.2	97.93	132.8	83.1	109.4
4	*Chlorophyll a	mg/m ³	9.02	10.02	8.61	8.42	9.02	10.02	7.7	6.0	7.4	7.0	8.74	7.53
5	*Chlorophyll b	mg/m ³	9.67	7.31	9.31	9.12	9.67	7.31	10.6	7.7	9.4	8.1	9.24	11.61
6	Phytoplankton Biomass	mgC/m ³	451	501	430	465	451	501	385.0	417.4	371.7	351.9	436.8	376.5
7	*Primary Productivity	mgC/m ² /day	8.1	9.5	7.7	7.9	8.1	9.5	8.3	7.4	14.4	10.6	14.9	10.6
*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide														

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Stn ID	Parameters/Test	Unit	Biological Port - Non-Portnight											
			CT		OV		EC		Chl a		Chl b		Mar	
			oTide	igTide	oTide	igTide	oTide	igTide	oTide	igTide	oTide	igTide	oTide	igTide
1	Phytoplankton Cell Abundance	No./L	4440	3660	3690	3060	4440	3660	3930	4020	4170	3480	3690	3270
2	Zooplankton Abundance	No./ml	209	264	166	195	209	264	201	214	169	193	142	161
3	Zooplankton Abundance	No./m ³	157.7	183.2	125.2	139.2	157.7	183.2	151.6	146.7	127.5	137.7	107.2	116.2
4	*Chlorophyll a	mg/m ³	8.97	7.95	9.92	9.01	8.97	7.95	8.3	3.7	8.1	5.9	7.23	5.57
5	*Chlorophyll b	mg/m ³	9.64	9.12	9.76	9.37	9.64	9.12	9.5	4.2	8.3	6.6	8.26	9.21
6	Phytoplankton Biomass	mgC/m ³	448	482	496	488	448	482	372.7	239.8	409.2	298.0	361.5	278.6
7	*Primary Productivity	mgC/m ² /day	8.6	9.7	9	7.2	8.6	9.7	9.2	7.9	15.1	15.3	15.8	10.8

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



ID	Parameters/Test	Unit	Biological – Outside the NABL Scope of all NABL Monitoring											
			High Tide		Low Tide		High Tide		Low Tide		High Tide		Low Tide	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	Phytoplankton Cell Abundance	No./L	6030	4620	5550	4230	6030	4620	5730	5160	5430	5160	4890	4020
2	Zooplankton Abundance	No./ml	280	334	206	243	280	334	193	190	178	189	181	176
3	Zooplankton Abundance	No./m ³	189.9	226.6	139.7	164.8	189.9	226.6	130.9	128.9	120.7	128.2	122.8	119.4
4	*Chlorophyll a	mg/m ³	9.7	8.06	9.86	7.91	9.7	8.06	9.27	7.91	8.08	8.40	6.92	8.01
5	*Chlorophyll b	mg/m ³	9.48	9.06	9.65	9.24	9.48	9.06	9.80	7.28	6.57	6.48	8.04	8.06
6	Phytoplankton Biomass	mgC/m ³	453	341	493	462	453	341	463.4	395.7	403.8	419.9	346.2	400.6
7	*Primary Productivity	mgC/m ² /day	7.2	9.9	7.4	9	7.2	9.9	11.0	6.5	12.6	8.8	9.9	10.4

^{11*} represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

ID	Parameters/Test	Unit	Biological Parameters											
			Chlorophyll a		Chlorophyll b		Phytoplankton Biomass		Primary Productivity		Diatom Abundance		Marine Invertebrates	
			HT	LT	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
1	Phytoplankton Cell Abundance	No./L	4530	3360	5010	4020	5640	4290	4860	4980	5100	4860	4530	4110
2	Zooplankton Abundance	No./ml	182	225	185	215	276	332	199	231	177	198	163	181
3	Zooplankton Abundance	No./m ³	137.3	157.1	125.5	145.8	187.2	225.2	135	156.7	120.1	134.3	110.6	122.8
4	*Chlorophyll a	mg/m ³	8.76	7.92	8.88	8.05	10.06	9.11	7.5	7.0	8.5	6.1	5.34	7.45
5	*Chlorophyll b	mg/m ³	9.67	7.31	10.05	8.64	9.88	9.31	6.5	8.6	9.6	9.0	7.18	8.64
6	Phytoplankton Biomass	mgC/m ³	438	483	444	502	503	494	299.0	184.4	426.7	308.9	267.0	372.6
7	*Primary Productivity	mgC/m ² /day	7.7	10.6	6.8	8.8	7.7	8.1	6.5	7.0	10.8	8.6	16.0	11.7
**" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide														

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

			Marine Benthic Community Test											
			Control		Oven		Eucalyptus		Algae		Eucalyptus		Marine	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	2520	1600	2520	1450	2520	1600	2520	2200	3575	3150	2300	2125
2	*Total Biomass	g/m ²	2.09	1.24	1.99	1.02	2.09	1.24	2.23	1.34	1.94	2.26	1.89	1.64

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

			Port Entrance Benthic Community Test											
			Control		Oven		Eucalyptus		Algae		Eucalyptus		Marine	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	2625	2025	2650	2000	2625	2025	2775	3025	3150	2650	2400	2725
2	*Total Biomass	g/m ²	2.37	2.04	2.17	1.52	2.37	2.04	1.98	2.44	1.84	2.06	1.48	2.06

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

			Outside the Port Area All Benthic Community Test											
			Control		Oven		Eucalyptus		Algae		Eucalyptus		Marine	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	3050	2150	2850	2175	3050	2150	3225	2875	3375	2925	2800	2550
2	*Total Biomass	g/m ²	3.64	2.09	3.01	1.96	3.64	2.09	2.86	2.16	2.23	2.08	2.24	1.64

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

			Outside the Port Area All Benthic Community Test											
			Control		Oven		Eucalyptus		Algae		Eucalyptus		Marine	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	4250	3300	3200	2400	4250	3300	3675	3025	3675	3050	3050	2875
2	*Total Biomass	g/m ²	3.10	2.97	3.18	2.45	3.10	2.97	3.02	2.67	2.62	2.11	2.66	2.18

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

			Barasin Benthic Community and Bortnigt											
			ct		ov		ec		an		e		Mar	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	2520	1725	2520	2175	2520	1725	2595	2675	2570	2575	2570	2575
2	*Total Biomass	g/m ²	2.12	1.54	2.01	1.15	2.12	1.54	2.23	1.86	2.23	1.86	2.23	1.86

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

			Port Entrance Benthic Community and Bortnigt											
			ct		ov		ec		an		e		Mar	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	2800	2275	2850	2375	2800	2275	3075	2675	3100	3250	3100	3250
2	*Total Biomass	g/m ²	2.24	1.86	2.23	1.18	2.24	1.86	2.48	1.94	1.94	1.36	1.94	1.36

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

			Outside the Port Area of all Benthic Community and Bortnigt											
			ct		ov		ec		an		e		Mar	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	3125	2275	2675	2000	3125	2275	3125	2275	3800	3400	3800	3400
2	*Total Biomass	g/m ²	3.80	2.12	2.64	1.09	3.80	2.12	3.80	2.12	2.62	1.56	2.62	1.56

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

			Outside the Port Area of all Benthic Community and Bortnigt											
			ct		ov		ec		an		e		Mar	
Sl. No	Parameters/Test	Unit	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide	HT Tide	LT Tide
1	*Total Density	ind./m ²	3600	2925	3050	2450	3600	2925	3600	2925	4100	3750	4100	3750
2	*Total Biomass	g/m ²	3.12	2.67	3.05	2.61	3.12	2.67	3.12	2.67	2.82	3.04	2.82	3.04

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit; HT – High Tide; LT – Low Tide

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Ambient Air Quality Near /at Gangavaram (V) #North direction from Port

S.No	Parameters	Units	Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026	Permissible Limits as per CPCB
1	Respirable Suspended Particulate Matter (PM ₁₀)	µg/m ³	68.4	76.41	66.4	66.6	66.8	64.2	100 (24-hour average)
2	Fine Particulate Matter (PM _{2.5})	µg/m ³	49.4	49.52	46.2	46.4	48.2	46.8	60 (24-hour average)
3	Sulphur Dioxide (SO ₂)	µg/m ³	24.0	19.9	22.1	21.8	22.4	21.2	80 (24-hour average)
4	Oxides of Nitrogen (NO ₂)	µg/m ³	30.4	17.4	28.8	27.6	20.6	20.8	80 (24-hour average)
5	*Carbon Monoxide (CO)	mg/m ³	2.4	2.8	2.8	2.2	2.8	2.4	4 (One hour average)

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit;

Ambient Air Quality Near to Pedagantyada Jn. # Northwest direction from Port.

S.No	Parameters	Units	Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026	Permissible Limits as per CPCB
1	Respirable Suspended Particulate Matter (PM ₁₀)	µg/m ³	92.4	87.78	88.4	88.2	86.4	83.9	100 (24-hour average)
2	Fine Particulate Matter (PM _{2.5})	µg/m ³	56.8	58.70	52.6	52.3	55.8	52.6	60 (24-hour average)
3	Sulphur Dioxide (SO ₂)	µg/m ³	22.4	25.4	23.4	23.6	22.4	24.8	80 (24-hour average)
4	Oxides of Nitrogen (NO ₂)	µg/m ³	28.6	18.6	26.8	26.7	25.8	23.1	80 (24-hour average)
5	*Carbon Monoxide (CO)	mg/m ³	2.2	2.2	3.8	3.6	3.2	3.8	4 (One hour average)

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit

Ambient Air Quality @ At Silo Gate #upwind -Southwest direction from Port									
S.No	Parameters	Units	Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026	Permissible Limits as per CPCB
1	Respirable Suspended Particulate Matter (PM ₁₀)	µg/m ³	82.4	84.2	80.6	80.5	82.9	81.6	100 (24-hour average)
2	Fine Particulate Matter (PM _{2.5})	µg/m ³	50.6	52.8	48.2	46.2	46.4	48.8	60 (24-hour average)
3	Sulphur Dioxide (SO ₂)	µg/m ³	22.4	19.0	24.6	24.2	21.8	24.7	80 (24-hour average)
4	Oxides of Nitrogen (NO ₂)	µg/m ³	34.8	16.0	38.5	37.4	38.5	35.9	80 (24-hour average)
5	*Carbon Monoxide (CO)	mg/m ³	2.4	2.2	2.1	2.4	2.1	2.8	4 (One hour average)
"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit									

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

December 2025_Stack Monitoring Results

Sl. No	Parameters	Units	320 KVA SS-2	200 KVA SS-2A	1250 KVA HT DG House	320 KVA SS-1	380 KVA DSS Pump House	SS-3 320 KVA	100 KVA WT MCC	100 KVA WT MCC	1250 KVA LT MCC	CPCB Limits
1	Temperature	°C	84	86	32	82	81.1	82.2	46.2	46.2	98.2	--
2	Velocity	m/s	20.4	20.4	20.2	18.4	20.8	21.6	18.4	18.4	22.8	--
3	Flow Rate	m³/hr	23.2	22.8	28.6	21.6	21.2	22.8	16.2	16.2	32.6	--
4	Particulate Matter	mg/Nm³	38.6	37.1	56.2	33.4	32.6	34.6	22.6	22.6	46.8	150
5	Sulphur Dioxide	mg/Nm³	11.4	12.8	26.4	11.6	12.0	12.8	6.4	6.4	22.6	--
6	Oxides of Nitrogen	mg/Nm³	6.8	6.2	18.1	6.8	6.4	6.6	4.8	4.8	16.4	--

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

S.no	Parameter	Unit	Location	Noise Level _Cargo area, Pedagantyada Security												CPCB Limit	
				Oct-2025		Nov-2025		Dec-2025		Jan-2026		Feb-2026		Mar-2026		Industrial	
				Day time	Night time	Day time	Night time	Day time	Night time	Day time	Night time	Day time	Night time	Day time	Night time	Day time	Night time
1.	Noise Level	dB(A)	Cargo area	72	68	66.4	62.4	74	70	72	68	74	66	72	68	75 dB(A) for day	70 dB(A) for Night
2.	Noise Level	dB(A)	Pedagantyada/ Security Gate	66	52	64.3	61.7	62	50	64	52	62	56	60	54		
				Noise Level _Gate, Gangavaram, HB Colony.													
1.	Noise Level	dB(A)	Gangavaram	51	46	52.2	39.4	54	43	52	40	55	44	51	45	Residential	
2.	Noise Level	dB(A)	HB Colony	49	41	50.8	38.2	53	44	53	46	50	46	53	42	55 dB(A) for day	45 dB(A) for day

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No.	Parameters/Test	Unit	Acceptable Limits / Max	Monitoring Parameter in the Month					
				Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026
1	Colour	Hazen	5	<5	<5	<5	<5	<5	<5
2	*Odour	Hazen	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Hazen	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	5	<1	<1	<1	<1	<1	<1
5	pH @ 25 °C	--	6.50-8.50	7.62	7.54	7.22	6.89	7.06	7.56
6	Electrical Conductivity @ 25 °C	µS/cm	--	652	580	604	574	540	566
7	Total Dissolved Solids @ 180 °C	mg/l	500	418	380	394	370	346	362
8	Total Alkalinity as CaCO ₃	mg/L	200	82	158	134	148	134	150
9	Total Hardness as CaCO ₃	mg/L	200	120	140	128	124	120	138
10	Calcium as Ca	mg/L	75	72	30.5	32	39	30	32
11	Magnesium as Mg	mg/L	30	24	15.6	11.6	6.8	11	14
12	Chlorides as Cl	mg/L	250	82	74	82	45	54	55
13	Sulphate as SO ₄	mg/L	200	56	28	46	39	56	48
15	Iron as Fe	mg/l	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
16	Fluoride as F	mg/L	1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
17	Nitrite Nitrogen as NO ₂	mg/l	50	<0.1	4.8	3.8	2.8	5.6	<0.1
18	Phosphates as PO ₄	mg/L	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
19	Oil Grease	mg/l	0.01	<4	<4.0	<4.0	<4.0	<4.0	<4.0
20	Total Coliforms (MFT)	CFU/100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent
21	E. Coli	CFU/100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent
22	*Salmonella sp	CFU/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent
23	*Pseudomonas aeruginosa	CFU/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent
24	*Staphylococcus aureus	CFU/ml	Absent	Absent	Absent	Absent	<5	Absent	Absent

*** represents parameters that are Non-NABL Scope. "<" represents values below the detection limit

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No.	Parameters/Test	Unit	Acceptable Limits (Max)	Ground Water - Mangavaram Village					
				Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026
1	Temperature	°C	---	31.2	29.8	28.6	27.4	26.4	29.8
2	pH @ 25 °C	--	6.50-8.50	7.64	7.46	7.52	7.84	7.96	7.46
3	Electrical Conductivity @ 25 °C	µS/cm	---	574	840	708	650	660	836
4	Total Dissolved Solids @ 180 °C	mg/l	500	368	542	456	420	428	540
5	Total Alkalinity as CaCO ₃	mg/L	200	164	200	148	168	166	206
6	Total Hardness as CaCO ₃	mg/L	200	206	207	154	160	170	220
7	Calcium as Ca	mg/L	75	72	49	35	40	44	56
8	Magnesium as Mg	mg/L	30	34	20.3	16	15	15	19
9	Chlorides as Cl	mg/L	250	226	113	96	74	80	118
10	Sulphate as SO ₄	mg/L	200	98	48	52	48	38	52
11	Iron as Fe	mg/l	0.3	0.34	0.16	0.08	0.06	0.08	0.18
12	Fluoride as F	mg/L	1.0	0.18	0.78	0.48	0.46	0.48	0.82
13	Nitrite Nitrogen as NO ₂	mg/l	50	0.56	0.38	0.52	0.46	0.44	0.44
14	Phosphates as PO ₄	mg/L	<1	0.8	2.4	3.6	2.8	2.8	1.4
15	Dissolved Oxygen	mg/l	>4	4.8	5.8	5.2	5.6	5.4	5.4
16	Oil & Grease	mg/l	0.01	<1	<1.0	<1.0	<1.0	<1.0	<1.0
17	Phenolic Compounds	mg/l	0.01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
18	Residual Chlorine as Cl ₂	mg/l	0.2	0.18	0.14	<0.1	<0.1	<0.1	0.14
19	*Manganese as Mn	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	*Copper as Cu	mg/l	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
21	*Chromium as Cr ⁺⁶	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	*Cyanide as Cn	mg/l	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
23	*Zinc as Zn	mg/l	5	0.62	0.32	<1.0	<1.0	<1.0	0.38
24	Total Coliform	CFU/100ml	Absent	24	24	16	14	12	22
25	E. Coli	CFU/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No.	Parameters Test	Unit	Acceptance Criteria Limits (Max)	Round Water Report (Concentration in mg/l)					
				Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026
1	Temperature	°C	--	30.2	30.2	29.4	29.4	27.8	30.6
2	pH @ 25 °C	--	6.50-8.50	7.24	7.56	7.44	7.44	7.08	7.48
3	Electrical Conductivity @ 25 °C	µS/cm	---	756	866	770	770	610	870
4	Total Dissolved Solids @ 180 °C	mg/l	500	484	558	492	492	392	348
5	Total Alkalinity as CaCO ₃	mg/L	200	142	226	156	156	160	228
6	Total Hardness as CaCO ₃	mg/L	200	164	248	160	160	166	248
7	Calcium as Ca	mg/L	75	72	55	38	38	36	55
8	Magnesium as Mg	mg/L	30	26	27	16	16	18	27
9	Chlorides as Cl	mg/L	250	224	128	104	104	74	132
10	Sulphate as SO ₄	mg/L	200	114	62	60	60	32	60
11	Iron as Fe	mg/l	0.3	0.24	0.22	0.11	0.11	0.14	0.23
12	Fluoride as F	mg/L	1.0	0.36	0.84	0.56	0.56	0.58	0.94
13	Nitrite Nitrogen as NO ₂	mg/l	50	0.26	0.46	0.58	0.58	0.52	0.38
14	Phosphates as PO ₄	mg/L	<1	1.1	1.8	2.2	2.2	2.4	1.6
15	Dissolved Oxygen	mg/l	>4	5.8	6.1	5.8	5.8	5.1	5.8
16	Oil & Grease	mg/l	0.01	<1	<1.0	<1.0	<1.0	<1.0	<1.0
17	Phenolic Compounds	mg/l	0.01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
18	Residual Chlorine as Cl ₂	mg/l	0.2	0.14	0.18	0.18	0.18	<0.1	0.22
19	*Manganese as Mn	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	*Copper as Cu	mg/l	0.05	0.06	<0.02	<0.02	<0.02	<0.02	<0.02
21	*Chromium as Cr ⁺⁶	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	*Cyanide as Cn	mg/l	0.05	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05
23	*Zinc as Zn	mg/l	5	0.82	0.46	<1.0	<1.0	<1.0	0.46
24	Total Coliform	CFU/100ml	Absent	22	28	26	26	11	26
25	E. Coli	CFU/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	As per ISIRI limits or only Treated water	Sampling Station: Peddannaalla near PPM					
				Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026
1	pH @ 25 °C	---	5.0 – 9.0	6.68	7.06	7.56	7.38	7.56	7.46
2	Total Suspended Solids	mg/l	100	314	316	240	220	248	256
3	Total Dissolved Solids@ 180 °C	mg/l	2100	1462	1360	1450	1540	1620	1714
4	Oil & Grease	mg/l	10	8.4	6	5	8	8	6
5	Chemical Oxygen Demand (COD)	mg/l	250	522	580	420	480	476	206
6	Biological Oxygen Demand (BOD) 3 days @ 27 °C	mg/l	30	98	230	166	190	224	248
7	Ammonical Nitrogen as NH ₃ -N	mg/l	50	32	34	32	54	56	64
8	Phenolic Compounds	mg/l	1.0	0.28	1.4	1.6	1.4	1.8	2.2
9	*Nitrate as NO ₃	mg/l	50	4.82	7.2	7.8	8.2	8.8	7.8
10	Nitrite Nitrogen as NO ₂	mg/l	1.0	2.6	5.8	5.2	2.8	2.4	2.8
11	Sulphate as SO ₄	mg/L	1.0	116	136	144	128	134	148
12	Phosphates as PO ₄	mg/L	5.0	4.4	5.2	5.5	5.2	5.8	6.4
13	*Cyanide as Cn	mg/l	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Iron as Fe	mg/l	3.0	0.4	0.12	0.11	0.12	0.16	0.28
15	*Aluminium as Al	mg/l	2.0	1.2	1.4	1.2	1.4	1.2	1.8
16	*Copper as Cu	mg/l	3.0	0.12	0.08	0.05	0.06	0.07	0.08
17	*Chromium as Cr ⁺⁶	mg/l	2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	*Zinc as Zn	mg/l	5.0	0.56	0.36	0.42	0.44	0.48	0.55
19	*Lead as Pb	mg/l	0.1	0.12	0.06	0.06	0.08	0.08	0.07
20	*Manganese as Mn	mg/l	2.0	0.52	0.26	0.28	0.32	0.36	0.42
21	*Nickel as Ni	mg/l	3.0	0.26	0.27	0.30	0.28	0.32	0.56
22	*Mercury as Hg	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	*Cadmium as Cd	mg/l	2.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis

