Bhagwat Swaroop Sharma

From: Bhagwat Swaroop Sharma

Sent: Wednesday, May 29, 2024 7:27 PM

To: eccompliance-guj@gov.in; iro.gandhingr-mefcc@gov.in

Cc: ec-rdw.cpcb@gov.in; ro-gpcb-kute@gujarat.gov.in; ms-gpcb@gujarat.gov.in;

mefcc.ia3@gmail.com; monitoring-ec@nic.in; direnv@gujarat.gov.in; Anil Trivedi;

Date: 29.05.2024

Sujalkumar Shah

Subject: Half Yearly EC Compliance Report Submission - APSEZ, Mundra - MPT- T2 2007

Period of Oct.2023 to March 2024

Attachments: EC Compliance_T2_2007_Oct23 to Mar24.pdf



APSEZL/EnvCell/2024-25/009

To

The Inspector General of Forest / Scientist C,

Integrated Regional Office (IRO),

Ministry of Environment, Forest and Climate Change,

Aranya Bhawan, A Wing, Room No. 409,

Near CH 3 Circle, Sector - 10A,

Gandhinagar - 382007.

E-mail: eccompliance-guj@gov.in, iro.gandhingr-mefcc@gov.in

Sub : Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose

berth (Terminal- 2) at Mundra Port, Dist. Kutch"

Ref : Environment clearance under CRZ notification granted to M/s Adani Ports & SEZ Limited vide letter dated 5th

February, 2007 bearing no. 11-84/2006- IA.III

Dear Sir,

Please refer to the above cited reference for the said subject matter. In connection to the same, it is to state that copy of the compliance report for the Environmental and CRZ Clearance for the period of October 2023 to March 2024 is being submitted through soft copy (e-mail communication).

Kindly consider above submission and acknowledge.

Thank you,

Yours Faithfully,

For, M/s Adani Ports and Special Economic Zone Limited



Bhagwat Swaroop Sharma Head – Environment Mundra & Tuna Port

Encl: As above

Copy to:

- 1) The Director (IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003.
- 2) The Zonal Officer, Regional Office, CPCB Western Region, Parivesh Bhawan, Opp. VMC Ward Office No. 10, Subhanpura, Vadodara 390023.
- 3) The Member Secretary, GPCB Head Office, Paryavaran Bhavan, Sector 10 A, Gandhi Nagar 382010.
- 4) The Director, Forests & Environment Department, Block 14, 8th floor, Sachivalaya, Gandhi Nagar 382010.
- 5) The Regional Officer, Regional Office GPCB (Kutch-East), Gandhidham 370201.



APSEZL/EnvCell/2024-25/009

To

The Inspector General of Forest / Scientist C,

Integrated Regional Office (IRO), Ministry of Environment, Forest and Climate Change, Aranya Bhawan, A Wing, Room No. 409, Near CH 3 Circle, Sector – 10A, Gandhinagar – 382007.

E-mail: eccompliance-guj@gov.in, iro.gandhingr-mefcc@gov.in

Sub : Half yearly Compliance report of Environment Clearance for the project namely "Development of

Date: 25.05.2024

Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"

Ref : Environment clearance under CRZ notification granted to M/s Adani Ports & SEZ Limited vide

letter dated 5th February, 2007 bearing no. 11-84/2006- IA.III

Dear Sir,

Please refer to the above cited reference for the said subject matter. In connection to the same, it is to state that copy of the compliance report for the Environmental and CRZ Clearance for the period of October 2023 to March 2024 is being submitted through soft copy (e-mail communication).

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- 4) The Director, Forests & Environment Department, Block 14, 8th floor, Sachivalaya, Gandhi Nagar 382010.
- 5) The Regional Officer, Regional Office GPCB (Kutch-East), Gandhidham 370201.

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

Gujarat, India

CIN: L63090GJ1998PLC034182

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Environmental Clearance Compliance Report

of



Multipurpose Berth
(Terminal -2)
at
Mundra Port,
Dist. Kutch, Gujarat

of Adani Ports and SEZ Limited

Period:

October - 2023 to March - 2024



From : Oct'23 To : Mar'24

Status of the conditions stipulated in Environment Clearance

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	Annexures				
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From : Oct'23 To : Mar'24

Status of the conditions stipulated in Environment Clearance

Chronology of company name change from M/s. Gujarat Adani Port Limited to M/s. Adani
 Ports and Special Economic Zone Ltd. was submitted along with half yearly EC Compliance report for the period Apr'21 to Sep'21.



From : Oct'23 To : Mar'24

Status of the conditions stipulated in Environment Clearance

Half yearly Compliance report of Environment and CRZ Clearance for the project namely "Development of Multipurpose berth (Terminal – 2) at Mundra Port, Dist. Kutch" issued vide MoEF letter no. 11-84/2006-IA.III dated 5th February 2007.

Sr. No.	Conditions as per clearance letter		Compliance Status as on 31-03-2024			
	ecific Condition			31-03-2	024	
(i)	All the conditions stipulated by Forests Environment Department, Government of Gujarat vide their letter no. ENV-10-2005-222-P dated 12/10/2006 should be strictly implemented.	letter Anne:	wise compliand No. ENV-10-2 xure – A.		Z recommendatio ed 12/10/2006 is	
(ii)	No Objection Certificate from Gujarat State Pollution Control Board should be obtained before initiating the project.	Conse conse renev previo	ZL had obtained //Unit-1/FT-139/ ent to operate ent no. AWH-117 ved Consent to ous EC Compliar ent to Establish GPCB and ren	(CC&A) has be 7045 valid till 20 operate (CC& nce report for the (CtE) and Conseewed/amended	Certificate vide G April 2005. The Apr	m GPCB vide 6. The copy of ed along with Mar'22. 0) are obtained ne as per the
		Sr. No.	Permission	Project	Ref. No. / Order No.	Valid till
		1	CtO – Renewal	Mundra Port Terminal	AWH-117045	20.11.2026
		2	CtE – Amendment	WFDP	17739 / 15618	18.05.2027
		3	CC&A Correction	Mundra Port Terminal	PC/CCA-KUTCH- 39(8)/GPCB ID 17739/748148	20.11.2026
		comp	liance report s te (CC&A) (Sr.	submission. The No. 1) were su	vas submitted alor copy of renewe bmitted along wit ct'21 to Mar'22. A	ed Consent to th previous EC



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024
		correction letter was submitted along with half yearly compliance report for the period of Apr'23 to Sept'23.
(iii)	The proposed project should not handle any hazardous goods and cargo.	Only containers and dry cargo is being handled on Multi-Purpose Berth (Terminal – 2). During the compliance period, no hazardous cargo / goods are
(iv)	Quarantine condition should be provided for keeping the hazardous containers if they are accidentally received.	handled at the Multi-Purpose Berth (Terminal – 2). Complied. Only containers and dry cargo is being handled on Multi-Purpose Berth (Terminal – 2). During the compliance period, no hazardous cargo / goods are handled at the Multi-Purpose Berth (Terminal – 2).
(v)	Green belt area should be developed along the project and budget earmarked.	Complied. Green belt was developed 72.67 ha. Total 149959 trees were planted with the density of 2060 trees per hectare within the port area. So, far APSEZ has developed 458 ha. area as greenbelt with plantation of more than 9.06 Lacs Lacs saplings within the APSEZ area. To enhance the marine biodiversity, till Mar'24 APSEZ has carried out mangrove afforestation in 4140 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 1592.8 lakh. Details on Mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as Annexure – 1. Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. Multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE, Gujarat.