Sl. No	Parameters/Test	Unit	As per BIS limits for only Treated water	Average after 100 litres at Mangavaram Village					
				Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026
1	pH @ 25 °C	---	5.0 – 9.0	6.76	7.28	7.28	7.42	7.58	7.77
2	Total Suspended Solids	mg/l	100	382	360	294	286	296	314
3	Total Dissolved Solids@ 180 °C	mg/l	2100	1982	2866	2680	3246	3148	3456
4	Oil & Grease	mg/l	10	8.2	8	12	10	16	12
5	Chemical Oxygen Demand (COD)	mg/l	250	404	460	380	520	492	488
6	Biological Oxygen Demand (BOD) 3 days @ 27 °C	mg/l	30	104	184	152	202	214	196
7	Ammonical Nitrogen as NH ₃ -N	mg/l	50	12.6	22	18	26	22	28
8	Phenolic Compounds	mg/l	1.0	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
9	*Nitrate as NO ₃	mg/l	50	17.2	14.4	12.4	14.8	16	22
10	Nitrite Nitrogen as NO ₂	mg/l	1.0	1.4	2.6	2.6	2.8	2.4	2.8
11	Sulphate as SO ₄	mg/L	1.0	202	260	220	286	274	238
12	Phosphates as PO ₄	mg/L	5.0	4.2	4.4	3.6	5.4	5.8	5.1
13	*Cyanide as Cn	mg/l	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Iron as Fe	mg/l	3.0	0.28	0.74	0.88	0.94	0.96	0.84
15	*Aluminium as Al	mg/l	2.0	0.74	0.66	0.52	0.64	0.72	0.66
16	*Copper as Cu	mg/l	3.0	0.15	0.12	0.24	0.38	0.44	0.52
17	*Chromium as Cr ⁺⁶	mg/l	2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	*Zinc as Zn	mg/l	5.0	1.2	2.0	2.2	2.6	2.8	3.4
19	*Lead as Pb	mg/l	0.1	0.28	0.16	0.18	0.22	0.26	0.46
20	*Manganese as Mn	mg/l	2.0	0.06	0.06	0.08	0.09	0.09	0.12
21	*Nickel as Ni	mg/l	3.0	0.48	0.64	0.74	0.78	0.82	0.76
22	*Mercury as Hg	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	*Cadmium as Cd	mg/l	2.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

"*" represents parameters that are Non-NABL Scope. "<" represents values below the detection limit

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Sl. No.	Parameters/Test	Unit	TSS, Water, Effluent - NABL												
			Oct-2025		Nov-2025		Dec-2025		Jan-2026		Feb-2026		Mar-2026		Limits as per IS 10500
			Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	
1	pH @ 25 Degree C	--	6.46	6.88	6.74	6.94	6.88	7.04	6.96	7.44	7.08	7.56	7.26	7.94	6.5 – 8.5
2	Total Suspended Solids @ 103-105°C	mg/l	640	56	480	44	620	36	740	46	720	52	880	12	<100
3	Total Dissolved Solids @ 180°C	mg/l	682	189	1296	340	1438	448	1520	470	1640	496	1576	516	<2100
4	Oil & Grease	mg/l	12.8	10.4	22.4	5	18	6.0	22	8.0	28	8.8	20	4.0	<10
5	Chemical Oxygen Demand (COD)	mg/l	2466	76.2	390	420	320	40	480	30	514	22	640	20	<250
6	Biological Oxygen Demand (BOD) 3 days @ 27 °C	mg/l	142	16.2	156	166	126	16	194	12	208	14	254	8	<30
7	Chlorides as Cl-	mg/l	286	102	274	126	116	130	148	122	156	134	188	146	<500
"*" represents parameters that are Non-NABL Scope.															

ENVIRONMENTAL INTERPRETATION

GANGAVARAM PORT HARBOUR, VISAKHAPATNAM (OCTOBER 2025 – MARCH 2026)

1. INTRODUCTION

Coastal and harbour ecosystems are dynamic environmental systems influenced by tidal exchange, sediment transport, shipping activities, industrial operations, urban runoff, and seasonal climatic variations. Environmental monitoring of harbour regions is therefore essential for evaluating ecological health, pollution status, hydrodynamic stability, and the sustainability of port operations.

The present study was conducted in the Gangavaram Port Harbour region, Visakhapatnam, Andhra Pradesh, covering a six-month monitoring period from October 2025 to March 2026. Monitoring was carried out at four representative locations:

1. Harbour Basin
2. Port Entrance Channel
3. Outside South Break Wall
4. Outside North Break Wall

Sampling was conducted during two fortnights in each month under both low tide and high tide conditions to understand the influence of tidal mixing and short-term temporal variability on environmental quality.

The study included assessment of:

- Marine water quality parameters
- Marine sediment characteristics
- Biological productivity indicators
- Benthic community structure

The monitored physicochemical parameters included temperature, pH, salinity, turbidity, transparency, Total Suspended Solids (TSS), electrical conductivity, sulphate, chloride, nitrate, nitrite, phosphate, Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), oil and grease,

and trace metals such as chromium, mercury, zinc, manganese, cadmium, nickel, lead, arsenic, selenium, copper, and iron.

Biological parameters included phytoplankton abundance, zooplankton abundance, chlorophyll pigments, phytoplankton biomass, primary productivity, benthic density, and benthic biomass.

The results were compared with CPCB coastal water quality criteria and MoEF marine environmental standards to assess environmental stability and ecological sustainability of the harbour ecosystem.

2. RESULTS AND DISCUSSION – MARINE WATER QUALITY

2.1 SEASONAL OVERVIEW OF WATER QUALITY

Marine water quality monitoring from October 2025 to March 2026 demonstrated moderate spatial and seasonal variability associated primarily with tidal exchange, harbour operations, and offshore marine influence. The overall environmental condition of the harbour remained stable throughout the monitoring period, with no evidence of severe pollution stress, eutrophication, or ecological degradation.

The Harbour Basin and Port Entrance Channel consistently exhibited slightly elevated suspended solids, nutrients, oil and grease, and trace metals compared to offshore stations, reflecting operational harbour influence and sediment disturbance caused by vessel movement and tidal turbulence. In contrast, the Outside South Break Wall and Outside North Break Wall stations consistently showed better water clarity, higher dissolved oxygen, improved transparency, and stronger marine characteristics due to effective tidal flushing and open-sea circulation.

A gradual seasonal transition was evident from October to March, characterized by decreasing temperature, moderate salinity fluctuations, improved dissolved oxygen levels during cooler months, and stable biological productivity.

2.2 TEMPERATURE

Surface water temperature during the monitoring period varied approximately between 22.6°C and 33.6°C. Higher temperatures were generally recorded during October and November, while comparatively lower values were observed during January to March due to seasonal cooling.

Offshore stations frequently recorded slightly higher temperatures during high tide conditions because of open-sea influence and stronger solar heating. Harbour Basin occasionally showed comparatively lower temperatures during low tide due to restricted circulation and localized mixing conditions.

The observed temperature variations remained within the normal tropical coastal range for the Visakhapatnam region and did not indicate abnormal thermal loading or thermal pollution associated with harbour operations.

2.3 pH

The pH values throughout the study period remained within a narrow alkaline range of approximately 7.88 to 8.51, which is characteristic of healthy marine ecosystems. The stable pH indicates good buffering capacity of seawater due to dissolved bicarbonates and carbonates.

Minor fluctuations were observed between stations and tidal conditions. Higher pH values were occasionally recorded during high tide due to enhanced marine water intrusion, while slightly lower values occurred within harbour regions due to localized biological and sedimentary processes.

Overall, the pH values remained well within CPCB and MoEF permissible limits for coastal waters and showed no indication of acidification or alkaline contamination.

2.4 SALINITY AND ELECTRICAL CONDUCTIVITY

Salinity values varied approximately between 24.6 and 33.8 PSU throughout the monitoring period. Higher salinity values were consistently observed during high tide and at offshore stations due to direct marine influence, whereas relatively lower salinity values within Harbour Basin reflected localized dilution and circulation effects.

Electrical conductivity showed trends similar to salinity, varying approximately between 38 and 64 mMho/cm. Higher conductivity during high tide confirms increased ionic strength associated with seawater intrusion.

The salinity and conductivity distributions clearly demonstrate the dominance of tidal mixing and marine hydrodynamics in controlling harbour water chemistry.

2.5 TURBIDITY, TRANSPARENCY AND TOTAL SUSPENDED SOLIDS

Turbidity remained relatively low across most stations during the study period, generally ranging between 1 and 5 NTU. However, slightly elevated turbidity was frequently observed at Port Entrance Channel and offshore stations during high tide due to sediment resuspension caused by tidal currents and vessel movement.

Transparency values varied approximately between 0.6 and 3.1 m. Offshore stations consistently showed better transparency because of stronger flushing and reduced suspended particulate matter. Lower transparency within harbour regions reflects localized sediment disturbance associated with operational activities.

Total Suspended Solids (TSS) ranged approximately between 46 and 102 mg/L. The Harbour Basin and Port Entrance Channel showed comparatively higher TSS values throughout the study period due to:

- Sediment resuspension
- Dredging influence
- Vessel movement
- Restricted circulation

Despite these variations, TSS values remained within ranges commonly reported for active coastal port environments.

2.6 MAJOR IONS AND NUTRIENTS

SULPHATE AND CHLORIDE

Sulphate concentrations varied approximately between 1108 and 1924 mg/L, while chloride concentrations ranged from approximately 15,432 to 21,452 mg/L. Both parameters followed tidal trends

and showed higher concentrations during high tide and at offshore stations due to marine water dominance.

The observed ionic composition confirms stable seawater characteristics and absence of abnormal saline contamination.

NITRATE, NITRITE AND PHOSPHATE

Nutrient concentrations showed moderate seasonal and spatial variability.

- Nitrate concentrations generally ranged between 0.64 and 2.3 mg/L
- Nitrite concentrations remained relatively low
- Phosphate concentrations were mostly below 1 mg/L

Slightly elevated nutrient concentrations were occasionally observed near Port Entrance and Harbour Basin due to:

- Organic matter decomposition
- Sediment-water interactions
- Harbour operational activities
- Localized runoff influence

However, nutrient concentrations did not indicate excessive enrichment or eutrophication during the monitoring period. The observed nutrient dynamics reflect natural coastal nutrient cycling processes supported by tidal exchange and sediment mixing.

2.7 DISSOLVED OXYGEN AND BIOCHEMICAL OXYGEN DEMAND

Dissolved Oxygen (DO) concentrations ranged approximately between 4.6 and 7.8 mg/L throughout the study period, indicating generally well-oxygenated marine conditions suitable for aquatic organisms.

Offshore stations frequently recorded higher DO levels because of stronger wave action, better water circulation, and enhanced atmospheric oxygen diffusion. Slightly lower DO concentrations within harbour regions were associated with:

- Localized organic matter decomposition
- Sediment resuspension
- Reduced flushing during low tide

Biochemical Oxygen Demand (BOD) values varied approximately between 2.8 and 9.4 mg/L. Moderately higher BOD values were occasionally observed at operational zones and offshore shipping routes, indicating moderate organic loading associated with harbour activities.

Nevertheless, the DO-BOD relationship throughout the monitoring period confirms that the harbour ecosystem maintained adequate oxygen replenishment and did not experience severe organic pollution stress.

2.8 OIL AND GREASE

Oil and grease concentrations ranged approximately between 4 and 9 mg/L during the monitoring period. Slightly elevated concentrations were consistently observed within Harbour Basin and Port Entrance Channel due to:

- Vessel movement
- Fuel handling
- Shipping operations
- Minor hydrocarbon residues

Offshore stations generally showed lower concentrations because of rapid dilution and dispersion processes.

The observed concentrations indicate moderate operational influence typical of active port environments but do not suggest acute hydrocarbon contamination.

2.9 TRACE METALS IN MARINE WATER

Trace metal concentrations remained generally low throughout the study period.

- Chromium and mercury were mostly below detection or present at very low concentrations
- Zinc and manganese showed moderate variability associated with sediment interactions
- Cadmium concentrations remained low without evidence of significant accumulation

Slightly elevated concentrations were occasionally recorded at harbour operational zones and off-shore shipping regions, reflecting localized anthropogenic influence and sediment resuspension.

However, comparison with CPCB and MoEF marine coastal water quality standards indicates that metal concentrations remained within acceptable environmental limits.

Overall, the trace metal distribution suggests localized enrichment rather than widespread contamination.

3. RESULTS AND DISCUSSION – MARINE SEDIMENT QUALITY

3.1 GENERAL SEDIMENT CHARACTERISTICS

Marine sediment quality assessment from October 2025 to March 2026 revealed moderate spatial variability influenced by sediment deposition, harbour operations, hydrodynamic conditions, and tidal transport.

Harbour Basin and Port Entrance Channel generally exhibited comparatively higher concentrations of organic matter, nutrients, hydrocarbons, and trace metals, indicating localized operational influence. Offshore stations consistently showed lower contaminant concentrations due to better flushing, sediment dispersion, and marine circulation.

Despite moderate enrichment within harbour zones, sediment quality remained environmentally manageable and did not indicate severe contamination.

3.2 SEDIMENT pH AND ORGANIC MATTER

Sediment pH values ranged approximately between 6.9 and 8.3 throughout the study period, indicating neutral to slightly alkaline conditions. Such conditions support stable geochemical environments and favorable nutrient retention.

Organic matter content showed moderate seasonal and spatial variability.

- Harbour Basin showed moderate organic accumulation associated with sediment deposition and operational activity
- Offshore stations occasionally recorded higher organic matter due to planktonic residue deposition and reduced sediment disturbance

- Port Entrance often exhibited comparatively lower organic accumulation because of continuous sediment mixing and turbulence

The observed organic matter levels indicate balanced organic deposition without excessive enrichment.

3.3 SEDIMENT NUTRIENTS

Sediment nitrate concentrations generally ranged between approximately 1.6 and 5.7 mg/kg, while phosphate concentrations varied between approximately 1.4 and 28 mg/kg.

Slightly higher nutrient concentrations at harbour stations reflect:

- Organic matter decomposition
- Sediment adsorption processes
- Nutrient retention in fine sediments
- Harbour operational influence

The nutrient concentrations support moderate biological productivity and benthic activity without indicating severe sediment eutrophication.

3.4 OIL AND GREASE IN SEDIMENTS

Sediment oil and grease concentrations ranged approximately between 1 and 31 mg/kg during the monitoring period.

Port Entrance Channel consistently showed relatively higher concentrations because of:

- Shipping movement
- Fuel residues
- Vessel maintenance activities
- Hydrocarbon deposition

Offshore stations showed comparatively lower concentrations because of dilution and dispersion.

Although localized hydrocarbon accumulation was evident near operational zones, the concentrations did not indicate major petroleum contamination events.

3.5 MAJOR AND TRACE METALS IN SEDIMENTS

IRON AND MANGANESE

Iron and manganese were the dominant metals detected in sediments and reflected natural mineralogical composition and sediment deposition processes.

Higher concentrations within harbour regions indicate accumulation of fine particles and localized sediment trapping.

NICKEL, CHROMIUM, ZINC, LEAD AND COPPER

Moderate spatial variability was observed for nickel, chromium, zinc, lead, and copper.

- Harbour Basin and Port Entrance generally showed comparatively higher concentrations
- Offshore stations consistently exhibited lower concentrations because of dilution and improved circulation

The observed enrichment may be associated with:

- Harbour infrastructure corrosion
- Shipping activities
- Antifouling coatings
- Historical sediment deposition
- Urban and industrial influence

MERCURY, ARSENIC AND SELENIUM

Mercury, arsenic, and selenium concentrations remained relatively low throughout the monitoring period and did not indicate widespread contamination.

Overall, the sediment metal distribution suggests moderate localized enrichment near operational areas but no severe ecological contamination.

4. RESULTS AND DISCUSSION – BIOLOGICAL PARAMETERS

4.1 OVERVIEW OF BIOLOGICAL PRODUCTIVITY

Biological monitoring from October 2025 to March 2026 demonstrated moderate to good ecological productivity throughout the Gangavaram Port Harbour ecosystem.

The monitored biological parameters indicate that:

- Offshore stations support comparatively stronger biological productivity
- Harbour regions maintain moderate but stable biological conditions
- Tidal exchange plays a major role in regulating biological productivity
- No harmful bloom conditions or ecological stress were observed

4.2 PHYTOPLANKTON ABUNDANCE

Phytoplankton abundance throughout the monitoring period generally ranged between approximately 3270 and 6030 cells/L.

Higher phytoplankton abundance was consistently observed at offshore stations due to:

- Better water circulation
- Enhanced nutrient exchange
- Improved light penetration
- Stable marine conditions

Harbour Basin occasionally showed localized phytoplankton enrichment during low tide because of nutrient retention and reduced water movement.

Slight reductions during high tide at some stations reflect natural dilution and plankton redistribution rather than biological decline.

The observed phytoplankton abundance indicates moderate primary productivity typical of healthy tropical coastal systems.

4.3 ZOOPLANKTON ABUNDANCE

Zooplankton abundance showed moderate seasonal and tidal variation throughout the study period.

Higher zooplankton abundance was frequently recorded at offshore stations and during high tide conditions due to:

- Improved feeding opportunities
- Enhanced plankton transport
- Better water circulation
- Stable trophic interactions

The consistent presence of zooplankton across all stations confirms healthy secondary productivity and balanced ecological functioning.

4.4 CHLOROPHYLL PIGMENTS

Chlorophyll-a and chlorophyll-b concentrations remained within ranges typical of productive coastal marine ecosystems.

Spatial variation in chlorophyll concentrations reflects:

- Differences in phytoplankton abundance
- Nutrient availability
- Tidal mixing
- Species composition
- Water transparency

Higher chlorophyll concentrations at offshore stations and during favourable tidal phases indicate active photosynthetic productivity.

No evidence of excessive algal proliferation or harmful bloom formation was observed during the monitoring period.

4.5 PHYTOPLANKTON BIOMASS AND PRIMARY PRODUCTIVITY

Phytoplankton biomass and primary productivity remained moderate to high throughout the study period.

Primary productivity values indicate active carbon fixation and healthy biological functioning of the harbour ecosystem.

Higher productivity at offshore stations reflects:

- Better light penetration
- Efficient nutrient cycling
- Strong marine circulation
- Reduced anthropogenic disturbance

Harbour regions also maintained moderate productivity, suggesting that tidal flushing effectively supports ecological stability despite operational activity.

5. BENTHIC COMMUNITY STRUCTURE

5.1 BENTHIC DENSITY AND BIOMASS

The benthic community structure showed moderate to good ecological stability throughout the study period.

Total benthic density and biomass were consistently higher at offshore stations compared to Harbour Basin and Port Entrance Channel.

This distribution reflects:

- Better sediment stability offshore
- Reduced physical disturbance
- Improved oxygenation
- Lower hydrocarbon accumulation

Lower benthic abundance within harbour regions may be associated with:

- Sediment disturbance
- Vessel movement

- Resuspension processes
- Variable sediment conditions

Despite these localized influences, benthic communities remained functional and ecologically stable across all monitoring stations.

6. SPATIAL AND SEASONAL INTERPRETATION

6.1 HARBOUR BASIN AND PORT ENTRANCE CHANNEL

The Harbour Basin and Port Entrance Channel consistently exhibited:

- Slightly elevated TSS
- Moderate organic loading
- Higher oil and grease concentrations
- Localized trace metal enrichment
- Reduced transparency
- Moderate biological productivity

These characteristics reflect direct influence of:

- Port operations
- Shipping movement
- Sediment disturbance
- Fuel handling
- Harbour infrastructure

However, the observed variations remained moderate and localized, without evidence of severe ecological degradation.

6.2 OFFSHORE STATIONS

Outside South Break Wall and Outside North Break Wall consistently demonstrated:

- Better water clarity
- Higher dissolved oxygen
- Improved transparency
- Stronger biological productivity
- Healthier benthic conditions
- Lower contaminant accumulation

These stations benefited from:

- Strong tidal flushing
- Open-sea circulation
- Better dispersion
- Reduced operational disturbance

The offshore zones therefore serve as ecologically stable reference environments for comparison with harbour regions.

6.3 SEASONAL VARIABILITY (OCTOBER 2025 – MARCH 2026)

A gradual seasonal transition was evident during the six-month monitoring period.

OCTOBER–NOVEMBER 2025

- Relatively higher temperatures
- Stable salinity
- Moderate biological productivity
- Balanced nutrient conditions
- Good dissolved oxygen

DECEMBER 2025 – JANUARY 2026

- Gradual cooling trend
- Improved dissolved oxygen
- Slight increase in harbour sediment enrichment

- Stable plankton productivity
- Improved offshore water quality

FEBRUARY–MARCH 2026

- Further reduction in temperature
- Moderate tidal variability
- Continued ecological stability
- Strong offshore productivity
- Stable benthic conditions

7. INTEGRATED ENVIRONMENTAL INTERPRETATION

The integrated assessment of marine water, sediments, biological productivity, and benthic communities clearly indicates that the Gangavaram Port Harbour ecosystem remained environmentally stable and ecologically functional throughout the monitoring period from October 2025 to March 2026.

The environmental variations observed during the study were largely associated with:

- Tidal exchange
- Sediment transport
- Seasonal climatic transition
- Harbour operational activities
- Natural marine mixing

Key environmental observations include:

- Stable physicochemical characteristics
- Adequate dissolved oxygen throughout the study area
- Moderate nutrient concentrations without eutrophication
- Localized but manageable hydrocarbon influence
- Low to moderate trace metal concentrations
- Healthy planktonic productivity
- Functional benthic habitats
- Strong offshore ecological stability

The harbour ecosystem demonstrated effective self-purification capacity supported by tidal flushing, marine circulation, and sediment dispersion.

8. CONCLUSION

The six-month environmental monitoring programme conducted in the Gangavaram Port Harbour region from October 2025 to March 2026 demonstrates that the harbour ecosystem remains environmentally stable, moderately productive, and ecologically sustainable under prevailing operational conditions.

The overall results indicate that:

- Marine water quality remained within acceptable environmental limits prescribed by CPCB and MoEF coastal water quality criteria.
- Harbour Basin and Port Entrance Channel exhibited moderate operational influence through slightly elevated suspended solids, hydrocarbons, nutrients, and trace metals.
- Offshore stations maintained comparatively better ecological conditions due to strong marine water exchange and effective tidal flushing.
- Sediment quality reflected moderate localized enrichment near operational areas but no severe contamination.
- Biological productivity remained stable throughout the monitoring period, supporting healthy trophic interactions and ecological functioning.
- Benthic communities remained active and well distributed, particularly in offshore regions with stable sediment conditions.
- No evidence of severe eutrophication, oxygen depletion, harmful algal blooms, or widespread heavy metal contamination was observed.

The study therefore confirms that the observed environmental variations are primarily associated with natural hydrodynamic processes and routine harbour operations rather than significant ecological degradation.

Overall, the Gangavaram Port Harbour ecosystem demonstrates good environmental resilience and ecological balance. Continued periodic environmental monitoring and implementation of best management practices are recommended to ensure long-term environmental sustainability and early detection of any future ecological changes associated with expanding port activities.

Visakha Enviro Labs & Consultants Pvt Ltd

PMR Manikanta Enclave, NH-16,
Marikavalasa Junction, Madhurawada,
Visakhapatnam, Andhra Pradesh- 530 048.
Tel No: 0891-2595199, Mob: +91 8184909984



Excellence in Environmental Testing & Analysis





ANNEXURE -16
NEWSPAPER ADVERTISEMENT COPIES

PUBLIC NOTICE

The project details along with terms and conditions are appended herewith from page no.7 onwards.

(e-signed)
Ananddeep Raju Scientist E
IA - (INPRA-1 sector)

and have, during operation phases, direct employment of 100 and indirect employment of 500 workers are envisaged.

(Cont. en next page)

(Contd. from earlier page)

- (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 projects.
- (vii) Used O.F.s and T.E.s should be properly collected and disposed off for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid any contamination.

(viii) Oil spill contingency plan shall be prepared and part of EMP 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) Dredging shall not be carried out during the fish breeding and spawning seasons.
- (ii) Dredging, etc. shall be carried out in the confined manner to reduce the impacts on marine environment.
- (iii) The dredging schedule shall be as planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.

(iv) 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.

(v) 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 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.

(vi) 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 algal mats, meads and mega flora and fauna and faunal components of marine biodiversity.

(vii) 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 works shall be maintained as per international standards for occupational health and safety with provision of fresh air respirators, bolsters, 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) In case of repair of any old vessels, extensive care shall be taken while handling Asbestos & Freon gas. Besides, fully employed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSSE.

(iv) 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 officers to prevent the occurrence of untoward incidents/ accidents.

(v) Emergency preparedness plan based on the Hazard Identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

(vi) 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 SPT, 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.

(vii) 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 infringement or 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 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 supervision of senior executives, who will directly report to the head of the organization.

(iii) Action plan for implementing EOP and environmental compliance shall be prepared and shall be a part 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.

- (v) 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 respective prominently advertising 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 environmental 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 environmentclearanceportal.

(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.

(vi) The criteria pollutant levels namely: PM10, SO2, 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.

(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 project 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 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 under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.

(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, 1986; 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 15 of the National Green Tribunal Act, 2010.

22. This issues with the approval of the Competent Authority.

Copy to:

1. The Principal Secretary, Department of Environment, Forest, Science & Technology, Government of Andhra Pradesh, Hyderabad, A.P.
2. The Member Secretary, AP Pollution Control Board, Chalapathi Street, Kasuripatpet, Vijayawada - 520 010.
3. The Chairman, Central Pollution Control Board, Parvash Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
4. The Additional Principal Chief Conservator of Forests (C), Aayale Bhawan, K.M. Munshi Road, Nagarampalam, Guntur-522 004, Andhra Pradesh.
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhawan, New Delhi.
6. Guard File/Record File
7. Notice Board

(Amarendra Raju)
Scientist-E

(Amarendra Raju)
Scientist-E

Published In
THE NEW INDIAN EXPRESS, HYDERABAD. 27th FEBRUARY 2012

NOTICE

This is to inform that Ministry of Environment & Forest has given the Environmental Clearance for the development of Phase II of Gangavaram Port. The copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website <http://www.envfor.nic.in>

Management
Gangavaram Port Limited

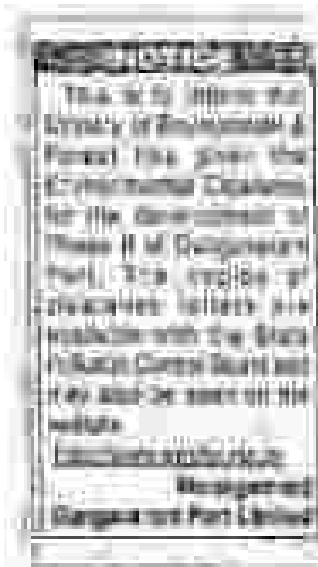
VAARTHA, 27th FEBRUARY 2012

మౌఖిక

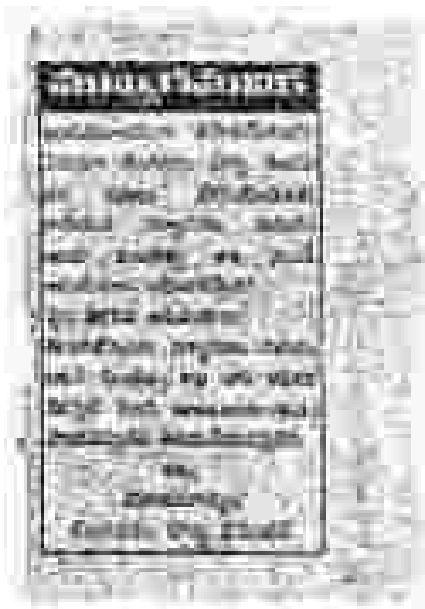
ఇందువల్లముగా తెలియజేయునది
ఎమునగా గంగవరం పోర్టు రెండవ
దశ పనులు ప్రారంభించుటకు
కావలసిన పర్యావరణ మరియు
అటవీ మంత్రిత్వ శాఖ నుండి
అనుమతులు లభించడమైనది.
పైన తెలిపిన అనుమతులు
తెలుసుకొనుటకు పర్యావరణ మరియు
అటవీ మంత్రిత్వ శాఖ వారి అధికారి
వెబ్సైట్ నుండి (www.envfor.nic.in)
బొందవచ్చునని తెలియజేయబడినది.

ఇట్లు
యాజమాన్యం
గంగవరం పోర్టు లిమిటెడ్

Published In
THE NEW INDIAN EXPRESS, HYDERABAD, 27th FEBRUARY, 2012



VARTHA, 27th FEBRUARY 2012



ANNEXURE -17
PHOTOGRAPHS

Mechanized Terminals:



Container handling equipment



Ship Unloaders



Ship Loader & unloaders



Mechanized Loader & unloaders



Mechanized Cargo Operations:



HMC Equipmen

Hooded Conveyor System for internal cargo transport



Hooded conveyor System



Cladding to conveyor belt



Closed cargo shed

Mechanized Outbound Transport:



Silo



Stacker



Reclaimer

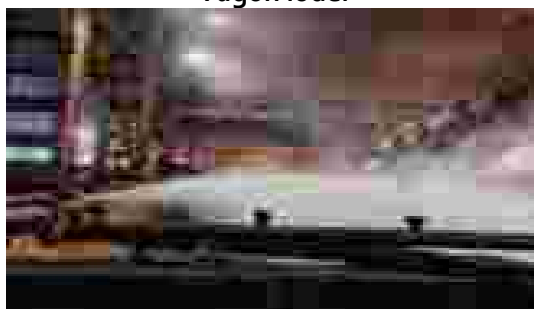


Mechanized Transfer towers



Transfer towers and Vessel loading area sprinkling systems

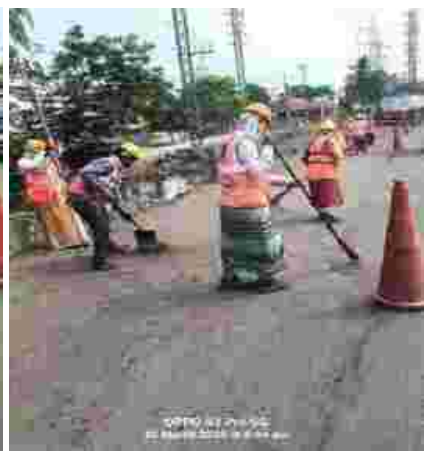
Vagon loder





Periodically Drains Maintenance





Greenbelt Photographs:



Greenbelt within the Port premises covering yards, berths and Offices



Greenbelt Truck Parking Around



Greenbelt at South boundry wall





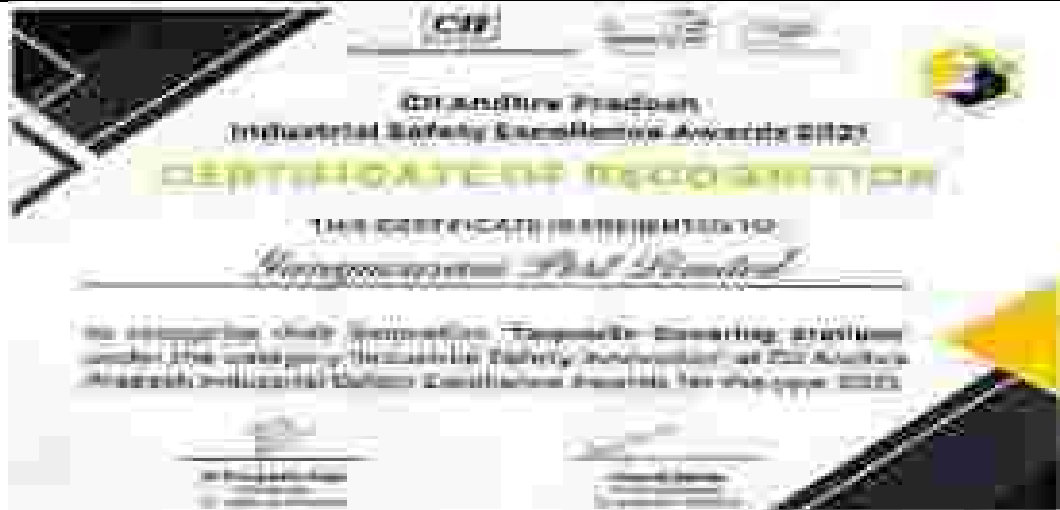
Green Belt at Gangavaram Windscreen area.



Miyawaki Plantation at North Boundary wall Location



For this innovative invention, AGPL received "Industrial Safety Excellence Award – 2021 from the Confederation of Indian Industry (CII.)



The Port shall ensure coverage of Tarpaulin all sides of dusty cargo Transporting trucks/wagons, including rainy season to avoid the spillages.



The Port shall ensure covering of dusty cargo carrying trucks/wagons with tarpaulins tightened at all sides with ropes and shall avoid overload of dusty cargo material.



The Port shall maintain web cameras at Tarpaulin sheet covering of trucks/wagon area, weighbridge, truck-tyre washing area, entrance & exit gate of the ports and shall maintain one month recorded data to produce at the request of the officer of the concerned authorities during their inspection, as being monitored through integrated security control room by GPL.



The Port shall maintain coal-stocking heights as per the APPCB consent conditions.



The Port shall ensure that the cargo transport trucks display sticker showing valid vehicle fitness certificate and pollution certificate in front side of the vehicles.



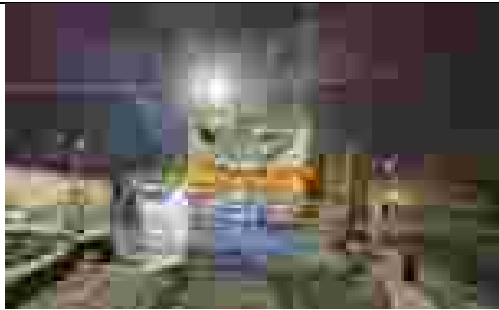
The Port shall carryout regular wetting of the internal roads and shall remove the sludge accumulated in drains from time to time to avoid contamination of surrounding water bodies.



AGPL is maintaining/cleaning the storm water drain periodically by removing the settled sludge to avoid contamination in surrounding water bodies.



The Port shall upgrade existing truck tyre washing system to two stage automatic truck-tyre washing system to control dust emissions, within six months as committed



Automatic sensor based Truck Tyre Washing facility and Automatic sensor based Truck Tyre Washing system with oil skimmer & water treatment facility.



NABL CERTIFICATE



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

**SV ENVIRO LABS & CONSULTANTS (LABORATORY
SERVICES DIVISION)**

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

ENVIRO HOUSE, B-1, BLOCK-B, IDA, VISAKHAPATNAM, ANDHRA PRADESH, INDIA

in the field of

TESTING

Certificate Number: TC-5582

Issue Date: 29/12/2024

Valid Until: 28/12/2028

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)

Name of Legal Entity: SV ENVIRO LABS & CONSULTANTS

Signed for and on behalf of NABL



Anuja Anand
Director

N. Venkateswaran
Chief Executive Officer

Your (**Half Yearly Compliance Report**) has been **Submitted** with following details

Proposal No	EC21A033AP141550
Compliance ID	1228216927
Compliance Number(For Tracking)	EC/M/COMPLIANCE/1228216927/2026
Reporting Year	2026
Reporting Period	01 Jun(01 Oct - 31 Mar)
Submission Date	28-05-2026
RO/SRO Name	V Geroge Jenner
RO/SRO Email	tr025@ifs.nic.in
State	ANDHRA PRADESH
RO/SRO Office Address	Integrated Regional Offices, Vijayawada

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



ANDHRA PRADESH POLLUTION CONTROL BOARD

ఆంధ్ర ప్రదేశ్ కాలుష్య నియంత్రణ మండలి



HOME ABOUT US * FOR INDUSTRY * FOR MSME * CONTACT US MEDIA LOGIN *

Compliance of EC/CE/EO/Directives

For submission of compliance report by the industries

Compliance Type *

EC

For The Year *

2025

For The Months *

☒ January-June ☐ July-December

District *

Vishakhapatnam

Name Of Industry *

Adani Gas Processing Unit Ltd

Order Number *

30/5/2023-14-10

Order Issued On *

12/04/2023

Issued By *

Ms/FAC, Delhi

Email *

rajibchowdhury@yahoo.co.in

Phone Number *

9927054236

Address *

Gangavaram (N) Petrochemicals Pvt. Ltd.
Vishakhapatnam District, Vishakhapatnam, Andhra Pradesh

Status of Compliance *

Complied

Upload the Compliance Report *

Choose file EC Compliance Report.pdf

Note *

2. 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



captcha

submit

Type here to search





ANDHRA PRADESH POLLUTION CONTROL BOARD

ఆంధ్ర ప్రదేశ్ ప్రాంతీయ పరిశుద్ధి నియంత్రక బోర్డు



Home | About Us | Pollutants | Air Quality | Compliance | Reports | Contact Us | Web Links

Compliance of EC/CTE/CI/DIR sections

For submission of compliance report only via internet

Compliance Type *

-Select-

For The Year *

-Select-

For The Month *

Month Year - Select Year - Select Month

District *

-Select-

Name Of

Place

Order Issued On *

Please Select Order Date

Issued By

-Select-

Order Number *

Please Enter Order Number

Status *

Please Enter Status

Phone Number *

Please Enter Phone Number

Address

-Select-

Status of Compliance *

-Select-

Upload the Compliance Report *

Create File No File Chosen

Note *

☐ Environmental Clearance (EC) Project report must have a valid year EC Compliance report submitted by project/industry/sector/verified compliance report in case of small projects

Verify



Email ID/Phone

Submit



Type here to search



Date: 28.05.2026.