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024		
100.	0.00.0.00	These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem.		
		Please refer attached Annexure – 2 for CSR activity report carried out by Adani Foundation.		
(vi)	A disaster management plan covering emergency evacuation mechanism etc. to deal with natural disaster event should be prepared and furnished to the ministry.	Disaster Management plan is in place and implemented to deal with natural disasters such as cyclone, earthquake, flood/heavy rain and tsunami. Updated DMP was submitted to the MoEF & CC along with half yearly compliance report for the period from Apr – 2016 to Sep – 2016 and there is no further change in that. On Site Emergency Response Plan and Crisis Management Plan is in		
(vii)	The company must take	place and implemented. The updated (Aug'23) Onsite emergency plan was submitted during the compliance period Apr'23 to Sep'23.		
(vii)	The company must take up and earmark adequate funds for the socio-economic development and for welfare measures in the area including drinking water supply, vocational	Complied. RO Plants are provided at Samaghogha, Siracha village & Vallabh Vidyalaya at Mundra village. To reduce water born disease and women drudgery to get water, Potable water is provided to the fishermen communities at different vasahat through water tanker since 10 years.		
	training, fishery related development programmes (like cold storages)	APSEZ is actively working with local community around the project area and provides required support for their livelihood and other concerns through the CSR arm – Adani Foundation. Adani Foundation is working in main five persuasions as below.		
		 Education Community Health Rural Infrastructure Sustainability Livelihood Skill Development 		
		Brief information about activities in the main five persuasions i mentioned below. Activities carried out for the same are summarized as below.		
		Area Activity		



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024		
		 Mobile Heath Care Units and Rural Clinics O7 Rural Clinics O5 villages of Mundra & O2 village Mandvi block has benefited by rural clinic service. Total Patients Benefitted FY 23-24 23327 (direct & indirect) by Mobile van and rural clinic. 2 financially challenged patients has been supported with Dialysis treatment at 124 Times which added day in their Life. Provided 41,546 medical health services and conducted health awareness camps for 763 High school students. Cataract-Free Mundra: The initiative is a dedicated effort to eradicate cataract-related vision impairments specially focused on Senior citizen through Meticulous planning as below. Lives Impacted: - 1131 Comprehensive Eye Screenings at Village level Cataract Surgeries to GKGH, Bhuj Post-Operative Care and Follow-up 		
		 ▶ 5 successful Operation Health camp: Specialty camps, Eye checkup camps, Blood donation camp, Anti-tobacco awareness camp, TB screening, and other are conducted in core villages as well as in labour colonies. Specialty health (Gynec, ophthalmic, specialty health camp): - 5795 Patients Benefited. General health camp: - 1618 Patients benefited. Blood Donation Camp: 1715 people have donated blood. Conducted health programs for students, engaging 763 participants, and held sessions on Personal Health & Hygiene Awareness, addressing critical health issues and promoting overall well-being. Women's Health: Provided health services to more than 2610 women benefitted through Menstrual & Mental Health Awareness Drive. Dialysis Support: During this year, 2 patients were supported for regular dialysis with 124 Times which added day in their Life. Medical Supports: 1 007 beneficiary in 35 village. International year of Millets – 2023: To promote millet culture and raise awareness about its benefits in Mundra, we organized a Millet Competition across nine villages. Over 715 women took part in the competition, while 2200 benefited from awareness sessions. Through this initiative, 300 indigenous millet recipes were showcased, 		



From : Oct'23 To : Mar'24

No. clearance letter Sample Survey Report 2023-24 Sample	Sr.	Conditions as per	Compliance Status as on		
highlighting the potential for sustainable and nutritious dishes in our daily diets. Ayushman card facilitation: Ayushman card issued to 6865 for 25 village of 686.50 Cr. health insurance. Preventive health Campaign The Adani Foundation is focusing on providing preventive health carpaign. The Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene histatives and Millet consumption for healthy body. Sample Survey Report 2023-24 55% Never heard about Minestrual hygiene 60% Are using loths on regular basis 36% Had neigh loths on regular basis 60% Are using loths on regular basis 60% Never used millets in their diet 60% Never heard about mileton its benefits 2222 – Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. For Preventive health care. General and multispecialty camps Pediatric camp, General Health camps in 7 villages and Super specialist camp Which benefited more than 4690 patients of Mundra 8 Mandvi Taluka. Cattle Health Camps: Adani Foundation and Animal Husbandry department Veterinary Jointly organizing cattle health Awareness and vaccination programs in 24 Villages of our periphery villages with total 18903 cattle benefitted and 18870 cattle vaccinated. Total 982 cattle owners benefited for Preventive Health Care 8 Fodder Support Program Sustainable Livelihood – Fisher for Fisherman development: 275 Fisherman Shelter Support 275 Fisherman Shelter Support 375 Fisherman Shelter Support 419 Youth Employment 419 Youth Employment 419 Youth Employment 56,523 Man days Mangroves Plantation 56,523 Man days Mangroves Plantation 56,523 Man days Mangroves Plantation			· ·		
Sustainable Livelihood - Fisher folk, Agriculture 8 Women Overall Persistent efforts for Fisherman development: • 598 Education Kit Support • 273 Fisherman Shelter Support • 1,247 Vehicle transportation support of Mundra and Mandvi taluka • 106 Cycle Support to high school going students • 613 Scholarship Support • 419 Youth Employment • 195 Linkages with Fisheries Scheme • 3,534 Ramatotsav Community Engagement • 56,523 Man days Mangroves Plantation Empowering Fisherfolk Communities through Education:			dishes in our daily diets. Ayushman card facilitation: Ayushman card issued to 6865 for 25 village of 686.50 Cr. health insurance. Preventive health Campaign The Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene initiatives and Millet consumption for healthy body. Sample Survey Report 2023-24 55% Never heard about Menstrual hygiene 60% Are using cloths on regular basis 36% Had never used sanitary pads 68% Had no information about UTI 30% Never used millets in their diet 60% Never heard about millets or it's benefits 2222 – Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. For Preventive health care General and multispecialty camps Pediatric camp, General Health camps in 7 villages and Super specialist camp which benefitted more than 4690 patients of Mundra & Mandvi Taluka. Cattle Health Camp: Adani Foundation and Animal Husbandry department Veterinary Jointly organizing cattle health Awareness and vaccination programs in 24 Villages of our periphery villages with total 18903 cattle benefitted and 18870 cattle vaccinated. Total 982 cattle owners		
Mundra Taluka and 58 Students supported at Mandvi			Sustainable Livelihood - Fisher folk, Agriculture & Women • 598 Education Kit Support • 273 Fisherman Shelter Support • 1,247 Vehicle transportation support of Mundra and Mandvi taluka • 106 Cycle Support to high school going students • 613 Scholarship Support • 419 Youth Employment • 195 Linkages with Fisheries Scheme • 3,534 Ramatotsav Community Engagement • 56,523 Man days Mangroves Plantation Empowering Fisherfolk Communities through Education: • Vehicle Transportation Facilities: 146 Students supported		