To
The Regional Officer
Integrated Regional Office (IRO), Vijayawada,
Ministry of Environment, Forest and Climate Change,
Green House Complex, Gopalareddy Road,
Vijayawada- 520010, Andhra Pradesh.

Sir,

Sub: Submission of EC Six Monthly Compliance report of **Adani Gangavaram Port Limited** over an extent of 2.024 Ha situated at Old Sy. No. 274, New Sy No. 307, Pedagantyada Village and Mandal, Visakhapatnam District, Andhra Pradesh – Reg.

- Ref:** 1. Environmental Clearance Expansion Order No. SEIAA / AP / MIN / EC / VS / 04 / 2025 / 1340 / 269.45 & 269.21, Date: 02.09.2025.
2. Environmental Clearance Order No. SEIAA/AP/VSP/MIN/08/2020/2060/158.105 & 153.124.516, Date: 29.07.2021.
3. Consent to Establish Expansion Order No. 12132/APPCB/ZO-VSP/VSP/CTE/2026, Date: 31.12.2025.
4. Consent to Operate Order No. 8375/APPCB/ZO-VSP/VSP/CTO/2024, Date: 26.02.2024.
5. Consent to Operate Expansion Order applied in online Application No. 5014112, Date: 25.03.2026.

We wish to inform you that the State Environmental Impact Assessment Authority (SEIAA), Andhra Pradesh vide ref (1) has accorded Environmental Clearance for Mining of Building stone with capacity from 12,450 m³/annum to 1,88,226 m³/annum over an extent of 2.024 Ha situated at Old Sy. No. 274, New Sy No. 307, Pedagantyada Village and Mandal, Visakhapatnam District, Andhra Pradesh.

As per the general conditions No (xx) of issued Environmental Clearance, the Project Proponent has to submit a six monthly compliance report to Integrated Regional Office (IRO), Vijayawada. We are submitting herewith compliance report for the period of **1st October 2025 to 31st March 2026** for the said project for your kind perusal.

Thanks and Regards,

For **Adani Gangavaram Port Limited**



(Authorized Signatory)

Copy to: The Environmental Engineer, A.P Pollution Control Board Regional Office Visakhapatnam for kind information.

Adani Gangavaram Port Limited

(Formerly "Adani Gangavaram Port Private Limited")

Gangavaram Post, Pedagantyada,

Visakhapatnam, Andhra Pradesh, India - 530 044

CIN : U61100GJ2021PLC124091

Registered Office : Adani Corporate House, Shanthigram, Nr. Vaishno Devi Circle, S.G. Highway, Khodiyar, Ahmedabad-382421, Gujarat, India.

Tel + 91-891-2701177, 2889999

Fax +91-891-2703377

www.adaniports.com

SIX MONTHLY COMPLIANCE REPORT

COMPLIANCE OF ENVIRONMENTAL CLEARANCE

**FOR THE PERIOD OF
01ST OCTOBER 2025 TO 31ST MARCH 2026**

For

“Building Stone Mine”

Extent of 2.024 (Ha) in Old Sy No. 274, New Sy No. 307, Pedagantyada (V & M), Visakhapatnam District, Andhra Pradesh.

By

Adani Gangavaram Port Limited

Submitted to

The Regional officer
Integrated Regional Office {IRO}, Vijayawada,
Ministry of Environment, Forest and Climate Change,
Green House Complex, Gopalareddy Road,
Vijayawada-520010, Andhra Pradesh.

Prepared By

M/s. SV ENVIRO LABS & RESEARCH PRIVATE LIMITED
(Formerly known as M/s. SV Enviro Labs & Consultancy)

Environmental Engineers & Consultants in Pollution Control

H.O: Enviro House, Block-B, B-1, IDA, Autonagar,
Visakhapatnam – 530 012

Ph: 0891-2755528, Tel/Fax: 0891-2755529,

E-mail: svenviro_labs@yahoo.co.in

Recognized by MoE&F and NABL



INDEX

S.NO	CONTENTS
1	Covering Letter
2	Covering Page
ANNEXURES	
3	Annexure-1 (Environmental Clearance Expansion Order)
4	Annexure-2 (Compliance of Environmental Clearance Expansion Order)
5	Annexure-3 (Consent for Establishment Expansion Order)
6	Annexure-4 (Compliance of Consent for Establishment Expansion Order)
7	Annexure-5 (VIWSCO Water Agreement)
8	Annexure-6 (Photographs)

Annexure-1
(Environmental Clearance Expansion Order)



File No: AP MIN EC VS 04 2025 1340

Government of India

Ministry of Environment, Forest and Climate Change

(Issued by the State Environment Impact Assessment Authority(SEIAA),
ANDHRA PRADESH)



Dated 02/09/2025

To,

Anil Kumar Trivedi
ADANI GANGAVARAM PORT LIMITED
ADANI CORPORATE HOUSE Shantigram, Near Vaishnodevi circle, SG Highway,
Khodiyar,Ahmedabad, AHMADABAD, GUJARAT, 382421
environment.agpl@adani.com

Subject: Grant of EC under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of EC under the provision of the EIA Notification 2006-regarding in respect of project Adani Gangavaram Port Limited submitted to Ministry vide proposal number SIA/AP/MIN/531283/2025 dated 09/04/2025.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC25C0108AP5449959N
(ii) File No.	AP MIN EC VS 04 2025 1340
(iii) Clearance Type	EC
(iv) Category	B2
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Adani Gangavaram Port Limited
(viii) Name of Company/Organization	ADANI GANGAVARAM PORT LIMITED
(ix) Location of Project (District, State)	VISAKHAPATANAM, ANDHRA PRADESH
(x) Issuing Authority	SEIAA
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

N/A

	State Level Environment Impact Assessment Authority (SEIAA)
	Andhra Pradesh
	Ministry of Environment, Forests & Climate Change
	Government of India
	3 rd Floor, AP MARKFED Building, APIIC Colony Road, Auto Nagar, Vijayawada-520007.

Order No. SEIAA/AP/MIN/EC/VS/04/2025/1340/269.45&269.21

Sub: SEIAA, A.P. – 2.024 Ha, Building Stone Mine of M/s Adani Gangavaram Port Limited at Old Sy No. 274, (New Sy No. 307) of Pedagantyada Village and Mandal, Visakhapatnam District, Andhra Pradesh – Environmental Clearance – Expansion - Issued – Reg.

- I. This has reference to your application submitted through online on 09.04.2025 (SIA/AP/MIN/544416/2025) and Clarification submitted on 25.07.2025, seeking Environmental Clearance for Expansion to the 2.024 Ha, Building Stone at Old Sy No. 274, (New Sy.No. 307) of Pedagantyada Village and Mandal, Visakhapatnam District, Andhra Pradesh in favour of M/s Adani Gangavaram Port Limited. It was reported that the nearest human habitation viz., Gangavaram (V) exists at a distance of about 0.61 km from the mine lease area. It was noted that the capital investment of the project is Rs. 67.0 Lakhs and capacity of the project is as follows:

**Expansion of Building Stone Mining from
12,450 m³/annum to 1,88,226 m³/annum in 2.024 Ha**

- II. As seen from the Mining plan approved by the competent Government Authority the following two aspects are noted.

- I. The location of the mine is as follows:

BP. No	Latitude (N)	Longitude (E)
P1	17°38'18.7"N	83°14'16.9"E
P2	17°38'17.7"N	83°14'18.3"E
P3	17°38'12.1"N	83°14'13.4"E
P4	17°38'14.6"N	83°14'9.8"E

- ii. It is an open cast Semi-mechanized mine. Life of the Mine is 3 years. The total mine lease area is 2.024 Ha.

The proposal has been examined and processed in accordance with EIA

Notification, 2006 and its amendments thereof. The State Level Expert Appraisal Committee (SEAC) examined the application, in its meeting held on **30.07.2025**.

Minutes of SEAC Meeting:

Category: B2.

The proposed project is for enhancement mining of Building Stone in an area of 2.024 Ha. with a proposed production quantity of Building Stone – from 12,450 m³/annum to 1,88,226 m³/annum with a condition that the total production during a scheme should be limited to the approved quantity as per Mining scheme/ plan.

The proposed project falls under Item No. 1(a) of the schedule of the EIA Notification 2006 and its amendments thereof - (i). Mining of minerals (<250 ha of mining lease area in respect of non-coal mine lease).

The project proponent and their consultant, M/s. SV Enviro Labs & Consultants have attended the meeting and presented their proposal. The SEAC Committee noted that:

- a. The SEIAA, A.P vide order dt. 29.07.2021 issued Environmental clearance to M/s. Gangavaram Port Limited., for mining of Rough Stone 12450 m³/annum.
- b. The SEIAA, A.P vide order dt. 13.02.2025 transferred EC order in the name of M/s. Adani Gangavaram Port Limited.
- c. Now, the project proponent applied for Expansion of Environmental clearance.
- d. "The committee noted that, as per the Office Memorandum dated 08.06.2022, submission of a Certified Compliance Report (CCR) is mandatory for existing projects undergoing expansion. Hence, committee directed PP to submit CCR.
- e. The Committee after examining the project proposals, presentations, mining plan, MoEF&CC Notifications & OMs and detailed deliberations, recommended to raise ADS for CCR Report.
- f. Accordingly, the PP submitted ADS reply and again, proposal is placed in 269th SEAC meeting. The committee noted that:
 - The Project Proponent (PP), vide letter dated 27.06.2025, submitted a certified compliance report issued by the Integrated Regional Office (IRO), Vijayawada.
- g. The Department of Mines and Geology issued Transfer of work order vide order dt. 03.10.2024, which is valid upto 05.03.2029.
- h. The Committee noted that as per the cluster letter dt. 06.12.2024

issued by the Department of Mines & Geology, there are no existing quarry leases within the radius of 500 mtrs area. The total applicable cluster area is < 5.0 Ha.

- i. As per the approved mining scheme dt. 19.09.2024, the total available mineral reserves are 5,64,680.8322 m³. The proponent proposed to excavate Building Stone –1,88,226 m³/annum. The Life of the mine is 3 years.
- j. The Department of Mines and Geology vide letter dt. 01.10.2024 issued production and dispatch details letter and permits are within limits only.
- ii. The project proponent informed that they have allocated Rs. 4.18 Lakhs as capital cost and Rs. 4.97 Lakhs as a recurring cost budget for the EMP. The proponent volunteered to provide **2 lakhs** as a part of Corporate Social Responsibility (CSR) activity and shall maintain till the life of the mine.

The project proposals, presentations, mining plan, MoEF&CC Notifications & OMs and detailed deliberations, recommended SEIAA to issue Environmental Clearance expansion for the mining of Building Stone – from 12,450 m³/annum to 1,88,226 m³/annum over a period of 3 years, covering an area of 2.024 hectares, in favour of M/s. Adani Gangavaram Port Limited, at Old Sy No. 274, (New Sy No. 307) Pedagantyada Village and Mandal, Visakhapatnam District. The recommendation is subject to the following additional conditions:

1. The project proponent shall comply with the proposals furnished in the Environmental management plan.
2. The project proponent shall develop greenbelt along approach roads & village Roads.
3. The project proponent shall maintain 7.5mt greenbelt in buffer zone and existing buffer zone plantation should not be disturbed.
4. The proponent shall take dust suppression measures to meet the CPCB stipulated ambient air quality standards at any point of time.
5. The proponent shall carryout suppression of dust generated due to transport vehicles by continuous water spraying using tankers.
6. The vehicles carrying the mines material shall be covered with tarpaulin during vehicular movement.
7. The project proponent shall not use village road/ canal bund roads for mineral transportation purpose.
8. The project proponent shall restrict vehicles movement during the peak hours to avoid accidents.

9. The project proponent shall restrict the load of the transport vehicles not more than 21 tons to avoid road damages and dust nuisance to surroundings.
10. The Project Proponent (PP) shall regularly upload the half-yearly compliance reports.
11. The PP shall complete the entire greenbelt development within the first year itself and ensure its maintenance throughout the lease period.

The State Level Environment Impact Assessment Authority (SEIAA), in its meeting held on 22.08.2025 examined the proposal and the recommendations of SEAC and decided to accept SEAC recommendations aforesaid for strict compliance by the proponent and to issue Environmental Clearance.

The SEIAA, A.P hereby accords Environmental Clearance to the project as mentioned at Para No. I under the provisions of the EIA Notification 2006 and its subsequent amendments issued under Environment (Protection) Act, 1986 subject to implementation of the following conditions:

Part A. Special Conditions:

- i. The proposal shall not violate the provisions of the following Acts & Rules and subsequent amendments:
 - a. Forest Conservation Act 1980;
 - b. Wild Life (Protection) Act, 1972;
 - c. CRZ Notification, 2011;
 - d. The Eco sensitive areas as notified under Environment (Protection) Act, 1986;
 - e. Critically polluted areas as notified by CPCB and also shall not harm live stocks and human beings and disturb their activities.
- ii. The total production during a scheme should be limited to the approved quantity as per Mining scheme/ plan.
- iii. The project proponent shall allocate Rs. 4.18 Lakhs as capital cost and Rs. 4.97 Lakhs as a recurring cost budget for the EMP. The proponent volunteered to provide 2 lakhs as a part of Corporate Social Responsibility (CSR) activity and shall maintain till the life of the mine.
- iv. The project proponent shall comply with the proposals furnished in the Environmental management plan.
- v. The project proponent shall develop greenbelt along approach roads & village Roads.
- vi. The project proponent shall maintain 7.5 mt greenbelt in buffer zone and

- existing buffer zone plantation should not be disturbed.
- vii. The proponent shall take dust suppression measures to meet the CPCB stipulated ambient air quality standards at any point of time.
 - viii. The proponent shall carryout suppression of dust generated due to transport vehicles by continuous water spraying using tankers.
 - ix. The vehicles carrying the mines material shall be covered with tarpaulin during vehicular movement.
 - x. The project proponent shall not use village road/ canal bund roads for mineral transportation purpose.
 - xi. The project proponent shall restrict vehicles movement during the peak hours to avoid accidents.
 - xii. The project proponent shall restrict the load of the transport vehicles not more than 21 tons to avoid road damages and dust nuisance to surroundings.
 - xiii. The Project Proponent (PP) shall regularly upload the half-yearly compliance reports.
 - xiv. The PP shall complete the entire greenbelt development within the first year itself and ensure its maintenance throughout the lease period.
 - xv. The project proponent shall follow the order of National Green Tribunal passed in O.A.No.304/2019.
 - xvi. The project proponent shall maintain the setback distance 7.5 meters buffer zone all around the mine lease area for greenbelt development and other conditions are to be fulfilled.
 - xvii. The avenue plantation with tall plants of at least 1.5m height for 1 km length of the approach road on either side of the road is to be developed and maintained. The Entire greenbelt should be developed in the first year itself.
 - xviii. The proponent is advised to ensure safety to animal and public life.

Part B. Specific Conditions:

1. Air Pollution:-

- i.
 - a. Suitable mining methods shall be adopted to control dust emissions, as per approved mining plan and EMP/EIA.
 - b. The proponent shall comply with the mining methodology mentioned in approved mining plan and Form1.
- ii. Greenbelt shall be developed along the boundary of mining lease area and also in back filled and reclaimed areas with tall growing native species in consultation with the local DFO/Agriculture

Department. The proponent of mine shall carry mining operations in such a manner so as to cause least damage to the flora of the mining area and nearby areas. He shall take immediate measures for planting in the same area or any other area selected by authorities not less than twice the number of trees going to be felled by mining operations. He shall also take measures for restoration of other flora /fauna if damaged by mining operations. In case any felling or damage to fauna and flora is involved, prior permission shall be taken from the concerned regulatory authority, by the proponent, without which mining shall not be taken up.

- iii. Effective safe guard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Prior concurrence of regulatory Authority must be obtained by the proponent.
- iv. The proponent of mine shall carry air quality monitoring in the core zone as well as buffer zone for RSPM and Noise levels. Location of monitoring stations should be decided based on the metrological data topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with Andhra Pradesh Pollution Control Board. The data so recorded should be regularly submitted to the Ministry including its Regional office located at Chennai and the Andhra Pradesh Pollution Control Board/Central Pollution Control Board once in six months. Prior concurrence of regulatory Authority must be obtained by the proponent.
- v. The proponent shall construct graded roads connecting the mining area to the nearby roads to avoid dust nuisance due to vehicular movements. Prior concurrence of regulatory Authority must be obtained by the proponent.
- vi. The proponent shall take precautions against noise arising out of mining operations and shall be abated or controlled at the source so as to keep it within the permissible limits notified under Environmental (Protection) Act, 1986 / Noise Pollution (Regulations & Control) Rules, 2010 by implementing the following noise control measures.
 - Proper and regular maintenance of vehicles and other equipment.

- The proponent shall ensure that there shall be no excessive noise, while taking up mining activity.
 - The workers employed shall be provided with protection equipment and earmuffs etc.
 - Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
- vii. Whenever any damage to public buildings or monuments is apprehended due to their proximity to the mining lease area, scientific investigations shall be carried out by the holder of mining lease so as to keep the ground vibrations caused by blasting operations within safe limit. In such cases, Prior concurrence of concerned Regulatory Authority must be obtained by the proponent, without which, mining shall not be taken up.
- viii. The proponent shall not take-up mining activity unless he obtains the safety clearance certificate from the Govt. competent authority

2) Water Pollution:-

- i. As per records the Source of water is from nearby village ponds. Total water requirement is 4.0 KLD. Out of that, 1.5 KLD is used for Dust suppression; 1.0 KLD is used for Domestic purpose; 1.5 KLD is used for Green belt purpose.
- ii. Garland drain and Siltation ponds of appropriate size should be constructed for the working pit to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly delisted, particularly after monsoon, and maintained properly. Prior concurrence of Regulatory Authority concerned shall be taken for this activity before taking up mining.
- iii. The proponent of the mine shall take all possible precautions to prevent or reduce the discharge of toxic and objectionable liquid effluents from mine, workshop, tailing ponds into surface bodies, ground water aquifer and useable lands to a minimum. The effluents shall be suitably treated, if required, to conform to the general standards notified under Environmental (Protection) Act, 1986. Prior concurrence of Regulatory Authority concerned shall be taken for this activity before taking up mining.
- iv. Monitoring of ground water level and quality should be carried out

quarterly by the project proponent in and around the project area in consultation with State Ground Water Department/Central Ground Water Authority and data thus collected shall be submitted regularly to the MoE&F and its Sub-Office Vijayawada, CGWA, and the Regional Director, Central Ground Water Board, Hyderabad. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary correction measures shall be carried out in consultation with concerned Regulatory Authority.

- v. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB, Southern Region, Hyderabad. Suitable measures should be taken for rainwater harvesting in consultation with concerned Regulatory Authority.
- vi. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

3) Solid Waste :-

- i. **Topsoil:** Wherever top soil exists and is to be excavated for mining operations, remove it separately and the top soil so removed shall be utilized for restoration or rehabilitation of the land, which is no longer required for mine operations or for stabilizing or landscaping the external dumps. Whenever the top soil cannot be utilized concurrently, it shall be stored separately for future use. Prior concurrence of Regulatory Authority must be taken for this activity.
- ii. **Overburden:** The proponent of mine shall take steps so that the overburden, waste rock, rejects and fines generated during mining operations shall be stored in separate dumps preferably on impervious grounds. The waste rock, overburden etc. shall be backfilled into the mine excavations so as to restore the land to its original use as far as possible. In the case of non feasibility of back filling, the waste dump shall be suitably terraced and stabilizes through the vegetation. The proponent shall maintain proper angle of repose to ensure stability to the dump. Prior concurrence of Regulatory Authority must be taken for this activity.
- iii. The proponent of the mine shall construct required number of retaining walls to provide stability to the dumps. Dimensions of the retaining walls shall be based on the rainfall data. Prior concurrence of Regulatory Authority must be taken for this activity.
- iv. The proponent of mines shall construct required number of garland

drains to arrest mineral particles being carried away as runoff during rainy seasons around the dump yards. Dimensions of the garland rains shall be based on rainfall data. Prior concurrence of Regulatory Authority must be taken for this activity.