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on	
No.	clearance letter	31-03-2024	
		 Education Kits Support: Education Kits including notebooks, guides, and bags, to fisherfolk students studying in 9th to 12th standard to enhance their learning experience (57 nos. students benefitted). Educational Awareness Sessions: Through targeted 	
		awareness sessions in Fisherfolk Vasahats, we promote the transformative power of education, with a particular focus on advancing girl-child education. (487 Students motivated for high school Education).	
		Scholarship Support: Provide scholarship support to 31 deserving students, covering their higher secondary school fees. Emphasizing gender equality, we offer 100% fee support to female candidates and 80% to male candidates.	
		 Cycle Support: Overcoming transportation obstacles, our cycle support initiative enables six 9th standard fisherfolk students from Juna Bandar to continue their education with ease. 	
		Assisting During Emergencies: Fisherfolk Home were significantly damaged by the Biporjoy Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery. (336 Fisherfolk house benefited)	
		• Fostering Youth Employment: At APSEZ Mundra, our mission revolves around providing sustainable employment opportunities for the local fishing community. We serve as a bridge between industries and Fisherfolk youth, facilitating job placements to enhance livelihoods. This year, we have successfully engaged 115+ Fisherfolk youth, paving the way for a brighter future. (115+ Fisherfolk youth employed)	
		Strengthening Fisherfolk women: Through comprehensive health and hygiene initiatives, we empower Fisherfolk women. Our programs include family planning resources, menstrual hygiene workshops, nutrition advocacy, and health awareness sessions covering vaccinations, clean water access, and mental health support. (449 Women benefited)	
		Potable Water Distribution: Providing potable water facilities to 9 Fisherfolk Vasahats daily, either through water tankers or by establishing linkages with the nearest Gram Panchayat. This initiative benefits over 5000 Fisherfolk, significantly improving their health and productivity. (5000+ Population benefited).	
		Sustainable Livelihood - Agriculture: During compliance period This year, the Adani Foundation continued its strong commitment to advancing natural farming in	
		Mundra. Through various initiatives and partnerships, we provided	



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on	
No.	clearance letter	31-03-2024	
No.	clearance letter	crucial support to local farmers, empowering them with knowledge and resources to transition to sustainable practices. • 2200+ Farmers educated in natural farming • 800+ Farmers embracing natural farming methods • 200 Farmers got financial assistance of Rs. 10,000 • 3 District level exposure visit • ₹ 36.7 lakh Business done by our benefited Farmers Promoting Natural Farming: • Training: Conducted training for 1250 farmers in 16 villages, enlightening them about the harmful effects of chemical fertilizers. Demonstrated how to produce organic fertilizer using household products, emphasizing its benefits and cost-effectiveness. After adopting it, they witnessed its positive effects on their fields. • Kitchen Garden Kit: We have supported vegetable kitchen garden kits to 500 farmers with the aim to enable them to grow fresh and nutritious, chemical-free vegetables. This will enhance their food security and promote self-reliance. • Empowering Farmers: This year, amidst the aftermath of the cyclone, we stood by our farmers and held dedicated meetings with KVK, KCS, and DRC to restore the fallen date trees. Collaboratively, provided JCB, technical support, organic fertilizer etc. Successfully restored 615 trees. Each Date trees is projected to yield approximately Rs. 25,000, Total Yield in Next Season:- Rs. 1.53 Cr. • Financial Assistance: Extend financial support to 200 farmers, each receiving Rs. 10,000, a transaction gracefully facilitated by Mr. R. N. Parmar, virtually transferring funds to their bank accounts, funded by Adani Petrochemicals. This fund will help farmers in planting a total of 53,136 fruit-bearing plants.	
		Raj Shakti Prakrutik Kheti Sahkari Mandali:	
		 Appreciation by Governor: Governor of Gujarat, Shree Acharya Devvratji, encouraged 25 of our farmers practicing natural farming at the Krushi and Dairy Expo event in Bhuj. Exposure Visits Certification by GOPCA: Our farmers embarked on three eye-opening exposure visits to Gautech-2023, 	
		 Certification by GOPCA: We have successfully certified 28 farmers under the Gujarat Organic Products and Certification Agency (GOPCA). 	
		Kutch Kalptaru FPO (KKPC) and Prakrutik Mandli	
		 To promote horticulture, the Kutch Kalptaru FPO (KKPC) was established in 2020 by farmers from Mundra Block to address various challenges they faced. With an initial 350 	



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on	
No.	clearance letter	31-03-2024	
		shares held by 280 shareholders, the company is now expanding to include up to 5000 farmers and 537 registered shareholders. (800 Farmers benefited and ₹ 33.67 lacs Turn over)	
		 19 nos. of Market Linkage for supporting to Green carnival at Samudra Township & Shantivan colony Now 302+ farmers are collaborated with Mandli. Total Green Carnivals 37, Total Sell 8,623 kg and Revenue generated ₹ 30184805. by connecting directly with consumers, they've seen a remarkable 35% increase in their income. Adani Foundation has also provided 14.38 lacs kg Dry Fodder and 45.85 lacs kg Green fodder in 31 villages of Mundra and Anjar Block to support the resource dependent villagers, to avoid their dependency on mangroves. The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24. Adani Foundation provides Good Quality dry and green fodder to 24 Villages. Project is covering total 15005 Cattels / 2070 farmers and hence enhancing cattle productivity during FY 2023-24. Grass Land development: AF converted 18 acres of denuded village common pastureland gauchar into fertile and productive grassland in Zarpara, Siracha, Gundal , Kukadsar village to transform into Fodder Sustain village during FY 2023-24. 	
		Women Empowerment:	
		Self Help Groups (SHGs): Established 82 self-help groups in various rural and urban areas to provide financial and social support to women We provided training and capacity building workshops to members of these SHGs to help them develop income generating activities and improve their livelihoods Through this initiative, we have empowered over 850 women to become self-reliant with Savings of more than Rs 35 Lacs.	
		 Making SHG Self Reliant: 16 SHG are on pathways of self-reliance. Various handicraft, dry and fresh food making, stitching, tie and die etc. 175+ women - Monthly average income @ 7000 of each member over Month. 	
		 Job Sourcing – Govt: 11 Women supported for application and process of Gram Rakshak Dal, Bank Sakhi, Bima Sakhi and Professional Resouce Person. 	
		 Average income 4200 Per Month. Job Sourcing - Private: 	



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on	
No.	clearance letter		
Sr. No.	Conditions as per clearance letter	> Coordination for Job by Unnati Portal with Adani Group company companies, Britania, B Medical and Emphazer company. > 398 Women supported till date for job sourcing of more than 18 villages. > Average income 10200 Per Month. • Social Empowerment: > 2 Livilinood Enhancement Training through RSETI. > Financial support for business set up. > Legal rights and domestic violence workshops. > Family counselling for Job sourcing. • During FY2023-24 Approx. INR 122.32 lakh were spent for Fisherfolk Amenities work in different core areas. • Till FY 2023-24 Adani Foundation has done total expenditure of INR 1460.50 lakh for Fisherfolk Amenities work in different core areas. • Skill Development and Income Generation −Adani Foundation is working with 82 Self-help group and supporting to develop entrepreneur skills to become self-reliant, sourcing more than 850 women to absorb in various job. Previous development activities: • Cement Roof Sheet Support: fisherfolk Home were significantly damaged by the Bipor Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery." • Potable water Distribution: Providing access of potable Drinking water Facilities to Nine sherfolk vasahat on Daily bases, either By Water tanker or Linkage with Nearest Gram panchayat.	
		 More than 5000 Fisherfolk Population are getting benefit which impact on their health and efficiency. Water distribution to Luni & Bavadi Bandar Fishfolk Vasahat: 35000 KL water for 936 people. 	
		Sagar Mitra Card: Introduced the 'Sagar Mitra Card' to simplify access for Fisherfolk to specific fishing routes within APSEZ. This digital card is connected to a digital punching machine located at designated entry points. Initially, we have implemented this system for Navinal Fisherfolk, and so far, we have issued a total of 57 Sagar Mitra Cards."	
		 Government scheme Awareness session was held in association with Fisheries department Bhuj to facilitate pagadiya fishermen by providing fishing kits to seven Fishermen. The coordination was made by Adani Foundation to process application. 	



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024		
		Education In	promoting natu "Rajshakti Prakru farmers. They o produce in the o • 257 Farmers I Gaukrupa Amrut Series of Traini Foundation.	nave started to preparing Jiva Mrut & am Bio-fertilizer and using in agricrop. ng is arranged by ATMA and Adani farmers for barrel & wormi compost.
		Locotion	Utthan	Benefited
			Initiatives Strengthening government	31 Villages, 77 Schools, 12000+ Students, Efforts for Increase
			Primary & High schools Appointing an Utthan sahayak	Gunotsav result & Board result. 70+ Utthan sahayak works as catalyst. Students: Teacher
			Mainstreamed Progressive learner	ration decrease. Assessment: 6982, Progressive learners: 2541, Mainstreamed: 1278.
			Providing required resources and facilities	Sports Kit, Music Kit, TLM Kit, Science Kit provided in schools.
			Enabling joyful learning spaces	Smart Class with Navneet software+ Bala painting + Activity base learning.
			Adani Students Development Center (ASDC)	2 Adani Evening Education Center, 5 Adani Competitive Coaching Center, 5 Adani English Coaching Center
			Introducing English as a Third Language	Students: 5000+ Classes 1-4, Curriculum, Every Friday morning assembly in English
			Enhancing Reading Habits	Redding corner , 1000+ Oasis workshop , 162780 Books CICO, 100+ Schools partner from 10+ Country in International school library month(ISLM)
			IT on Wheels	2 dedicative van, 2 IT instructors, 55 laptops, 34 schools, Empowering 4170 students , 200+ High schools' students
			Promote sports	6 Students selected in District level sports school, Inspiring more



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
		100 Students. Khel Maha Kumbh : 2000+
		Teachers' & 3500+ Hours Capacity building Sahayak program + Webinar + Diksha + 10 Capacity full days training. Building
		Formation of Plastic free village workshop: Eco Club 1250+ Students, Environment Awareness program & Tree plantation in schools.
		Day Celebrations & Diwali Mela : 5500+ Students. Collaboration with GoG Summer Camp : 6000+ Students Diwali Mela : 5500+ Students. 1400+ Parents participated.
		Mothers as Mothers meet: 700+ Mothers catalyst in Joined: 15000+ this year. transformation (Meetings + Home Visit)
		Strengthening Support in Taluka, District & state level various initiative with DIRT, BRC, Strengthening SMC Committee.
		 Utthan Marks 5-Year Milestone: Celebrating the extraordinary five-year journey of Utthan in Mundra, we hosted a remarkable event graced by the presence of distinguished individuals. The event witnessed the convergence of more than 2000 students, 416 school principals and teachers, and 145 School Management Committee Members Mother's Meet - Promoting Community Bond: Mothers meet is special intervention of Utthan, This year, more than 15000+ Mothers Joined in 700+ Mothers meet. Utthan other various initiatives & Achievements: Utthan won FOKIA Award under the category "Excellence in collaborative CSR Project. Utthan created special syllabus of Maths, Science & English to achieve good result in board exam. The Kutch University has conducted an impact assessment of IT on Wheels, which has been evaluated and certified by the DEO Office. Career Counselling in Utthan High Schools same remedial classes during summer break. Health awareness programs in schools, children of class 6 to 8 were made aware about health. High school girls' students celebrated Rakshabandhan with Shoulder at Boarder. 1000+ Students are preparing for competitive exam. Its more than double from last year.



From : Oct'23 To : Mar'24

Sr. Conditions as per	Compliance Status as on			
No. clearance letter	31-03-2024			
No. clearance letter	Adani Vidya Mandir, Bhadreshwar Empowering Communities through Free and Compulsory Education: We are empowering economically disadvantaged families through free and quality education. In the academic year 2023-24, it proudly serves a student population of 604, with 174 students hailing from fisher-folk communities. 24 dedicated teachers are there in school. Achievement in sports: In August 2023, students of AVMB engaged in block-level sports competitions, excelling in Athletics, Kho-Kho, and Yoga. Team of AVMB: U14 & U17 boys secured 1st place in Kho-Kho and progressed to the district level. Notably, Abzal Reliva, a Class X student, clinched 1st position in Shot Put, and Hardev Jadeja from Class IX achieved 1st rank in Long Jump earning the opportunity to represent Mundra block at the district level Achievement in Arts: Achieved in A			
	Rural Adani foundation designed and build various structure and provide service in the Health, Education, agriculture and sustainable livelihood area. Environmental Sustainability WORK COMPLETED Below tabulated Water Conservation Projects completed during Compliance period: Water Conservation Projects:			
	Swajal Project:			