- v. The proponent of the mine shall undertake phased restoration, reclamation and rehabilitation of the lands affected by the mining operations and shall complete this work before the conclusion of such operations and the abandonment of the mine. This activity shall be taken up under the guidance of Appropriate Regulatory Authority, by the proponent, to ensure that environment is protected.
- vi. The proponent will be squarely responsible for proper implementation of solid waste management plan, prevention of air pollution, water pollution, and any other kind of pollution/health hazard.

Part C. General Conditions:

- i. **This order is valid for a period of 3 years or upto the expiry date of mine lease or land lease period issued by the Government of A.P., whichever is earlier.**
- ii. While giving CTE/CTO, the APPCB is to ensure compliance of guidelines issued in G.O RT No 239 dt 15.04.2020 and Memo. No/covid-19/2020/HMFW dt 18.04.2020 issued by Medical, Health and Family welfare department, Government of AP and the Ministry of Home Affairs order No 40-3/2020/DM-DA dt 15.04.2020 scrupulously.
- iii. The proponent shall scrupulously follow any conditions stipulated by Revenue department/ Panchayat Raj/ Municipal administration/local self-government bodies (Gram panchayat/Gram secretariat) in ensuring safety to human and animal life. The APPCB to ensure the same while according CTE/CTO.
- iv. Proponent shall ensure that there is no disturbance to flora and fauna. Serenity of nature must be protected at any cost.
- v. In respect of government land for mining, the responsibility has been fixed on concerned, AD Mines & Geology Department to check whether necessary clearances from revenue department are obtained.

- vi. In case of patta land while granting mine lease ADMG should verify the land lease documents.
- vii. In respect of forest land given in lease for mining, the proponent shall scrupulously adhere to the mining conditions stipulated by the forest department, Government of Andhra Pradesh.
- viii. Any change in mining plan/ production/ mining methodology the proponent shall apply afresh EC.
- ix. While taking up mining activity the proponent shall meticulously follow approved mining plan/Form-1/EMP.
- x. Once in a year proponent shall conduct impact analysis on environment by reputed institute recognized by Director General, Mines and Safety.
- xi. "Consent to Establish" & "Consent to Operate" shall be obtained from Andhra Pradesh Pollution Control Board under Air and Water Act and effectively comply with all the conditions stipulated thereof.
- xii. No change in mining technology and scope of working should be made without prior approval of the SEIAA, A.P. No further expansion or modifications in the mine shall be carried out without prior approval of the SEIAA, AP/ MoE&F, Govt, New Delhi, as applicable.
- xiii. Personnel working in dusty areas shall be provided by the proponent with protective respiratory devices and they should wear, and they should also be provided with adequate training and information on safety and health aspects. Prior instructions and guidance of Regulatory authority shall be taken for this activity.
- xiv. The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Necessary safeguard measures to protect the first order streams, if any, originating from the mine lease shall be taken.
- xv. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Prior instructions and guidance of Regulatory authority shall be taken for this activity.
- xvi. A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive,

who will report directly to the Head of the Organization.

- xvii. The funds earmarked for environmental protection measures (**Capital cost Rs. 4.18 Lakhs and recurring cost Rs. 4.97 Lakhs/annum**) should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Sub-Office located at Vijayawada.
- xviii. At least 2% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item-wise details along with time bound action plan shall be prepared in accordance to the MoEF&CC's office Memorandum No.F.No.22-65/2017-IA.III, dated.01.05.2018 and submit to the SEIAA, A.P and Ministry's Sub-Office, Vijayawada.
- xix. Officials from the Sub-Office of MoEF&CC, Vijayawada / The SEIAA, Andhra Pradesh through the Andhra Pradesh Pollution Control Board, who would be monitoring the implementation of environmental safeguards should be given full co-operation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents shall be submitted to the CCF, Sub-Office to MoEF&CC, Vijayawada.
- xx. The project proponent shall submit Half-yearly reports on the status of compliance of the stipulated Environmental Clearance Conditions including results of monitored data to the Ministry of Environment & Forests, its Sub-Office, Vijayawada, SEIAA, A.P., Zonal Office of Central Pollution Control Board, Bangalore, and A.P. Pollution Control Board and also shall upload in the PARIVESH portal.
- xxi. Post Environment Clearance Monitoring: It shall be mandatory for the project manager to submit half yearly compliance reports in respect of the stipulated prior EC terms and conditions in hard and soft copy to SEIAA on 1st June and 1st December of each calendar year. (Refer 10(i) and 10(ii) of S.O. 1533(E) of Ministry of Environment and Forests Notification, New Delhi, dt 14th September, 2006.)
- xxii. The APPCB shall monitor the EC conditions stipulated by SEIAA as per GO MS No 120 dated 01.11.2018 of EFS&T Dept., and ensure the compliance.
- xxiii. The proponent shall obtain prior permissions and continued

guidance from regulatory authorities for all the above conditions wherever it is required.

- xxiv. All safety norms as stipulated in various laws and statutes shall be scrupulously followed by the proponent. PCB shall ensure compliance to the conditions stipulated by SEIAA.
- xxv. The Proponent shall follow G.O.Ms.No.107 dated 30.07.2016 of Industries & Commerce (Mines-II) Department wherever applicable.
- xxvi. "Consent to Establish" shall be obtained from Andhra Pradesh Pollution Control Board under Air and Water Act before the start of any activity /construction work at site.
- xxvii. The project proponent shall submit the copies of the environmental clearance 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.
- xxviii. The environmental statement for each financial year ending 31st March in Form-V as mandated is to be submitted by the project proponent to the A.P. 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 environmental clearance conditions and shall also be sent to the Sub-office of the Ministry of Environment and Forests, Vijayawada by e-mail.
- xxix. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and SEIAA, A.P.
- xxx. The proponent shall obtain all other mandatory clearances from respective departments before taking-up the mining activity.
- xxxi. Any appeal against this Environmental Clearance 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.
- xxxii. Concealing the factual data 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.

- xxxiii. The SEIAA may revoke or suspend the order, if implementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
- xxxiv. SEIAA also reserves the right to cancel the EC issued at anytime, if EC has been obtained by the proponent through suppression of any information or furnishing false information.
- xxxv. The above conditions will 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 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.

Additional Conditions:-

I. Statutory Compliance:

1. The Environmental clearance shall be subject to orders of the Hon'ble Supreme Court of India, Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project.
2. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
3. The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
4. Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.
5. Permission of power supply to be taken from the concerned authority for meeting power demand of the project site.
6. The maximum production or peak production at any given time shall not exceed the limit as prescribed in the EC.

II. Air Quality Monitoring And Mitigation Measure:

7. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO₂ and NO_x. Location of the stations shall be

decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Online ambient air quality monitoring station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the SPCB.

8. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centers.
9. Adequate number of Fog canon (mist sprayer) shall be installed to reduce the impact of air pollution at dust generating sources with time bound action plan.
10. Post environmental closure third party monitoring by reputed institution in air quality, water, land & soil etc shall be carried out and analyzed with EMP measures at regular interval. A suitable recommendation in this regard, shall be furnished to IRO, MoEF&CC for compliance. The data used for analysis shall be obtained from continuous AQMS, site specific water regime. Also third party shall analyses the implementation of river diversion, meeting to the requirement of project report.

III. Water Quality Monitoring And Mitigation Measures:

11. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
12. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
13. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
14. Monitoring of water quality upstream and downstream of river including ponds, lakes, tanks shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.

15. Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.

IV. Noise And Vibration Monitoring And Prevention

16. Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness program for users to be conducted. Progress in usage of such accessories to be monitored.
17. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

V. Mining Plan

18. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
19. No change in mining method i.e. UG to OC, calendar program and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).
20. Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by relevant mining laws and relevant circulars issued by Directorate General Mines Safety (DGMS).
21. No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.
22. Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

VI. Land Reclamation:

23. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).

24. A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
25. Thorough inspection of the mine lease area for any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.
26. Native tree species shall be selected and planted over areas affected by subsidence.

VII. Public Hearing And Human Health Issues:

27. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored.
28. The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from work force engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.
29. Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
30. Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.
31. Effective arrangement shall be made to provide and maintain at suitable points conveniently situated, a sufficient supply of drinking water for all the persons employed.
32. If public hearing is conducted, implementation of the time bound action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the time bound action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
33. The project proponent shall follow the mitigation measures provided in this Ministry's OMNo.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to

the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area.

34. PP to conduct need based assessment survey of the area to for in order to decide the activities to be carried under the CSR and to provide detail of the activity carried out with adequate budgetary provision and time bound action plan.
35. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone with time bound action plan.
36. PP to take measure for installation of Renewable Energy sources in nearby area falling within 10 km radius.

VIII. Corporate Environment Responsibility:

37. The company shall have a well laid down environmental policy duly approve 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.
38. 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.
39. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
40. PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). Any non-compliance or infringement should be reported to the concerned authority.

IX. Miscellaneous:

41. 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.

42. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
43. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
44. 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.
45. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
46. 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.
47. Compensation of the land acquired for the project shall be settled as per the R&R Policy. Adequate facility of drinking water, plantation and other social amenities should be provided to established R&R villages.
48. Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.
49. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.

SPECIAL SECRETARY TO GOVT

**MEMBER SECRETARY,
SEIAA, A.P.**

**MEMBER,
SEIAA, A.P.**

**CHAIRMAN,
SEIAA, A.P.**

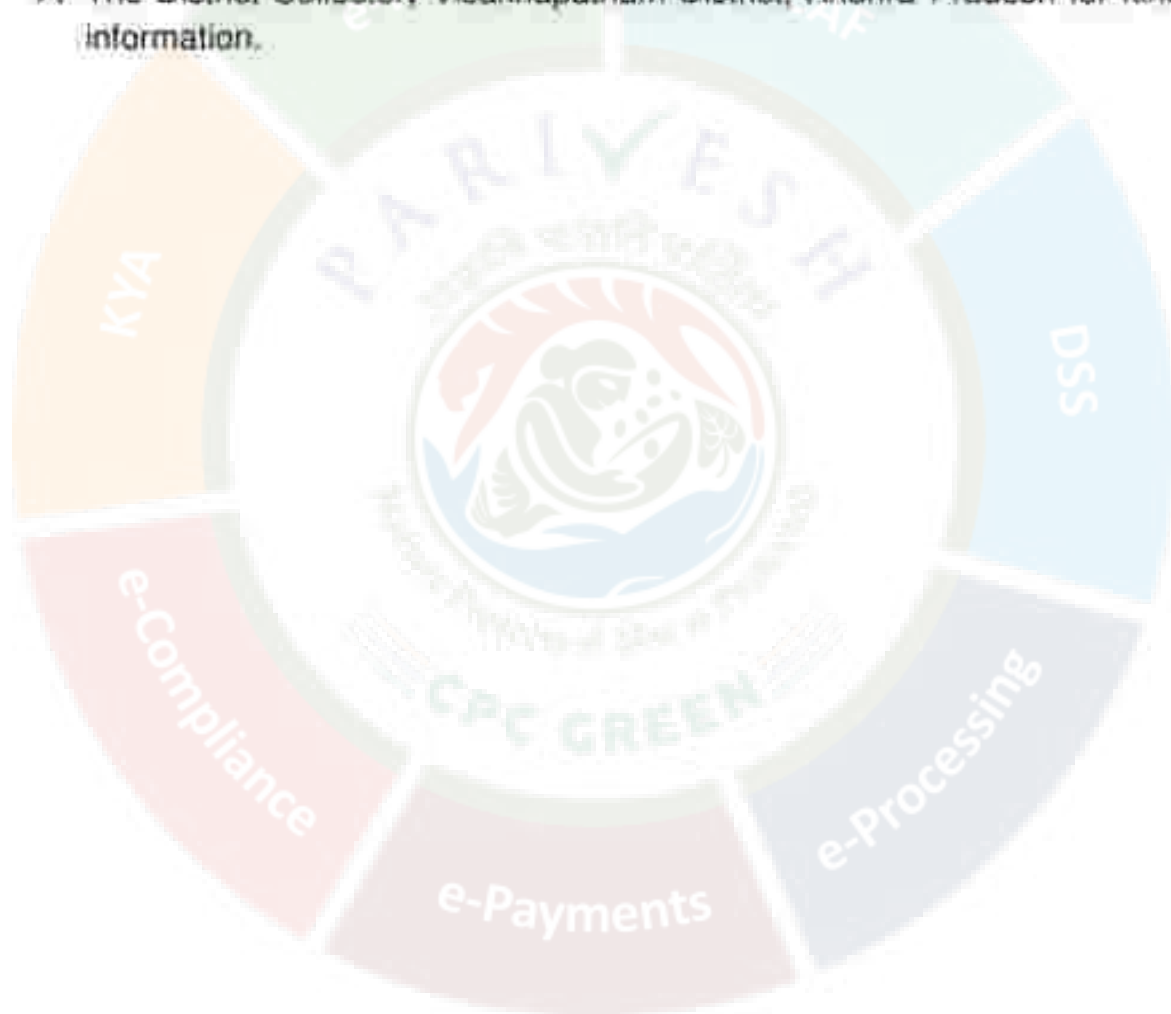
To

M/s. Adani Gangavaram Port Limited,
Associate Vice President Head Environment: Anil Kumar Trivedi,
Pedagantyada Village & Mandal,

Gangavaram Post, Visakhapatnam,
Andhra Pradesh - 530044.

Copy to:

1. The Chairman, SEAC, A.P. for kind information.
2. The Member Secretary, APPCB for kind information.
3. The EE, RO: Visakhapatnam, APPCB for information.
4. The MoEF&CC, GoI, Sub – Office, Vijayawada for kind information.
5. The Secretary, MoEF&CC, GoI New Delhi for kind information.
6. Monitoring cell, MoEF&CC, GoI, New Delhi for kind information.
7. The District Collector, Visakhapatnam District, Andhra Pradesh for kind information.



Signature Not Verified

Digitally Signed by : S Sri Saravanan
Member Secretary, SEIAA

Date: 02/09/2025

Annexure-2
**(Compliance of Environmental Clearance Expansion
Order)**

ADANI GANGAVARAM PORT LIMITED
COMPLIANCE FOR ENVIRONMENTAL CLEARANCE EXPANSION ORDER
ORDER NO. SEIAA/AP/MIN/EC/VS/04/2025/1340/269.45&269.21, Date: 02.09.2025.
FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

PART A. Special Conditions:

S.No.	CONDITION	COMPLIANCE
i.	The proposal shall not violate the provisions of the following Acts & Rules and subsequent amendments: a. Forest Conservation Act 1980, b. Wild life (Protection) Act,1972; c. CRZ Notification, 2011; d. The Eco sensitive areas as notified under Environment (Protection) Act,1986; e. Critically polluted areas as notified by CPCB and also shall not harm live stocks and human beings and disturb their activities.	The project is not attracting the forest, wild life act, CRZ notification and eco sensitive areas etc.,
ii.	The total production during a scheme should be limited to the approved quantity as per Mining scheme/plan.	We will carry out the mining activity with approved quantity as per mining plan.
iii.	The project proponent shall allocate Rs. 4.18 Lakhs as capital cost and Rs.4.97 Lakhs as a recurring cost budget for the EMP. The proponent volunteered to provide 2 lakhs as a part of Corporate Social Responsibility (CSR) activity and shall maintain till the life of the mine.	Noted.
iv.	The proponent shall comply with the proposals furnished in the Environmental management plan.	We will comply with all the proposals furnished in the Environmental management plan.
v.	The project proponent shall develop greenbelt along approach roads & village Roads.	We will develop greenbelt along approach roads and village roads. Greenbelt photographs are attached as annexure.
vi.	The project proponent shall maintain 7.5 mt greenbelt in buffer zone and existing buffer zone plantation should not be disturbed.	We will maintain 7.5 mt greenbelt in buffer zone and also we will not disturb the existing buffer zone plantation.
vii.	The proponent shall take dust suppression measures to meet the CPCB stipulated ambient air quality standards at any point of time.	We will take dust suppression measures for control of fugitive emissions.
viii.	The proponent shall carryout suppression of dust generated due to transport vehicles by continuous water spraying using tankers.	Water sprinklers will be provided for dust suppression.
ix.	The vehicles carrying the mines material shall be covered with tarpaulin during vehicular movement.	We will cover the vehicles with tarpaulin during vehicular movement.
x.	The project proponent shall not use village road/canal bund roads for mineral transportation purpose.	We will not using village road for mineral transportation purpose.

xi.	The project proponent shall restrict vehicles movement during the peak hours to avoid accidents.	We will restrict vehicles movement during the peak hours to avoid accidents.
xii.	The project proponent shall restrict the load of the transport vehicles not more than 21 tons to avoid road damages and dust nuisance to surroundings.	The transport vehicles load will not be more than 21 tons.
xiii.	The Project Proponent (PP) shall regularly upload the half-yearly compliance reports.	Now, we are submitting EC half yearly compliance to the Integrated Regional Office (IRO), MoEF&CC, Vijayawada for the period of 01st October 2025 to 31st March 2026 through online in PARIVESH portal.
xiv.	The PP shall complete the entire greenbelt development within the first year itself and ensure its maintenance throughout the lease period.	We will develop and maintain entire greenbelt throughout the lease period.
xv.	The project proponent shall follow the order of National Green Tribunal passed in O.A.No. 304/2019.	We will follow as per your directions.
xvi.	The project proponent shall maintain the setback distance 7.5 meters buffer zone all around the mine lease area for greenbelt development and other conditions are to be fulfilled.	We will maintain a setback distance of 7.5 meters buffer zone all around the mine for green belt development.
xvii.	The avenue plantation with tall plants of at least 1.5m height for 1 km length of the approach road on either side of the road is to be developed and maintained. Entire greenbelt should be developed in the first year itself.	We will develop avenue plantation along the approach road on either side of the road.
xviii.	The proponent is advised to ensure safety to animal and public life.	We will not cause any harm to animal and public life.