From : Oct'23 To : Mar'24

S.c.	Conditions as nos			Con	nalianaa Sta	tuc	20.00	
Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024						
INO.	Clearance letter							
		> Aim: The Foundation's Water Conservation program,						
		SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources						
		of groundwater levels and reduction in water sources in various parts of Kutch district.						
					•			matic characters of
					•			to plan for water
								poses. Considering
							•	rs, geohydrological
								r security plan has
					en prepared fo			
				Block	Water		Total no.	Total Capacity
				Name	conservation			Created (CUM)
					structure	•	Structure	J. 33000 (0 3/0)
			M	undra	Check Dam			6,07,332.80
					Pond Deepeni	ng		1,89,121.08
					RRWHS			2750
					Recharge Borewell		209	-
					Percolation W	ell	24	-
					1 61 601661011 **	C		
		Sc	oil Co	nservati	on:			
			•	1250	Farmers Awa	renes	s Sessions	at Village Level:
								ning benefits and
				addres	s their concerr	ıs.		
		• 7 exposure of Hands-On Training & Exposures : Arranged						
		Workshop and training to emphasizing on real-world						
		techniques.						
		857 Farmers link with Government Scheme: facilitation of						
		govt. Cow Nurturing scheme to promote eco- friendly						
		farming practices.						
		258 Gobardhan Bio-gas Support: Link with Gov Gobar Dhan						
		Biogas Unit Nutrient-rich slurry serves as an essential						
		organic fertilizer for natural farming.						
		35 Farmers Natural Farming Certification Process to obtain						
		natural farming certification through the GOPCA for the 35						
							•	Sahakrai Mandali.
			•				-	: Provide platforms
					sources ensuri	ng fa	ir prices and	broader consumer
				reach.				
		Earlier Completed Activities/Projects:						
			Sr.		roject	Unit	Outcome	Impact
			No.		· OJECC	Jille	Juccome	IIIpacc
				Check	dam	1	Water	60 + farmer's
				Restren		'		120+Acre Area of
				Nana Ka			Capacity	Agri land can be
					,-		increased	Irrigated
							by 48000	
							Cum	
	1	1	1	i		1	1	ı



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024					
INU.	Clearance recter	2 Recharge Borewell 21 Reduce Salinity 260+ Acre Area of ingress, and preventing water run					
		3 Pipe Culvert at 1 prevent 35 Checkdamat Bhujpur water farmers' 120+Acre runoff into Area of Agri land seaside. can be Irrigated					
		 Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar. Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. 377 - AC Roof sheet support to Fisherfolk Vasaha 1700+ Benefited. 2 Development of Common Gathering flooring work – 4000+ Benefited. Solar Panel System at Mundra – 600+ Benefited. Maintenance, Fencing & Material Support - 30+ Benefited. Renovation of Shed at Shekranpir Bhopavandh - 2000+ Benefited. 					



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on		
No.	clearance letter	31-03-2024		
NO.	Clearance letter	 40 RRWHS structure have been completed. Total 229 nos. Bore-well recharging activity is completedPercolation well Recharging work at Bhadiya & Mota Kandgra village. Sluice gate Construction to Control Flood during Flooding at Khoydivadi Vistar Bhujpur. Pond Beatification and Bund Strengthening at Bhujpur village. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. commissioning of Community Training Centre at Shekhadiya. Two Pond Deepening at Zarpara under Amrut Sarovar Yojna. Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan. Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. JCB & Hitachi Machine Support for Pre-Moonson activities. Repairing and Maintenance work of Approach at Luni, Bavdi and Navinal Fishermen Bandar. 3 Re-strengthening of Approach Road. Renovate Blood storage Lab CHC Mundra Renovation Blood storage Lab CHC Mundra. Constructed 2 nos. of CC Road of 700 mtr. Constructed 2 nos. Disable Widow Toilet Block Installed R.O. Plant at Mokha with capacity 1000ltr /HR. Constructed 4 nos. Common gathering Open Shed 		
		 Constructed 4 nos. Common gathering Open Shed Constructed 03 nos. of Water Tank at Luni Bandar. 		
		Developed of Cricket Ground at Hatdi Village		
		ENVIRONMENT SUSTAINABILITY PROJECTS till Compliance		
		period:		
		Dates Tree -Restoration: Biparjoy cyclone has damaged huge number plants of Dates, Mango, Sapota. In coordination with Kutch Crop Services and Krishi Vigyan Kendra – more than 615 plants are restored till date and continue. Missweki Forest Dayslander Naga Kanaya Native		
		Miyawaki Forest Development, Nana Kapaya - Native species planation in the 2 acre area at Nana Kapaya village creating a flourishing mini-forest with 5,508 trees.		



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on			
No.	clearance letter	31-03-2024			
		"Adani Van": Barren spaces were transformed into lush green havens through our massive public plantation drives. One notable example is the Bhupur Visri Mata Temple, where 23,000 trees were planted. Second example Momai Mata temple, Desalpar 10,000 trees were planted. Fourth example Matiyadada at Bhujpur 8000 trees were planted. Fourth example Rasha pir, Dhrub 2-acre 5000 tree planted. Thus, in PPP Model 4 Adani Van were developed where 46,000 trees were planted. Prakruti Rath: This initiative goes beyond just planting trees; it is about fostering a sense of responsibility towards our environment. Through 46,750 sapling distribution to individuals, we have empowered communities to take ownership of their surroundings, leading to a heightened consciousness about the environment's significance. Till the date Total 1.49 Lac tree plantation have been done that has enriched the local ecosystem and significantly contributed to carbon sequestration Smruti Van – Plantation more than 47,000 sapling with more than 115 species through Miyawaki methodology. Ecosystem Restoration, Guneri – Grassland ecosystem restoration and mangrove conservation in 40 Ha area over a period of 4 years. The site visit and soil samplings conducted by GES team. Regular bi monthly meeting conducted to assess the annual phase wise growth of ongoing activities. Multi-Species Mangrove Park - Adani Foundation at Mundra's initiated multi-species plantation of mangroves in Kutch association with GUIDE. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-III (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/S. GUIDE. Mangroves Biodiversity Park within one year Home biogas - Under Gram Utthan Project, Adani Fo			



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
Sr. No.	Conditions as per clearance letter	Women Empowerment through Skill Training: Provided Mud work training to 180 women in Mundra taluka villages supported by MPL. RTG Crane Operator Training: Collaborated with APSEZ HR Team to train 79 students. Dori Work and Hand Embroidery Training: Benefited 90 women in various Mundra villages supported by MPL. Health Awareness and Career Sessions: 108 Ambulance Department enlightened GDA trainees at Adani Institute of Medical Sciences. Guest session on career advancement led by Mr. Kapil Goswami. Exposure Visit for Women: Women trained in Mud Work, Dori Work, and Hand Embroidery showcased their skills during a visit by foreign delegates to the Solar Plant. Women's Related Training Seminar: Held at Matruvandana College, Bidada, Mandvi. ASDC Bhuj Center Activities & Achievements: Commendation from Shree Jeet Adani: Received appreciation for supporting the Divyang job fair. Employee Development Initiatives: Conducted Advanced Excel training for 18 Sumitomo India Ltd employees Entrepreneurship Development Program: Organized a comprehensive 12- day program with 60 diverse candidates. New Trainee Orientation: Conducted sessions about SAKSHAM center and LMS registration at the Bhuj Centre. Civil Defense Training (5 days): Covered essential topics including Disaster Management, First Aid, 181 Mahila Helpline, 108 Emergency Services, and Fire Safety.
		candidates. New Trainee Orientation: Conducted sessions about SAKSHAM center and LMS registration at the Bhuj Centre. Civil Defense Training (5 days): Covered essential topics including Disaster Management, First Aid, 181 Mahila
		 Indo-Euro Project Seminar: Arranged at various Nursing Colleges in Kutch District. Focused on German Language training and job placements. Crucial Meeting with ISAR & UNICEF: Discussed future skill development challenges and transgender equality on 9th December 2023.
		Total 734 nos. in ASDC Mundra Center and 405 nos. in ASDC Bhuj Center male & female trained in various skill development programme.
		Please refer Annexure - 2 for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2023-24 is to the tune of INR 953.50 lakh. Out of which, Approx. INR 940.52 lakh is spent during the FY 2023-24.



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
		Till Mar'24, Adani Foundation has done total expenditure of INR 172.38 Cr. for CSR activities in Kutch region since its inception
(viii)	The fishing activities by	Complied.
(VIII)	the fishermen living in the settlement along the creek should not be hindered and a	No commercial fisheries are prevailing in this area except Pagadia and fishermen with small boats. Unhindered access is provided to the fishing boats.
	mechanism may be evolved for the movement of fishing boats vis-a-vis shipping activities.	During project proposal, APSEZ proposed to provide four (4) dedicated accesses at Juna Bandar, Luni, Bavdi Bandar and Zarpara for the fishermen to approach the sea for fishing activity. However, during construction as well as operation, through fishermen consultative process, APSEZ has provided seven (7) access roads. Total length of all the approach roads is approx. 23 Kms and expenditure involved is Rs. 637 Lacs. There is no hindrance to the movement of fisherman boats. Details of the same were submitted along with EC Compliance report for the period Apr'18 to Sep'18.
		Communication mechanisms have been developed for the smooth movement of fishing boats vis-à-vis shipping activities. Please refer point no. vii above for further details regarding CSR activities being carried out by Adani Foundation.
(ix)	The relocation of the	Complied.
	fishermen and local community if any, in the area should be done	The project was conceptualized in such a way that there are no fishermen or local community settlements in the project proposal.
	strictly in accordance with the norms prescribed by the State Government.	APSEZ performs a large-scale socio-economic upliftment program in consultation with FOKIA (Federation of Kutch Industries Association) chaired by District Collector quarterly.
	relocated communities should be provided with all facilities including health care, education, sanitation and livelihood.	APSEZL have provided necessary facilities including health care, education, sanitation, livelihood, drinking water & other infrastructural support to fisher folk community in the region. Please refer point no. vii above for further details regarding CSR activities being carried out by Adani Foundation.
(x)	The project proponent	Complied.
	should not undertake any destruction of mangroves during construction and operation of the project.	Construction phase is already completed and the project is in operation phase. All developments are carried out as per permissions granted.
		Conservation of mangroves:



From : Oct'23 To : Mar'24

Sr. Conditions as per No. clearance letter	Compliance Status as on 31-03-2024				
No. clearance letter	 identified by NIO in an EIA Out of this 1800 ha area, potential mangrove conse of the EIA report of WFDF It may be noted that the emangroves. Entire area is being consemangroves in this area. regular surveillance have within this area. As per MoEF&CC directive mangroves in and around cover in and around APSE comparison between 2011 of 246 ha. NCSCM final report on oppreservation and conservation and conservation and around was submitted report for the period Apsubmitted to GCZMA and recommendation vide (with 04.06.2018 & reminder letter on the findings of the report control of the report of the period that it is not the findings of the report control of the report of the period and the report control of the report of the report of the period that report of the rep	approx. 1800 ha. mangrove area was A report prepared the year 1998. 1254 ha area was further demarcated as ervation by NIO in the year 2008 (as part			
	Sr. Recommendations No.	Compliance			



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on				
No.	clearance letter			31-03-2024		
		1.	Mangrove mapping and monitoring in and around APSEZ	 APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 8 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%. This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of mangroves in a progressive direction. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. According to GUIDE Mangrove monitoring study report November 2023 (was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23.), the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). The cost of the said study was INR 23.60 Lacs incurred by APSEZ. 		



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024						
					Mangrove mapping Year	Mangrove cover total Area (Ha.)		ove cover
					2011	2094	-	-
					2011 to 2016- 17	2340	246	11.75%
					2017 to 2019 till March	2596	256	10.94%
					2019 to 2021 till March	2723	127	4.89
					Total	2723	629	
		2.	Tidal observation in creeks in and around APSEZ	fu cı	locations Baradimata creeks unde The observe creeks exp adequate fo The cost of Lacs.	ing of mangri bund APSEZ f ed out the tic similar to , Navinal, E er the guidance d tidal range erience nor or the growth the said ac	ove distriction 202 dal obser 2017 Bocha a ce of NC s indicat mal tida of many	ribution in 21 to 2023. Evations at in Kotdi, and Khari ESCM. Le that the al ranges, groves. Les INR 1.0
		3.	Removal of Algal and Prosopis growth from mangrove areas	•	done in an algal encru the mangr removed mathemote of during the	rosopis growld around mastation was ove areas, anually. The said activer 2023-24. The cached as An ached	engrove found ir which ity was F The alga	area and n some of has been Rs. 80000 al removal



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on					
No.	clearance letter	31-03-2024					
No.	clearance letter	4. Awareness of mangroves in group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattels / 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg. • Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder support of the expenditure for fodder support activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land development with strong Community Contribution and Mobilization. • Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas. • APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apri23 to Sep 23. • Since PhD scholars and students frequently visit this area for study, we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist. • Refer CSR report attached as Annexure – 2.					
		NCSCM mangrove conservation action plan were submitted as a part					
		NCSCM mangrove conservation action plan were submitted as a part of half yearly EC compliance report for the period Oct'20 to Mar'21.					



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
		To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked.
		After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work is 23.60 Lacs (Including Taxes), which was paid by APSEZ.
		GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23.
		According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradimata, Navinal, Bocha and Khari creeks and also in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019.
		According to GUIDE Mangrove monitoring study report of November 2023 the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied



Sr. No. Conditions as per

clearance letter

Adani Ports and Special Economic Zone Limited, Mundra.