Part B. Specific Conditions:

S.No.	CONDITION	COMPLIANCE
1. <u>Air Pollution:-</u>		
i.	a. Suitable mining methods shall be adopted to control dust emissions, as per approved mining plan and EMP/EIA. b. The proponent shall comply with the mining methodology mentioned in approved mining plan and Form1.	a. We will adopt suitable mining methods for dust suppression. b. We will comply with the mining methodology as per approved mining plan.
ii.	Greenbelt shall be developed along the boundary of mining lease area and also in back filled and reclaimed areas with tall growing native species in consultation with the local DFO/Agriculture Department. The proponent of mine shall carry mining operations in such a manner so as to cause least damage to the flora of the mining area and nearby areas. He shall take immediate measures for planting in the same area or any other area selected by authorities not less than twice the number of trees going to be felled by mining operations. He shall also take measures for restoration of other	We will develop green belt along the boundary of mining lease area and also in back filled and reclaimed areas with tall growing trees as directed.

	flora /fauna if damaged by mining operations. In case any felling or damage to fauna and flora is involved, prior permission shall be taken from the concerned regulatory authority, by the proponent, without which mining shall not be taken up.	
iii.	Effective safe guard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Prior concurrence of regulatory Authority must be obtained by the proponent.	We will carry out sprinkling of water manually to control air pollution at haul roads, loading and unloading point and transfer points. Ambient air quality monitoring will be carried out by MoEF authorised third party agency.
iv.	The proponent of mine shall carry air quality monitoring in the core zone as well as buffer zone for RSPM and Noise levels. Location of monitoring stations should be decided based on the metrological data topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with Andhra Pradesh Pollution Control Board. The data so recorded should be regularly submitted to the Ministry including its Regional office located at Chennai and the Andhra Pradesh Pollution Control Board/Central Pollution Control Board once in six months. Prior concurrence of regulatory Authority must be obtained by the proponent.	We will engage third party for ambient air quality monitoring in core zone as well as buffer zone.
v.	The proponent shall construct graded roads connecting the mining area to the nearby roads to avoid dust nuisance due to vehicular movements. Prior concurrence of regulatory Authority must be obtained by the proponent.	We have constructed graded roads connecting the mining area to the nearby roads to avoid dust nuisance due to vehicular movements.
vi.	The proponent shall take precautions against noise arising out of mining operations and shall be abated or controlled at the source so as to keep it within the permissible limits notified under Environmental (Protection) Act, 1986 / Noise Pollution(Regulations & Control) Rules, 2010 by implementing the following noise control measures. • Proper and regular maintenance of vehicles and other equipment. • The proponent shall ensure that there shall be no excessive noise, while taking up mining activity.	We are taking necessary measures to control the noise nuisance and dust nuisance in the mine area. • Vehicles maintenance. • Workers are less exposed to the mining activity. • Personnel protective equipments are provided to the workers working in the mine. • Speed of the vehicles is limited to 25 kmph as directed.

	- The workers employed shall be provided with protection equipment and earmuffs etc. - Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.	
vii.	Whenever any damage to public buildings or monuments is apprehended due to their proximity to the mining lease area, scientific investigations shall be carried out by the holder of mining lease so as to keep the ground vibrations caused by blasting operations within safe limit. In such cases, Prior concurrence of concerned Regulatory Authority must be obtained by the proponent, without which, mining shall not be taken up.	We will not cause any damage to the public building or monuments. Controlled blasting will be carried out to reduce the ground vibrations.
viii.	The proponent shall not take-up mining activity unless he obtains the safety clearance certificate from the Govt.competent authority.	We have obtained Mining Plan and Grant order from GoAP, Department of Mines and Geology, Visakhapatnam and Consent for Establishment (CFE) Expansion order from AP Pollution Control Board, Zonal Office, Visakhapatnam. CFE Expansion Order No. 12132/APPCB/ZO-VSP/VSP/CTE/2026, Date: 31.12.2025. CFE Expansion order attached as annexure.

2) Water Pollution:-

i.	As per records the source of water is from nearby village ponds. Total water requirement is 4.0 KLD. Out of that, 1.5 KLD is used for Dust Suppression; 1.0 KLD is used for Domestic purpose; 1.5 KLD is used for Green belt purpose.	The source of water will be obtained through water tankers from nearby village. We will not use more than the stipulated quantities of water for the mining activity.
ii.	Garland drain and Siltation ponds of appropriate size should be constructed for the working pit to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly delisted, particularly after monsoon, and maintained properly. Prior concurrence of Regulatory Authority concerned shall be taken for this activity before taking up mining.	We have constructed garland drain and siltation ponds to arrest flow of silt and sediment. We are following as per your direction regarding water utilization. Garland Drain photographs are attached as annexure.
iii.	The proponent of the mine shall take all possible precautions to prevent or reduce the discharge of toxic and objectionable liquid effluents from mine, workshop, tailing ponds into surface bodies, ground water aquifer and useable lands	There will be no effluent generated from the proposed mining. The domestic effluents generated are disposing through septic tank followed by soak pit.

	to a minimum. The effluents shall be suitably treated, if required, to conform to the general standards notified under Environmental (Protection) Act, 1986. Prior concurrence of Regulatory Authority concerned shall be taken for this activity before taking up mining.	
iv.	Monitoring of ground water level and quality should be carried out quarterly by the project proponent in and around the project area in consultation with State Ground Water Department/Central Ground Water Authority and data thus collected shall be submitted regularly to the MoEF and its Regional Office Vijayawada, CGWA, and the Regional Director, Central Ground Water Board, Hyderabad. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary correction measures shall be carried out in consultation with concerned Regulatory Authority.	Monitoring for the ground water depth will be carried out by Govt. of AP Ground Water Department and monitoring data available in online which we are observing periodically. The board regularly publishes scientific reports based on the data generated through various investigations.
v.	Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB, Southern Region, Hyderabad. Suitable measures should be taken for rainwater harvesting in consultation with concerned Regulatory Authority.	Necessary measures will be taken for rainwater harvesting.
vi.	Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.	The source of water will be obtained from water tankers.
3) Solid Waste :-		
i.	Topsoil: Wherever top soil exists and is to be excavated for mining operations, remove it separately and the top soil so removed shall be utilized for restoration or rehabilitation of the land, which is no longer required for mine operations or for stabilizing or landscaping the external dumps. Whenever the top soil cannot be utilized concurrently, it shall be stored separately for future use. Prior concurrence of Regulatory Authority must be taken for this activity.	Noted.

ii.	Overburden: The proponent of mine shall take steps so that the overburden, waste rock, rejects and fines generated during mining operations shall be stored in separate dumps preferably on impervious grounds. The waste rock, overburden etc. shall be backfilled into the mine excavations so as to restore the land to its original use as far as possible. In the case of non-feasibility of back filling, the waste dump shall be suitably terraced and stabilizes through the vegetation. The proponent shall maintain proper angle of repose to ensure stability to the dump. Prior concurrence of Regulatory Authority must be taken for this activity.	Over burden generated will be used for laying roads and building construction. Waste rocks are sometimes stores in the mine area for backfilling during closure of the mine.
iii.	The proponent of the mine shall construct required number of retaining walls to provide stability to the dumps. Dimensions of the retaining walls shall be based on the rainfall data. Prior concurrence of Regulatory Authority must be taken for this activity.	We have constructed retaining walls to provide stability to the dumps in the mine activity. Retaining wall photographs are attached as annexure.
iv.	The proponent of mines shall construct required number of garland drains to arrest mineral particles being carried away as runoff during rainy seasons around the dump yards. Dimensions of the garland rains shall be based on rainfall data. Prior concurrence of Regulatory Authority must be taken for this activity.	To arrest flow of silt and sediment to nearby water bodies, garland drain and siltation ponds have constructed around the mine area.
v.	The proponent of the mine shall undertake phased restoration, reclamation and rehabilitation of the lands affected by the mining operations and shall complete this work before the conclusion of such operations and the abandonment of the mine. This activity shall be taken up under the guidance of Appropriate Regulatory Authority, by the proponent, to ensure that environment is protected.	There is no human settlement in the area and nearby to the lease area, hence no Rehabilitation and Resettlement (R & R) plan. So after mining activity the area will be used for rain water harvesting or green belt development.
vi.	The proponent will be squarely responsible for proper implementation of solid waste management plan, prevention of air pollution, water pollution, and any other kind of pollution/health hazard.	We will obeying to all rules as directed by the board.

Part C. General Conditions:

S.No.	CONDITION	COMPLIANCE
i.	This order is valid for a period of 3 years or upto the expiry date of mine lease or land lease period issued by the Government of A.P., whichever is earlier.	Noted.
ii.	While giving CTE/CTO, the APPCB is to ensure compliance of guidelines issued in G.O RT No	We will follow the guidelines issued in G.O RT No 239 dt 16.04.2020 and Memo. No/

	239 dt 16.04.2020 and Memo. No/ covid-19/2020/HMFW dt 18.04.2020 issued by Medical, Health and Family welfare department, Government of AP and the Ministry of Home Affairs order No 40-3/2020/DM-DA dt 15.04.2020 scrupulously.	covid-19/2020/HMFW dt 18.04.2020 issued by Medical, Health and Family welfare department, Government of AP and the Ministry of Home Affairs order No 40-3/2020/DM-DA dt 15.04.2020.
iii.	The proponent shall scrupulously follow any conditions stipulated by Revenue department/ Panchayat Raj/ Municipal administration/local self-government bodies (Gram panchayat/Gram secretariat) in ensuring safety to human and animal life. The APPCB to ensure the same while according CTE/CTO.	We will follow as per the directions of the board.
iv.	Proponent shall ensure that there is no disturbance to flora and fauna. Serenity of nature must be protected at any cost.	We will ensure that there is no disturbance to flora and fauna. Serenity of nature will be protected at any cost.
v.	In respect of government land for mining, the responsibility fixed on AD Mines & Geology Department to check whether necessary clearances from revenue department are obtained.	Noted.
vi.	In case of patta land while granting mine lease ADMG should verify the land lease documents.	Noted.
vii.	In respect of forest land given in lease for mining, the proponent shall scrupulously adhere to the mining conditions stipulated by the forest department, Government of Andhra Pradesh.	We will follow rules and regulations.
viii.	Any change in mining plan/ production/ mining methodology the proponent shall apply afresh EC.	We will intimate to the board if any changes in the mining activities.
ix.	While taking up mining activity the proponent shall meticulously follow approved mining plan/Form-1/EMP.	We will carry out mining activity with respect to the approved mining plan.
x.	Once in a year proponent shall conduct impact analysis on environment by reputed institute recognized by Director General, Mines and Safety.	Noted & Agreed.
xi.	“Consent to Establishment” & “Consent to Operate” shall be obtained from Andhra Pradesh Pollution Control Board under Air and Water Act and effectively comply with all the conditions stipulated thereof.	We have already obtained Consent for Establishment (Expansion) Order from AP Pollution Control Board, Zonal Office, Visakhapatnam under Section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of Air (Prevention and Control of Pollution) Act, 1981. CFE (Expansion) Order No. 12132/APPCB/ZO-VSP/VSP/CTE/2026, Date: 31.12.2025. And we have applied for Consent for Operation (Expansion) Order from AP Pollution Control Board, Zonal Office, Visakhapatnam under Section 25 of Water

		(Prevention and Control of Pollution) Act, 1974 and under Section 21 of Air (Prevention and Control of Pollution) Act, 1981. Online Application No. 5014112, Dated: 25.03.2026.
xii.	No change in mining technology and scope of working should be made without prior approval of the SEIAA, A.P. No further expansion or modifications in the mine shall be carried out without prior approval of the SEIAA, AP/ MoEF, GoI, New Delhi, as applicable.	After getting the prior approval from the Board authorities only, we will take up change in the process technology and scope of working if any.
xiii.	Personnel working in dusty areas shall be provided by the proponent with protective respiratory devices and they should wear, and they should also be provided with adequate training and information on safety and health aspects. Prior instructions and guidance of Regulatory authority shall be taken for this activity.	We are providing Personal Protective Equipments to persons working in dusty areas (Helmets, Nose Masks, Ear Muffs, Ear Plugs & Safety Shoes) with training and information on safety and health aspects also provided.
xiv.	The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Necessary safeguard measures to protect the first order streams, if any, originating from the mine lease shall be taken.	No spring channels exist in and around the mine area.
xv.	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Prior instructions and guidance of Regulatory authority shall be taken for this activity.	We will conduct occupational health surveillance campaigns for the workers.
xvi.	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Mines manager will handle environmental related issues and report to the head of the organization.
xvii.	The funds earmarked for environmental protection measures (Capital cost Rs. 4.18 Lakhs and Recurring cost Rs. 4.97 Lakhs/annum) should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Vijayawada.	We will utilize earmarked funds for Environmental protection and for implementing systems in separate account and also year wise expenditure will be reported to the Ministry and its Regional Office.
xviii.	At least 2% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item-wise details along with time bound action plan shall be prepared in accordance to the MoEF&CC's office Memorandum No.F.No.22-65/2017-IA.III, dated.01.05.2018 and submit to the SEIAA, A.P and Ministry's Sub-Office, Vijayawada.	We will allocate funds from the project cost for CER and prepare item wise time bound action. The same will be submitted to SEIAA AP and Ministry Regional office.

xix.	Officials from the Sub-Office of MoEF&CC, Vijayawada / The SEIAA, Andhra Pradesh through the Andhra Pradesh Pollution Control Board, who would be monitoring the implementation of environmental safeguards should be given full co-operation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents shall be submitted to the CCF, Sub-Office to MoEF&CC, Vijayawada.	Noted.
xx.	The project proponent shall submit Half-yearly reports on the status of compliance of the stipulated Environmental Clearance Conditions including results of monitored data to the Ministry of Environment & Forests, its Sub-Office, Vijayawada, SEIAA, A.P., Zonal Office of Central Pollution Control Board, Bangalore, and A.P. Pollution Control Board and also shall upload in the PARIVESH portal.	We are regularly submitting EC half yearly compliance to the Ministry of Environment & Forests, its Sub-Office, Vijayawada, SEIAA, A.P., Zonal Office of Central Pollution Control Board, Bangalore, and A.P. Pollution Control Board. Now, we are submitting EC half yearly report to the Integral Regional Office (IRO), MoEF&CC, Vijayawada for the period of 01st October 2025 to 31st March 2026 through online in PARIVESH portal.
xxi.	Post Environment Clearance Monitoring: It shall be mandatory for the project manager to submit half yearly compliance reports in respect of the stipulated prior EC terms and conditions in hard and soft copy to SEIAA on 1st June and 1st December of each calendar year. (Refer 10(i) and 10(ii) of S.O. 1533(E) of Ministry of Environment and Forests Notification, New Delhi, dt 14 th September, 2006.)	We will submit half yearly compliance reports in respect of the stipulated prior EC terms and conditions in hard and soft copy to SEIAA on 1st June and 1st December of each calendar year. (Refer 10(i) and 10(ii) of S.O. 1533(E) of Ministry of Environment and Forests Notification, New Delhi, dt 14 th September, 2006.)
xxii.	The APPCB shall monitor the EC conditions stipulated by SEIAA as per G.O MS No 120 dated 01.11.2018 of EFS&T Dept., and ensure the compliance.	We will comply with these conditions.
xxiii.	The proponent shall obtain prior permissions and continued guidance from regulatory authorities for all the above conditions wherever it is required.	We will obtain prior permissions and continued guidance from regulatory authorities for all the above conditions wherever it is required.
xxiv.	All safety norms as stipulated in various laws and statutes shall be scrupulously followed by the proponent. PCB shall ensure compliance to the conditions stipulated by SEIAA.	Noted.
xxv.	The Proponent shall follow G.O. Ms.No.107 dated 30.07.2016 of Industries & Commerce (Mines-II) Department wherever applicable.	We will follow as per G.O. Ms.No.107 dated 30.07.2016 of Industries & Commerce (Mines-II) Department
xxvi.	“Consent for Establish” shall be obtained from Andhra Pradesh Pollution Control Board under Air and Water Act before the start of any activity /construction work at site.	We have obtained Consent for Establishment (Expansion) Order from AP Pollution Control Board, Zonal Office, Visakhapatnam under Section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under

		Section 21 of Air (Prevention and Control of Pollution) Act, 1981.
xxvii.	The project proponent shall submit the copies of the environmental clearance 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.	We will submit the Environmental Clearance copy to Heads of local bodies, Panchayats and Municipal bodies in addition to the relevant offices of the Government.
xxviii.	The environmental statement for each financial year ending 31st March in Form-V as mandated is to be submitted by the project proponent to the A.P. 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 environmental clearance conditions and shall also be sent to the Sub-office of the Ministry of Environment and Forests, Vijayawada by e-mail.	We will submit environmental statement for each financial year ending 31 st March in Form-V as mandated is to be submitted to the A.P. Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently.
xxix.	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and SEIAA, A.P.	Complied.
xxx.	The proponent shall obtain all other mandatory clearances from respective departments before taking-up the mining activity.	We have obtained Mining Plan and Grant order from GoAP, Department of Mines and Geology, Visakhapatnam and Consent for Establishment (CFE) Expansion order from AP Pollution Control Board, Zonal Office, Visakhapatnam.
xxxi.	Any appeal against this Environmental Clearance 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.	Noted.
xxxii.	Concealing the factual data 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.	We will strictly follow the rules and regulations stipulated from board authorities.
xxxiii.	The SEIAA may revoke or suspend the order, if implementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	We will obey to the board conditions in the interest of environment protection.
xxxiv.	SEIAA also reserves the right to cancel the EC issued at any time, if EC has been obtained by the	Noted & Agreed.

	proponent through suppression of any information or furnishing false information.	
xxxv.	The above conditions will 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 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted.

Additional Conditions:

S.No.	CONDITION	COMPLIANCE
<u>I. Statutory Compliance:</u>		
1.	The Environmental clearance shall be subject to orders of the Hon'ble Supreme Court of India, Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project.	Noted.
2.	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board / Committee.	We have already obtained Consent for Establishment (Expansion) Order from AP Pollution Control Board, Zonal Office, Visakhapatnam under Section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of Air (Prevention and Control of Pollution) Act, 1981. CFE (Expansion) Order No. 12132/APPCB/ZO-VSP/VSP/CTE/2026, Date: 31.12.2025. And we have applied for Consent for Operation (Expansion) Order from AP Pollution Control Board, Zonal Office, Visakhapatnam under Section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of Air (Prevention and Control of Pollution) Act, 1981. Online Application No. 5014112, Dated: 25.03.2026.
3.	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	We have obtained an agreement for water supply from M/s. Visakhapatnam Industrial Water Supply Company Limited.
4.	Solid/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules,2016/Hazardous & Other Waste Management Rules,2016.	Noted.
5.	Permission of power supply to be taken from the concerned authority for meeting power demand of the project site.	We will take prior permission of power supply from the concerned authority for meeting power demand of the project site.
6.	The maximum production or peak production at any time shall not exceed the limit as prescribed in the EC.	We will follow as prescribed in the EC without exceeding the production limit.
<u>II. Air Quality Monitoring And Mitigation Measure:</u>		

7.	Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO ₂ and NO _x . Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Online ambient air quality monitoring station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the SPCB.	We have authorized third party agency for ambient air quality monitoring in core zone as well as buffer zone.
8.	Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.	We are carrying out sprinkling of water manually to control air pollution, and the vehicles engaged in mining and allied activities will be operated only after obtaining 'PUC' certificate from the authorized pollution testing centers.
9.	Adequate number of Fog canon (mist sprayer) shall be installed to reduce the impact of air pollution at dust generating sources with time bound action plan.	We are complying.
10.	Post environmental closure third party monitoring by reputed institutted in air quality, water, land & soil etc shall be carried out and analyzed with EMP measures at regular interval. A suitable recommendation in this regard, shall be furnished to IRO, MoEF&CC for compliance. The data used for analysis shall be obtained from continuous AQMS, site specific water regime. Also third party shall analyses the implementation of river diversion, meeting to the requirement of project report.	Ambient air quality monitoring is being carried out by MoEF&CC authorized third party agency.