From : Oct'23 To : Mar'24

Compliance Status as on

31-03-2024using LISS IV satellite images for the duration of March 2019 to March

(xi)	Sewage arising in the	a pos incre 2019 incre Henc	•	d from N 79 ha (1. mangrov 23 ha dur ncrease in	Narch 20 9%) come cover of the year of	on to Mar opared to to during 201 year 2021.	ch 2021, whe cover of 9 was 2670 rea in cree	with an ov Juring the O ha whicl k system in	verall year h has
(XI)	port area should be disposed off through septic tank – soak pit	Sewa	nge general ed sewage		•	-	-	nated ETF	o and
system or should be treated along with the industrial effluent to conform to the standards stipulated by		Location	Capacity	, (Avg. 1	ity of Treat Water from Oct'23 Mar'24)	to Type	of ETP / STP		
	Gujarat Pollution Control Board and should be		LT	265 KLD	9	3.62 KLD		ivated udge	
	gardening, plantation and irrigation.	perio	nary of ET d as mention	oned belo	ow.	·			
			Parameter	Unit	Min	Max	Average	Perm. Limit ^{\$}	
			ρН		6.55	7.42	7.11	6.5 – 8.5	
			SS	mg/L	26	48	35	100	
			TDS	mg/L	970	1184	1096	2100	
			COD	mg/L	82	89	87.37	100	
			BOD Ammonical	mg/L	24	26	24.92	30	
			Nitrogen as NH ₃ -N	mg/L	23.8	28.4	25.8	50	
	1					•	\$ as per CC	&A granted by	v GPCB
			quality of m					sions and	noise
		levels	quality of m s are being oved agend	regularly				sions and	noise



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024					
		Please refer Annexure-4 for detailed analysis reports. Approx. INR 13.37 Lakh is spent for all environmental monitoring activities during the FY 2023-24 for overall APSEZ.					
		It is also noted that GPCB is doing regular site inspection along with wastewater sampling and analysis. The last GPCB sample analysis report was submitted as part of compliance report submission for the duration of Apr'21 to Sep'21 which shows all the parameters are well within the permissible limit.					
(xii)	Project proponent	Complied.					
	should prepare and regularly update the disaster management plan from time to time.	Disaster Management plan to deal with natural disasters such as cyclone, earthquake, flood/heavy rain and tsunami is in place and implemented. Copy of the same was submitted to MoEF & CC along with half yearly compliance report for the period from Apr – 2016 to Sep – 2016.					
(xiii)	There should be no	Complied.					
	withdrawal of ground water in CRZ area, for this project. The proponent should ensure that as a result of the proposed constructions,	CRZ area for this project. Entire water requirement is sourced from GWIL and desalination plant of APSEZ. Average water consumption for entire APSEZ area is 5.14 MLD during compliance period i.e. Oct'23					
	ingress of saline water into ground water does not take place. Piezometers should be installed for regular monitoring for this purpose at appropriate	To monitor the ground water quality, bore wells are provided at various location in the port and SEZ areas. Third party analysis of the ground water is being carried out twice a year by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. Summary of the same for duration from Oct'23 to Mar'24 is mentioned below. Monitoring Reports are attached as Annexure – 4 for the same.					
	locations on the project site.						
		Number of Samplin			00.51	Averses	
		Parameters pH @ 25 ° C	Unit 	Min 7.45	Max 8.32	Average 7.97	
		Salinity	ppt	0.99	3.44	2.05	
		Oil & Grease	mg/L	BDL(MDL:5.0)	BDL(MDL:5.0)	BDL(MDL:5.0)	
		Hydrocarbon	mg/L	ND*	ND*	ND*	
		Lead as Pb	mg/L	BDL(MDL:0.01)	0.11	0.03	
		Arsenic as As	mg/L	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	
		Nickel as Ni	mg/L	BDL(MDL:0.02)	BDL(MDL:0.02)	BDL(MDL:0.02)	



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on					
No.	clearance letter	31-03-2024					
1101	0.00.000	Total Chromium as Cr	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	
		Cadmium as Cd	mg/L	BDL(MDL:0.003)	0.02	0.005	
		Mercury as Hg	mg/L	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	
		Zinc as Zn	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	
		Copper as Cu	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	
		Iron as Fe mg/L BDL(MDL:0.1) 1.78 0.6					
		Insecticides/Pesticides μg/L Absent					
		Depth of Water Level from Ground Level 1.90 2.20 2.05					
		ND*= Not Detect *BDL - Below Detection *MDL - Minimum Detection Please refer Annexure - 4 for detailed analysis reports. Approx.					
		13.37 Lakh is spent the period FY 2023			•	ctivities during	
(xiv)	The project should not	Complied.	-24 10	OVEIBII AFSEZ	<u>., ////////////////////////////////////</u>		
(xv)	be commissioned till the requisite water supply and electricity to the project are provided by PWD/ Electricity Department. Specific arrangements for rainwater harvesting should be made in the project design and the rain water so harvested should be optimally utilized. Details in this	Construction activity is already completed and the project is in operation phase. Necessary agreement for supply of electricity is done through MPSEZ Utilities Ltd. (MUL). Copies of agreements were submitted to MoEF&CC along with half yearly compliance report for the period from Apr – 2016 to Sep – 2016. Complied. Groundwater recharge cannot be done at the project site since the entire project is in the intertidal / sub tidal areas. Rainwater within project area is managed through storm water drainage.					
	utilized. Details in this regard should be furnished to this Ministry's Regional Office at Bhopal within 3 months.	be township to recharge ground water. Details of the submitted along with half yearly EC compliance report for onal Apr'19 to Sep'19. During FY 2023-24 till Sept'23 Approx				ne same were to for the period tox. 4.58 ML of water table. of operational water tank for / horticulture	



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024						
		However, Adani Foundation – CSR arm of Adani Group has carried out rainwater harvesting activities in the nearby villages for benefit of the locals.						
		Water conservation Projects i.e. Roof Top Rain Water Harvesting, Desilting of Check dams, Bore Well Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up.						
		To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch project "Sanrakshan" in coordination with GUIDE and Sahjeevan.						
		Since 10 years considerable Water Conservation Work carried out in Mundra Taluka. Due to satisfactory rain in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures.						
		Our water conservation work is as below. Water Conservation Projects – Below tabulated Water Conservation Projects completed during Compliance period:						
		Water Conservation Projects:						
		 Swajal Project: Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district. Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared forl the Seven villages. 						
		Block Water conservation Total no. of Total Capacity Name structure Structure Created (CUM)						
		Mundra	Check Dam	23	6,07,332.80			
			Pond Deepening	66	1,89,121.08			
			RRWHS	275	2750]		
			Recharge Borewell	209	-			