III. Water Quality Monitoring And Mitigation Measures:

11.	The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act,1974 Coal Industry Standards vide GSR742 (E) dated 25 th September,2000 and as amended from time to time by the Central Pollution Control Board.	There is no effluent generated from the proposed mining. The domestic effluents generated is being disposed through septic tank followed by soak pit.
12.	The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27thMay, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	We will upload the monitored data on the company's website and will display at the project site at a suitable location.
13.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during	Monitoring of ground water depth will be carried out in and around the mine lease area and the data thus collected will be sent regularly to MoEF&CC/RO.

	the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.	
14.	Monitoring of water quality upstream and downstream of river including ponds, lakes, tanks shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.	Noted and we will follow.
15.	Ground water, excluding mine water, shall not be used for mining operations. Rainwater Harvesting shall be implemented for conservation and augmentation of ground water resources.	Necessary measures is being taken for rainwater harvesting for conservation and augmentation of ground water resources.
IV. Noise And Vibration Monitoring And Prevention:		
16.	Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness program for users to be conducted. Progress in usage of such accessories to be monitored.	Noted. PPE kits are provided for the workers with the prescribed norms and guidelines.
17.	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.	We are carrying out the noise level survey as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard will be submitted to the Ministry/RO on six-monthly basis.
V. Mining Plan:		
18.	Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.	We will follow mining strictly as prescribed.
19.	No change in mining method i.e. UG to OC, calendar program and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEF& CC).	We will obey with the board.
20.	Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by relevant mining laws and relevant circulars issued by Directorate General Mines Safety (DGMS).	We are carrying out mining activity with respect to the approved mining plan abiding by relevant mining laws and relevant circulars issued by Directorate General Mines Safety (DGMS).
21.	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also	Noted.

	adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.	
22.	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.	We will ensure the usage of renewable energy and reduce fuel consumption.
VI. <u>Land Reclamation:</u>		
23.	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).	We are complying.
24.	A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.	Mines manager will handle environmental related issues and report to the head of the organization.
25.	Thorough inspection of the mine lease area for any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.	Noted.
26.	Native tree species shall be selected and planted over areas affected by subsidence.	We have developed greenbelt along with native tree species available.
VII. <u>Public Hearing And Human Health Issues:</u>		
27.	Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored.	We will provide adequate illumination in all mine locations and be monitored.
28.	The project proponent shall undertake occupational health survey for initial and periodic medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from work force engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.	We will conduct occupational health surveillance campaigns for the workers.
29.	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	We have provided Personal Protective Equipments to persons working in dusty areas (Helmets, Nose Masks, Ear Muffs, Ear Plugs & Safety Shoes) with Training and information on safety and health aspects also provided.
30.	Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.	We will perform skill training and conducting drill to all workers including the outsourcing employees to ensure high safety

		standards in mines as per safety norms specified by DGMS.
31.	Effective arrangement shall be made to provide and maintain at suitable points conveniently situated, a sufficient supply of drinking water for all the persons employed.	We have provided and maintaining supply of drinking water at suitable points conveniently situated for all the persons employed.
32.	If public hearing is conducted, implementation of the time bound action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the time bound action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.	We will allocate funds from the project cost for CER and prepare item wise time bound action. The same will be submitted to SEIAA AP and Ministry Regional office.
33.	The project proponent shall follow the mitigation measures provided in this Ministry's OMNo.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled "Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area".	We will strictly follow the rules and regulations stipulated from board authorities.
34.	PP to conduct need based assessment survey of the area to for in order to decide the activities to be carried under the CSR and to provide detail of the activity carried out with adequate budgetary provision and time bound action plan.	We will conduct need based assessment survey of the area in order to decide the activities to be carried under the CSR and to provide detail of the activity carried out with adequate budgetary provision with time bound action plan.
35.	PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone with time bound action plan.	We will identifying the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone with time bound action plan.
36.	PP to take measure for installation of Renewable Energy sources in nearby area falling within 10 km radius.	Noted.

VIII. Corporate Environment Responsibility:

37.	The company shall have a well laid down environmental policy duly approve 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.	Noted.

38.	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.	We will obey to the board conditions in the interest of environment protection.
39.	Self-environmental audit shall be conducted annually. Every three months third party environmental audit shall be carried out.	We will conduct self-environmental audit annually.
40.	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). Any non-compliance or infringement should be reported to the concerned authority.	We will obey to the board conditions in the interest of environment protection.
IX. <u>Miscellaneous:</u>		
41.	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.	Now, we are submitting EC half yearly report to the Integral Regional Office (IRO), MoEF&CC, Vijayawada for the period of 01st October 2025 to 31st March 2026 through online in PARIVESH portal.
42.	The project authorities shall inform to the Regional Office of the MOEF&CC regarding commencement of mining operations.	We will inform to the Regional Office of the MOEF&CC regarding commencement of mining operations.
43.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Noted.
44.	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.	We will comply with the proposals furnished in the Environmental management plan and also with the commitments made during public hearing.
45.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	After getting the prior approval from the Board authorities only, we will take up change in the process technology and scope of working if any.
46.	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	Noted.

	passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.	
47.	Compensation of the land acquired for the project shall be settled as per the R&R Policy. Adequate facility of drinking water, plantation and other social amenities should be provided to established R&R villages.	We will obey and arrange adequate facility of drinking water, plantation and other social amenities to establish R&R villages.
48.	Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.	We are giving training to the youth around their on livelihood and skill development to make them employable with its proper records.
49.	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.	We will make sure to take certain measures not to disturb the surrounding habitation.

Annexure-3
(Consent for Establishment Expansion Order)



**ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL OFFICE :: VISAKHAPATNAM**

39-33-20/4/1, Madhavadhara Vuda Colony,
Visakhapatnam - 530018.



CONSENT TO ESTABLISH ORDER FOR EXPANSION

Order No.12132/APPCB/ZO-VSP/VSP/CTE/2026

Dt. 31-12-2025

Sub: APPCB – ZO – VSP – CTE – **2.024 Ha, Building Stone of M/s. Adani Gangavaram Port Limited, Old Sy.No.274 (New Sy.No.307), Pedgantyada (V&M), Visakhapatnam District** – Consent to Establish (CTE) (Expansion) of the Board under Section 25 of Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of Air (Prevention and Control of Pollution) Act, 1981 – **Order Issued – Reg.**

Ref:

1. E.C. Order No. SEIAA/AP/VSP/MIN/08/2020/2060/158.10&153.124-516, dated 29.07.2021.
2. CTE Order No. 8375/APPCB/ZO-VSP/VSP/CFE/2021, Dated: 12.11.2021.
3. CTO Order No: 8375/APPCB/ZO-VSP/VSP/CTO/2024, Date:26.02.2024.
4. EC Expansion Order No: SEIAA/AP/MIN/EC/VS/04/1340/269.45 & 269.21, Dated: 02.09.2025.
5. Mining unit's Consent To Establish (Expansion) Application received through APOCMMS vide application ID: 4525717 received on 29.09.2025 & 15.12.2025.
6. The EE, RO, Visakhapatnam forwarded the application along with inspection report to APPCB, Zonal Office, Visakhapatnam on 23.12.2025.
7. Consent Management (CTE) committee meeting held at APPCB, Zonal Office, Visakhapatnam on 23.12.2025.

* * *

- I. The Board vide ref. 3rd cited issued CTO order to 2.024 Ha, Building Stone of M/s. Adani Gangavaram Port Limited, Old Sy.No.274 (New Sy.No.307), Pedgantyada (V&M), Visakhapatnam District for mining of Rough Stone - 12,450 m³/annum over an extent of 2.024 Ha,. with validity upto 31.10.2028 duly stipulating conditions.
- II. The mining unit obtained Environmental Clearance for expansion from SEIAA vide EC vide ref.4th cited for Mining of Building Stone - 1,88,226 m³/annum.
- III. In the reference 5th cited, 2.024 Ha, Building Stone of M/s. Adani Gangavaram Port Limited, has submitted an application to the Board seeking **Consent to Establish (CTE)(Expansion)** to carryout semi mechanized open cast mining to excavate the following products with

installed capacities as mentioned below, with a proposed project cost of **Rs.67.0 Lakhs.**

S. No.	Name of the Mineral	Capacity as per EC dt. 29.07.2021 & CTO Order dt. 26.02.2024	Capacity as per EC Order dt. 02.09.2025 & CTE (Exp) applications	Capacity after expansion
1.	Mining of Rough Stone	12,450 m ³ /annum	---	---
2.	Mining of Building Stone	---	1,88,226 m ³ /annum	1,88,226 m ³ /annum

IV. As per the application, the above activity is to be located at Old Sy.No.274 (New Sy.No.307), Pedgantyada (V&M), Visakhapatnam District.

V. The co-ordinates of the mine as per EC are mentioned below :

S.No.	Latitude	Longitude
1	17°38'18.68817"N	83°14'16.94426"E
2	17°38'17.69710"N	83°14'18.33243"E
3	17°38'12.13051"N	83°14'13.48860"E
4	17°38'14.60034"N	83°14'9.86290"E

VI. The above site was inspected by the Asst. Environmental Engineer, APPCB, Regional Office, Visakhapatnam on 22.12.2025 and observed that the site is surrounded by:

East	:	Hillock	West	:	Grazing land
North	:	Hillock	South	:	Hillock

VII. The Board, after careful scrutiny of the application, verification report of Regional Office, Visakhapatnam and recommendations of the Consent Management (CTE) Committee, hereby issues **CONSENT TO ESTABLISH (CTE) (Expansion)** to your activity 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 carry out the activity mentioned at para (III) only.**

VIII. This Consent order issued is subject to the conditions mentioned in the schedule A&B.

IX. This order is issued from pollution control angle only. Zoning and other regulations are not considered.

- X. This order is valid for a period of 7 years or validity of mine lease period issued by the Government of A.P., or validity of EC order issued by SEIAA whichever is earlier.

S.SHANKAR NAIK
JOINT CHIEF ENVIRONMENTAL ENGINEER

Encl : Schedules "A & B".

To
2.024 Ha, Building Stone of M/s. Adani Gangavaram Port Limited,
Old Sy.No.274 (New Sy.No.307),
Pedgantyada (V&M),
Visakhapatnam District

Copy to EE, APPCB, Regional Office, Visakhapatnam for information and necessary action.

SCHEDULE – A

1. Progress on implementation of the project shall be reported to the concerned Regional Office, A.P. Pollution Control Board once in three months.
2. The proponent shall obtain Consent to Operate (CTO) from APPCB, as required under sec. 25/26 of the Water (P&C of P) Act, 1974 and under Sec.21 of the Air (P&C of P) Act, 1981 and Authorization under Hazardous and Other Wastes (Management, Handling & Transboundary Movement) Rules, 2016 before commencement of the activity, including trial production.
3. Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves its right and power under Sec.27 (2) of Water (Prevention & Control of Pollution) Act, 1974 and under Sec.21 (4) of Air (Prevention & Control of Pollution) Act, 1981 to review any or all the conditions imposed herein and to make such alternation as deemed fit and stipulate any additional conditions by the Board.
4. The Consent of the Board shall be exhibited in the premises at a conspicuous place for the information of the inspection officers of different departments.
5. The proponent shall display online data outside the main gate on quantity and nature of hazardous chemicals being used in the plant, water & air emissions and solid waste generated within the mine premises, as per Hon'ble Supreme Court order.
6. The Rules and Regulations notified by Ministry of Law and Justice, Government of India, regarding the Public Liability Insurance At, 1991 shall be followed.
7. If the proponent is aggrieved by this order made by A.P. Pollution Control Board under Sec. 25 of Water (Prevention & Control of Pollution) Act' 1974 and Sec. 21 of Air (Prevention & Control of Pollution) Act' 1981 he may within 30 days from the date on receipt of the order prefer an appeal before the Competent Authority.
8. The order is issued without prejudice to the rights and contentions of this Board in any court of law.

SCHEDULE – B

1.	The source of water is through Borewell and the maximum permitted water consumption shall not exceed the following quantities.			
	S. No.	Source	Quantity as per EC dt. 29.07.2021 & CTO order dt. 26.02.2024	Quantity as per EC Order Dt. 02.09.2025 & as per CTE (Exp) applications
	1.			

	Water sprinkling on haul Roads/Dust suppression	1.5 KLD	1.5 KLD
2.	Greenbelt Development	1.5 KLD	1.5 KLD
3.	Domestic	1.0 KLD	1.0 KLD
	Total	4.0 KLD	4.0 KLD

2. The maximum waste water generation (KLD) shall not exceed the following:

S. No.	Source	Quantity
1.	Domestic	0.3 KLD

Effluent Source	Standards to be complied	Mode of final disposal
Domestic	---	Septic tank.

3. The mine operator has to provide digital flow meters with totaliser facility to assess the water consumption to quantify the water used for various purposes and shall maintain log registers.

Air :

4. The mine operator shall comply with the following for controlling air pollution.

S.No.	Source	Capacity	Control Equipment
		--	

5. Provision for Ambient Air Quality Monitoring shall be provided and comply with National Ambient Air Quality Standards of **SO₂ – 80 µg/m³; NO_x – 80 µg/m³; PM_{2.5} - 60 µg/m³; PM₁₀ - 100 µg/m³ (24 hours average)** measured at periphery of the mine and for other parameters as applicable, as per CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009. The mine operator shall submit monthly reports to RO and ZO regularly.

* The Mine operator shall comply with noise standards as per MoEF Notification SO123 (E) dt.14.02.2020 as following:

Noise Levels: Day time: (6 AM to 10 PM) – 75 dB(A)

Night time: (10 PM to 6 AM) – 70 dB(A)

6. The proponent shall provide dust suppression measures like water spraying arrangements on haul roads, loading & unloading areas and material handing areas to avoid fugitive dust emissions.
7. The air pollution control equipment like water sprinklers shall be installed along with the commissioning of the activity.

- o. The proponent shall comply with the specific standards with respect to process emissions stipulated by the MoEF & CC, GoI, New Delhi from time to time.

S.No.	Details of process emissions	Emission control system	Emission standards

Solid Waste:

9. The Solid wastes generated shall not exceed the following breakup quantities:

S. No	Solid Waste generation	Quantity	Mode of Disposal

10. Dumping of overburden, if done, should use the retreating pyramid bench formation with concurrent, physical and biological reclamation. Dumps should be contoured and provided with relief control and stabilized. Dump tops should be compacted, leveled and be properly drained.

General Conditions :

11. **The proponent shall scrupulously comply with conditions stipulated by the SEIAA (AP), MoEF&CC, GoI in the Environmental Clearance order dated 29.07.2021 & EC (expansion) order 02.09.2025.**
12. **The mining shall be carried out as per the mine plan approved by Mines & Geology Department.**
13. **The proponent shall maintain minimum distance from habitation (200 mts when blasting is involved / 100 mts when blasting is not involved) in accordance with the Board circular dt.17.08.2020 issued in connection with Hon'ble NGT Order dt.21.07.2020 in O.A. No.304 of 2019 (PB).**
14. **The proponent shall obtain mine lease grant work order from Mines and Geology Department before applying for CTO of the Board.**
15. The proponent shall not take-up mining activities without obtaining CTO of the Board.
16. The following rules and regulations notified by the MoEF&CC, GOI shall be implemented.
 - a. Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
 - b. Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.

- c. Battery Waste Management Rules, 2022.
 - d. E-waste (Management) Rules, 2022.
 - e. Plastic Waste Management Rules, 2016.
 - f. Construction and demolition waste Management Rules, 2016.
 - g. Fly Ash Notification, 2016.
 - h. Solid Waste Management Rules, 2016.
 - i. The Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof.
17. The proponent shall develop greenbelt wherever possible in buffer zone area. Greenbelt development shall be started along with the construction activity.
 18. The proponent shall store the mine rejects and overburden within the earmarked mine lease area as per the approved mine plan.
 19. The proponent shall adopt fugitive dust control measures such as water sprinkling near loading areas, on haul roads etc.
 20. The proponent shall utilize the top soil for green belt development.
 21. The proponent shall control the Noise levels to acceptable limits (CPCB standards) during excavation in the mining area.
 22. The proponent shall develop greenbelt with tall growing trees all along the boundary.
 23. The fugitive emissions from all sources shall be controlled effectively.
 24. The proponent shall take necessary measures for control of air pollution which would be generated during excavation and transportation of the mined material as committed in the EMP / approved mine plan.
 25. The proponent 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.
 26. 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.
 27. The Board reserves its right to modify above conditions or stipulate any additional conditions including revocation of this order in the interest of environment protection.

S.SHANKAR NAIK
JOINT CHIEF ENVIRONMENTAL ENGINEER

To
2.024 Ha, Building Stone of M/s. Adani Gangavaram Port Limited,
Old Sy.No.274 (New Sy.No.307),
Pedgantyada (V&M),
Visakhapatnam District.

Annexure-4
(Compliance of Consent for Establishment Expansion
Order)

ADANI GANGAVARAM PORT LIMITED

COMPLIANCE FOR CONSENT TO ESTABLISH (EXPANSION) ORDER

Order No: 12132/APPGB/ZO-VSP/VSP/CTE/2026 Date: 31.12.2025.

FOR THE PERIOD OF 01st OCTOBER 2025 to 31st MARCH 2026

SCHEDULE-A

S.No.	CONDITION	COMPLIANCE
1.	Progress on implementation of the project shall be reported to the concerned Regional Office, A.P. Pollution Control Board once in three months.	Now, we are submitting EC half yearly report to the Integral Regional Office (IRO), MoEF&CC, Vijayawada for the period of 01st October 2025 to 31st March 2026 through online in PARIVESH portal.
2.	The proponent shall obtain Consents for Operation from APPCB, as required under sec. 25/26 of the Water (P&C of P) Act, 1974 and under Sec.21 of the Air (P&C of P) Act, 1981 and Authorization under Hazardous and Other Wastes (Management, Handling & Transboundary Movement) Rules, 2016 before commencement of the activity, including trial production.	Noted. The application for Expansion of Consent To Operate through AP Industries Portal is under progress. Online Application No. 5014112, Date: 25.03.2026.
3.	Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves its right and power under Sec.27 (2) of Water (Prevention & Control of Pollution) Act, 1974 and under Sec.21 (4) of Air (Prevention & Control of Pollution) Act, 1981 to review any or all the conditions imposed herein and to make such alternation as deemed fit and stipulate any additional conditions by the Board.	We will obey to the condition.
4.	The Consent of the Board shall be exhibited in the factory premises at a conspicuous place for the information of the inspection officers of different departments.	Noted.
5.	The proponent shall display online data outside the main gate on quantity and nature of hazardous chemicals being used in the plant, water & air emissions and solid waste generated within the factory premises, as per Hon'ble Supreme Court order.	Noted.
6.	The Rules and Regulations notified by Ministry of Law and Justice, Government of India, regarding the Public Liability Insurance At, 1991 shall be followed.	We will follow all the rules and regulations notified by Ministry of Law and Justice, Government of India, regarding the Public Liability Insurance At, 1991.
7.	If the proponent is aggrieved by this order made by A.P. Pollution Control Board under Sec. 25 of Water (Prevention & Control of Pollution) Act'	We will follow as directed.

	1974 and Sec. 21 of Air (Prevention & Control of Pollution) Act' 1981 he may within 30 days from the date on receipt of the order prefer an appeal before concerned Authority.	
8.	The order is issued without prejudice to the rights and contentions of this Board in any court of law.	Noted.

SCHEDULE-B

S.No.	CONDITION		COMPLIANCE	
1.	The source of water is through Borewell and the maximum permitted water consumption shall not exceed the following quantities.			
	S. No.	Source	Quantity as per EC dt 29.07.2021 and CTO order dt. 26.02.2024	Quantity as per EC Order Dt. 02.09.2025 & as per CTE (Exp) applications
	1.	Water sprinkling on haul Roads / Dust suppression	1.5 KLD	1.5 KLD
	2.	Green belt development	1.5 KLD	1.5 KLD
	3.	Domestic	1.0 KLD	1.0 KLD
		Total	4.0 KLD	4.0 KLD
	COMPLIANCE: Fresh water consumption will be maintained within the quantities stipulated by the Board, and the water required for the mining operations is sourced through VIWSCO. Water agreement attached as annexure.			
2.	The maximum waste water generation (KLD) shall not exceed the following:			
	S.No.	Source	Quantity	
	1.	Domestic	0.3 KLD	
		Total	0.3 KLD	
	Effluent Source		Standards to be complied	Mode of final disposal
	Domestic		---	Septic tank
	COMPLIANCE: The wastewater generation will be within the limits permitted by the Board. Domestic wastewater generated from the mine will be treated through a septic tank followed by a soak pit system.			
3.	The mine operator has to provide digital flow meters with totaliser facility to assess the water consumption to quantify the water used for various purposes and shall maintain log registers.		Noted.	
AIR:				
4.	The mine operator shall comply with the following for controlling air pollution.			
	S.No.	Source	Capacity	Control Equipment

	COMPLIANCE: Noted.			
5.	Provision for Ambient Air Quality Monitoring shall be provided and comply with National Ambient Air Quality Standards of SO2 – 80 µg/m3; NOx – 80 µg/m3; PM 2.5 - 60 µg/m3; PM 10 - 100 µg/m3 (24 hours average) measured at		Ambient air quality monitoring is being carrying out by MoEF&CC/NABL recognized laboratory and AAQ levels are well within the standards laid by the board. Monthly monitoring reports will be	

	periphery of the mine and for other parameters as applicable, as per CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009. The mine operator shall submit monthly reports to RO and ZO regularly. * The Mine operator shall comply with noise standards as per MoEF Notification SO123 (E) dt.14.02.2020 as following: Noise Levels: Day time: (6 AM to 10 PM) – 75 dB(A) Night time: (10 PM to 6 AM) – 70 dB(A)	submitted to Regional Office at APPCB.

6.	The proponent shall provide dust suppression measures like water spraying arrangements on haul roads, loading & unloading areas and material handing areas to avoid fugitive dust emissions.	We will provide dust suppression measures like water spraying arrangements on haul roads, loading & unloading areas and material handing areas to avoid fugitive dust emissions.

7.	The air pollution control equipment like water sprinklers shall be installed along with the commissioning of the activity.	Water sprinklers will be installed along with the commissioning of the activity to control air pollution within the mining activity.

8.	The proponent shall comply with the specific standards with respect to process emissions stipulated by the MoEF & CC, GoI, New Delhi from time to time. <table border="1"> <thead> <tr> <th>S.No.</th><th>Details of process emissions</th><th>Emission control system</th><th>Emission standards</th></tr> </thead> <tbody> <tr> <td colspan="4">----</td></tr> </tbody> </table> COMPLIANCE: We will comply with the specific standards with respect to process emissions stipulated by the MoEF & CC, GoI, New Delhi from time to time.			S.No.	Details of process emissions	Emission control system	Emission standards	----			
S.No.	Details of process emissions	Emission control system	Emission standards								

SOLID WASTE:

9.	The solid wastes generated shall not exceed the following breakup quantities: <table border="1"> <thead> <tr> <th>S.No.</th><th>Solid Waste generation</th><th>Quantity</th><th>Mode of Disposal</th></tr> </thead> <tbody> <tr> <td colspan="4"></td></tr> </tbody> </table> COMPLIANCE: Noted.			S.No.	Solid Waste generation	Quantity	Mode of Disposal				
S.No.	Solid Waste generation	Quantity	Mode of Disposal								

10.	Dumping of overburden, if done, should use the retreating pyramid bench formation with concurrent, physical and biological reclamation. Dumps should be contoured and provided with relief control and stabilized. Dump tops should be compacted, leveled and be properly drained.	Noted.

GENERAL CONDITIONS:

11.	The proponent shall scrupulously comply with conditions stipulated by the SEIAA (AP), MoEF&CC, GoI in the Environmental Clearance order dated 29.07.2021 & EC (expansion) order 02.09.2025.	We will comply with conditions stipulated by the SEIAA (AP), MoEF&CC, GoI in the Environmental Clearance order dated 29.07.2021 & EC (expansion) order 02.09.2025.
12.	The mining shall be carried out as per the mine plan approved by Mines & Geology Department.	We will carry out the mining activity as per the mining plan approved by Mines & Geology Department.
13.	The proponent shall maintain minimum distance	We will maintain minimum distance from

	from habitation (200 mts when blasting is involved / 100 mts when blasting is not involved) in accordance with the Board circular dt.17.08.2020 issued in connection with Hon'ble NGT Order dt.21.07.2020 in O.A. No.304 of 2019 (PB).	habitation (200 mts when blasting is involved / 100 mts when blasting is not involved) in accordance with the Board circular dt.17.08.2020 issued in connection with Hon'ble NGT Order dt.21.07.2020 in O.A. No.304 of 2019 (PB).
14.	The proponent shall obtain mine lease grant work order from Mines and Geology Department before applying for CTO of the Board.	Noted.
15.	The proponent shall not take-up mining activities without obtaining CTO of the Board.	Noted.
16.	The following rules and regulations notified by the MoEF&CC, GOI shall be implemented. a. Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. b. Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989. c. Battery Waste Management Rules, 2022. d. E-waste (Management) Rules, 2022. e. Plastic Waste Management Rules, 2016. f. Construction and demolition waste Management Rules, 2016. g. Fly Ash Notification, 2016. h. Solid Waste Management Rules, 2016. i. The Noise Pollution (Regulation and Control Rules, 2000 and amendments thereof.	We will follow all the rules and regulations notified by the MoEF&CC, GOI.
17.	The proponent shall develop greenbelt wherever possible in buffer zone area. Greenbelt development shall be started along with the construction activity.	Greenbelt is developed along the both sides of the haulage road.
18.	The proponent shall store the mine rejects and overburden within the earmarked mine lease area as per the approved mine plan.	Noted.
19.	The proponent shall adopt fugitive dust control measures such as water sprinkling near loading areas, on haul roads etc.	We will adopt fugitive dust control measures such as water sprinkling near loading areas, on haul roads etc.
20.	The proponent shall utilize the top soil for green belt development.	We will utilize the top soil for greenbelt development as directed by the Board.
21.	The proponent shall control the Noise levels to acceptable limits (CPCB standards) during excavation in the mining area.	Noise levels are being monitored with NABL Accredited laboratory (Visakha Enviro Labs) and the reports of the same are submitted monthly at APPCB. The levels are observed within the prescribed standards.
22.	The proponent shall develop greenbelt with tall growing trees all along the boundary.	Greenbelt is developed along the both sides of the haulage road.
23.	The fugitive emissions from all sources shall be controlled effectively.	We will adopt fugitive dust control measures such as water sprinkling near loading areas,

		on haul roads etc.
24.	The proponent shall take necessary measures for control of air pollution which would be generated during excavation and transportation of the mined material as committed in the EMP / approved mine plan.	We will take necessary measures for control of air pollution which would be generated during excavation and transportation of the mined material as committed in the EMP / approved mine plan.
25.	The proponent 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.	We will 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.
26.	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.	Noted.
27.	The Board reserves its right to modify above conditions or stipulate any additional conditions including revocation of this order in the interest of environment protection.	We will obey with the condition.

Annexure-5
(VIWSCO Water Agreement)



SUPPLEMENTARY AGREEMENT FOR WATER SUPPLY

This supplementary agreement to Agreement for Water Supply dated 10th September 2009, Supplementary Agreement for Water Supply dated 10th October, 2019 & Supplementary Agreement for Water Supply dated 5th November, 2019 is made at Gajuwaka on 3rd Day of August 2023.

BETWEEN

M/s. Visakhapatnam Industrial Water Supply Company Limited (CIN: U90009AP1999PLC032051), a Company incorporated under the Companies Act, 2013 (erstwhile Companies Act, 1956) having its Registered Office at C/o. GVMC, Room No.204, Tanneti Bhavan, Aseelmetta, Visakhapatnam -530002 (here in after called the "SUPPLIER" which expression shall mean where the context so admits include its, successors, administrators, legal representatives and assigns) of the one part

AND

M/s. Adani Gangavaram Port Limited - CIN: U61100GJ2021PLC124091 (erstwhile M/s. Gangavaram Port Limited (CIN: U45209TG2001PLC037861), Company incorporated under the Companies Act, 2013 (erstwhile Companies Act, 1956)) having its Registered Office at Adani Corporate House, Shantigram, Near Vaishno Devi Circle, SG Highway, Khodiyar, Ahmedabad Gujarat - 382421 (here in after called the "CONSUMER" which expression shall where the context so admits include its, Successors, administrators, legal representatives and assigns) of the other part.

WHEREAS the above Consumer is an existing Consumer of the Supplier since 2009 by virtue of Agreement for Water Supply made on 10th September, 2009 and Supplementary Agreement made on 5th November, 2019 for a period of 5 years for Supplying 1.2 MLD (i.e., about 1200 Kilo Liters Per Day) of bulk water after payment of requisite Capital Cost Contribution (non-refundable) hereafter called as Connection Charges for Bulk Water Supply and Advance Consumption Charges of 6 months hereafter called as Security Deposit for Bulk Water Supply.

WHEREAS the Consumer had applied to Supplier vide their Office Letter No.GPL/CIVIL/VIWSCO/2021-22/01 dated 21st September, 2021 requesting for supply of 1.6 MLD (i.e., about 1600 Kilo Liters Per Day) in place of present quantity of 1.2 MLD of bulk water from VIWSCO water supply facilities and have paid the additional amount Rs.43,92,000/- (Rupees Forty Three Lakhs Ninety Two Thousand only) towards the Security Deposit for the additional quantity of 0.4 MLD (i.e., about 400 Kilo Liters Per Day) as intimated by the Supplier.



WHEREAS the Supplier had agreed to Supply 1.6 MLD (i.e., about 1600 Kilo Liters per Day) in place of present quantity of 1.2 MLD of bulk water to the Consumer

NOW THIS SUPPLEMENTARY AGREEMENT WITNESSETH AND IS HEREBY AGREED TO BY AND BETWEEN THE PARTIES AS FOLLOWS:

1) The Parties to this Agreement hereby agree to modify the Agreement for water supply dated 10th September 2009, Supplementary Agreement for Water Supply dated 10th October, 2014 and Supplementary Agreement for Water Supply dated 5th November, 2019 as below:

1.1 Clauses 2, 3 and 9 of the original agreement are hereby **SUBSTITUTED** with the following Clause 2, 3 and 9 respectively:

"2. The consumer will be supplied a total allotted quantity of 16 (sixteen) Lakhs Liters per day of raw water from YLMC sources at delivery point during the period of 0 to 24 hours from the date of this agreement. The Consumer will be supplied 16 (Sixteen) Lakhs Liters of raw water per day from YLM Canal only at the delivery point."

"3. The quantity agreed to be supplied will be in force for a period of 10 (ten) years with effect from the date of signing of this agreement and is subject to alterations after the expiry of the period with mutual consent."

"9. The Consumer will charged at Rs.30.00 per 1000 liters/One Kilo Liter with 5% escalation per annum w.e.f. 01-04-2023 (Thereafter the charges shall be escalated @5% (five percent) annually (on 1st April of every financial year)) on the quantity drawn as recorded by meter fixed on the supply main. If the consumption exceeds the agreed/allotted quantity under clause2, a surcharge of 100% over the agreed rate will be levied for excess quantity. The Consumer shall have to maintain the meter near the off-take point as possible at his own cost and also meet the cost of its maintenance, repairs replacement and testing etc., that are found necessary. It should be kept in masonry chamber with proper locking sealed by the VIWSCO. The meter shall be in charge of the VIWSCO but the Consumer shall be permitted to have access to it by the VIWSCO on request."

2) Other terms and conditions contained in the Agreement dated 10th September 2009 and Supplementary Agreements for Water Supply dated 10th October, 2014 and 5th November, 2019 shall remain the same.

In witness whereof, M/s. Visakhapatnam Industrial Water Supply Company Limited (the Supplier) and the M/s. Adani Gangavaram Port Limited (the



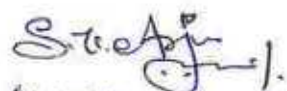
Consumer) have here into set their signatures and seals on the day, month and year above written.

For Visakhapatnam Industrial Water Supply
Company Limited



C.M. Saikanth Varma, IAS
Chairman and Managing Director
DIN: 10167877

Witness:

- 1)  (C. Suman, CFO, VIWSCO)
- 2) 
(S. Krishnaarjuna Rao)
AM (AGS), VIWSCO

For Adani Gangavaram Port Limited



Authorized Signatory

Witness:

- 1) 
- 2) 

Annexure-6
(Photographs)

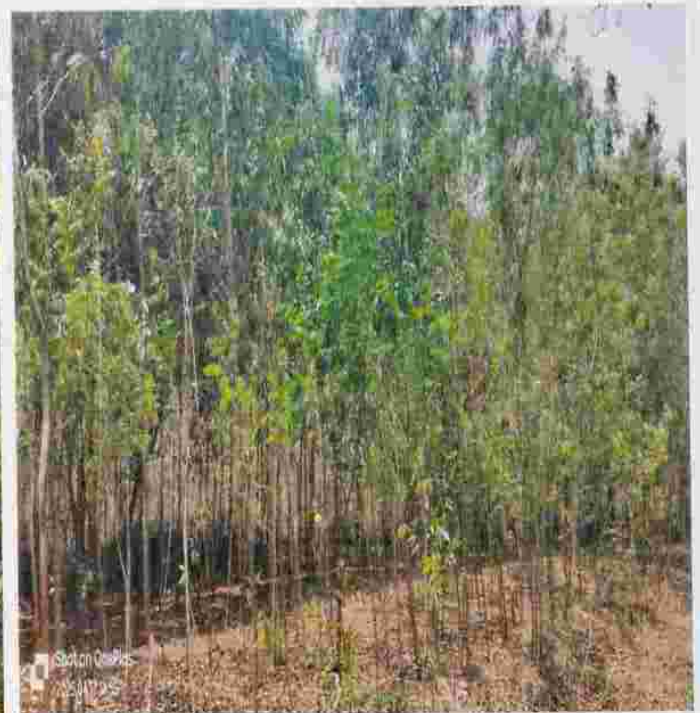
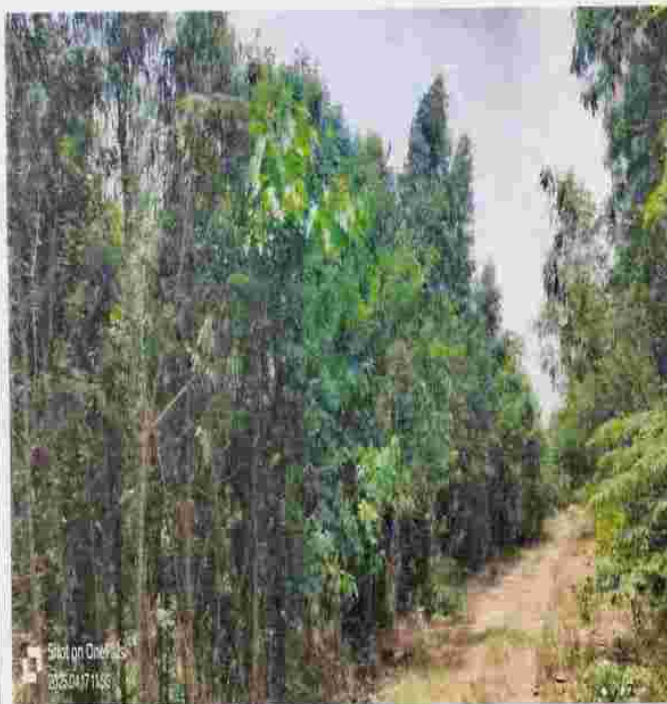
GARLEND DRAINS



RETAINING WALL



EXISTING PLANTATION



NOTICE

It is to inform that Adani Gangavaram Port Limited has obtained Environmental Clearance Expansion from SEIAA, Andhra Pradesh Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India through order No. SEIAA/AP/MIN/FC/VS/04/2025/1340/269.454.269.1, Date: 02-09-2025 for Building Stone mining from 12,450 m³/Annum to 1,88,226 m³/Annum in a total area of 2.024 Ha at Sy. No. 274, (New Sy.No.307), Peda Gantyada Village, Peda Gantyada Mandal, Visakhapatnam District, Andhra Pradesh. The copy of Environmental Clearance Expansion is available in PARIVESH Portal, MoEF&CC, website : <https://parivesh.nic.in/> and on website of Adani Ports and Special Economic Zone Ltd. at <http://www.adaniport.com/Downloads>.

Adani Gangavaram Port Limited

ప్రకటన

ఇందుమూలముగా తెలియజేయునది ఏమనగా అదాని గంగవరం పోర్టు లిమిటెడ్ సర్వే నెం. 274 (కొత్త సర్వే నెం.307)లో విస్తీర్ణం 2.024 హెక్టార్లలో పెదగంట్యాడ గ్రామం, పెదగంట్యాడ మండలం, విశాఖపట్నం జిల్లా, ఆంధ్రప్రదేశ్, పర్యావరణ అనుమతులు యొక్క ఆర్డర్ నెం. SEIAA/AP/MIN/FC/VS/04/2025/1340/269.454.269.1, తేదీ. 02.09.2025, బిల్డింగ్ స్టోన్ ను సంవత్సరానికి 12,450 నుండి సంవత్సరానికి 1,88,226 పెంచుకొనుట కొరకు SEIAA ఆంధ్రప్రదేశ్ నుండి పర్యావరణ అనుమతులు పొందియున్నారు. ఆ ప్రతులు పరిష్కే పోర్టల్, పర్యావరణ, అటవీ మరియు వాతావరణ మార్పు మంత్రిత్వ శాఖ (MoEF&CC) వెబ్ సైట్ నందు లభించును. <https://parivesh.nic.in/> and on website of Adani Ports and Special Economic Zone Ltd. at <http://www.adaniport.com/Downloads>.

అదాని గంగవరం పోర్టు లిమిటెడ్

Order no:SEIAA/AP/VSP/MIN/08/2020/2060/158.1058153.124.516

View/Download
NEWS POLE ENGLISH DAILY
31st JULY 2025



TS opposes AP's water drawal from PRP without board's consent

Reliance, seeks post-trial flow before approval in Andhra Pradesh and Puducherry

TS views on Krishna water sharing

The Government of Telangana has expressed its opposition to the proposed water sharing arrangement between Andhra Pradesh and Puducherry. The Telangana government has stated that any such arrangement must be approved by the Krishna River Water Disputes Tribunal (KRWD) before it can be implemented. The government has also expressed its concern over the potential impact of such an arrangement on the water resources of the state.

BY Vijayendra OF TO DS



Demand for Sivankutty's ouster rejected

The Telangana government has rejected the demand for the ouster of Sivankutty, a prominent leader of the Telangana Rashtra Samithi (TRS). The government has stated that Sivankutty is a loyal citizen and has not committed any crime. The government has also expressed its concern over the potential impact of such a demand on the stability of the state.

WEATHER WATCH



NOTICE

This is to inform that the Environmental Impact Assessment Authority (SEIAA) has received Environmental Clearance on 29/07/2021 for the proposed Quarry in Sy.No.274 (New Sy.No.307) at Yarcada for Quarry operations for the development of Gangavaram Port. Copies of Environmental Clearance are available with the SEIAA and may also be seen on the website seiaa.ap.nic.in.

Management Gangavaram Port Ltd



Copyright © 2006 John Wiley & Sons, Ltd.

Journal of Management Education 35(10) 1109-1124

Compliance Year ¹	By What Year ²	For Whom ³
2007	2010	☒ All employees ☐ All contractors

[illegible]

1000000

Note 1

100



 Type here to search



REFERENCE

Figure 1

[illegible]

1

¹ Correspondence: K. S. Srinivasan, Department of Chemical Engineering, Indian Institute of Technology, Kharagpur, India. E-mail: kssrinivasan@iitkgp.ac.in

5/10/2014 8:00

10



 [Type here to search](#)