From : Oct'23 To : Mar'24

Sr. Conditions as per No. clearance letter	Compliance Status as on 31-03-2024					
	Percolation Well 24 -					
	Earlier Completed Activities/Projects:					
	Sr. No.	Project	Unit	Outcome	Impact	
	1	Check dam Restrengthen ing- Nana Kapaya	1	Water Storage Capacity increased by 48000 Cum	60 + farmer's 120+Acre Area of Agri land can be Irrigated	
	2	Recharge Borewell	21	Reduce Salinity ingress, and preventing water run	150+ farmer's 260+ Acre Area of Agri land for Irrigated	
	3	Pipe Culvert at Checkdam at Bhujpur	1	prevent water runoff into seaside.	35 farmers' 120+Acre Area of Agri land can be Irrigated	
	• Grown lead far Ne vill • Rown who dri • Re eve eve of the the tof sali	ordination with salinity ms. ound recharge activity dividually and 26 pondered in the salinity and construction on water option to direct recharge Borewell 208 New option to direct recharge Borewell 208 New option to direct recharge and construction on water water quantity while pth decreased by 50-star. Ind Pipeline work at Personal process of the construction of the star. Ind Pipeline work at Personal process of the construction of the star. Ind Pipeline work at Personal process of the construction of the star. Ind Pipeline work at Personal process of the salinity water to salinity while the salinity more than 25% in the objective of to process of the salinity water to salinity	y deporties (sound creased ler Aja Capade esting litre sound for the company of North reconstruction for the company of the co	pond deepening er Sujlam Suflam Suflam Suflam Suflam Suflam e in water table and di ka Amrut Mahol City is 12000 Cum 145 Nos. (40 Nostorage which is sople family. O Nos. current FY he soil. Farmers benefitted by till date. Nagmati River coucharged in ground it in Zarpara, Bhu Vistar Zarpara whector area. Ction at Bhujpur o sea and get reche the rainwater and water (the mund water	s. current FY 2022-23) sufficient for one year 2022-23) which is best d in coordination with ald save more than 575 due to which borewell sipur and Navinal Vadinich increase recharge which controlled more targed current year.	



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024
		Please refer Annexure – 2 for full details of CSR activities carried out by Adani Foundation in the Kutch region. Budget for CSR Activity for the the FY 2023-24 is to the tune of INR 953.50 lakh. Out of which, Approx. INR 940.52 lakh is spent during the FY 2023-24.
(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.	Complied. Construction activities are completed in accordance with the prevailing laws.
(xvii)	No product other than those permissible in the coastal Regulation Zone Notification, 1991 should be stored in the Coastal Regulation Zone area.	Complied. APSEZ store only those product / cargo within CRZ area, which are permissible as per Coastal Regulation Zone Notification, 1991 & its amendments.
(i)	Construction of the proposed structures should be undertaken meticulously confirming to the existing Central / local rules and regulations including Coastal Regulation Zone Notification 1991 and its amendments. All the construction designs / drawings relating to the proposed construction activities must have approvals of the concerned State Government Department / Agencies.	Complied. All construction activities are carried out confirming to the existing rules and regulation and as per the CRZ notification. Required details on No Objection Certificate from Gujarat State Pollution Control Board and applicable consent are as provided in Specific Condition No. 2 above.
(ii)	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation, etc.	Complied. Construction activity is completed and the project is in operation phase.



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
		· ·
No.	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. The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper waste water treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise levels etc. must conform to the standards laid down by the competent authorities including the	No construction camps were located in CRZ area. Most workers came from nearby villages however, for others; construction camps were located outside CRZ area. All necessary infrastructure and facilities like mobile toilets, safe drinking water, medical health care etc. were provided. Complied. Liquid Effluent & Sewage - It is being treated at ETP/STP plants outside the CRZ area, treated water from ETP/STP is being used for horticultural purposes. Please refer point no xi of the specific conditions above for further details. All attributes of environment viz. air; water; soil and noise are being regularly analyzed by NABL and MoEF&CC accredited agency M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. Please refer Annexure - 4 for detailed analysis report. Waste Management - APSEZ has adopted 5R concept for environmentally sound management of different types of solid & liquid wastes. Please refer below details about management of each
(iv)	Central / State Pollution Control Board and the Union Ministry of Environment and Forest under The Environment Protection Act, 1986, whichever are more stringent. The proponents should provide for a regular monitoring mechanism	Non-Hazardous Solid Waste: A well-established system for segregation of dry & wet waste is in place. All wet waste (Organic waste) is being segregated & utilized for compost manufacturing and/or biogas generation for cooking purpose. The compost is further used by in house horticulture team for greenbelt development. Whereas dry recyclable waste is being sorted in various categories. Presently manual sorting is being done for sorting of different types of solid waste. Segregated recyclable materials such as Paper, Plastic, Cardboard, PET Bottles, and Glasses, etc. are then sent to respective recycling units, whereas remaining non-recyclable waste is bailed and sent to cement plant (M/s. Ambuja Cement Ltd., Kodinar) for Coprocessing as RDF (Refused Derived Fuel).
	so as to ensure that the treated effluents conform to the prescribed standards.	APSEZ, Mundra is certified for Zero Waste to Landfill management system (ZWTL MS 2020) by TUVRheinland India Pvt. Ltd. (valid up to 31.05.2024). Details of the same were submitted during the last half yearly EC compliance report during period Apr'21 to Sept'21.



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024
	The records of analysis reports must be properly maintained and made available for inspection to the concerned state /central officials during their visits.	 Hazardous & Other Waste: Bio medical waste generated from OHCs and Adani Hospital is being disposed at Common Bio Medical Waste Treatment Facility namely M/s. Distromed Kutch Services Pvt. Ltd., Bhuj. E – Waste is being sold to GPCB registered recyclers namely & Used Batteries are being sold to GPCB registered recyclers namely M/s. Galaxy Recycling, , Rajkot. and Used Batteries are being sold to GPCB registered recyclers namely M/s. Sabnam Enterprise, Kutch and M/s. S K Metal Industries, Rajkot. Solid Hazardous Waste is being disposed through co-processing / incineration through common facility i.e. M/s. Saurashtra Enviro Projects Pvt. Ltd., Bhachau, Safe Enviro Private Limited, Bharuch and/or cement industries of Ambuja Cement Ltd., Kodinar. The Used/Waste Oil is being sold to GPCB authorized recyclers / reprocessors namely M/s. Western India Petro Chem Ind - Bhavnagar, Aviation Corporation - Kutch & Aroma Petrochem - Bhavnagar. It is also being reused within organization for lubrication purpose. Discarded drums / barrels are being sold to authorized decontamination facility i.e. M/s. Jawrawala Petroleum, Ahmedabad. It is also being reused within organization for filling hazardous waste. Solid hazardous waste i.e. Tank bottom sludge is being sold to authorized recycler namely M/s. Mundra Oil Pvt. Ltd., Mundra for recycling. Expired paint materials is being disposed by incineration through common facility i.e. M/s. Saurashtra Enviro Projects Pvt. Ltd., Bhachau. Downgrade chemicals generated from cleaning of storage tanks / pipelines are being sold to authorized solvent recovery facilities namely M/s. Acquire Chemicals, Ankleshwar. Slop Oil received from vessels is treated to separate water and oil particles in Oil Water Separator system. Separated oil from the same is being sold to authorized recycler / reprocessor namely M/s. Western India Petro Chem Ind - Bhavnagar, Aviation Corporation - Kutch & Aroma Petrochem - Bhavna



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024			
140.	ciedidiice leccei	Insulation Material), Downgrade Chemicals, Waste Oil and Expired Paint Material. • Horticulture waste is collected from various green belt areas and it is using for making of manure and manure is being utilizing in horticulture purpose within plant premises. Details of permissions / agreements of hazardous waste authorized vendors were submitted along with pervious half yearly EC Compliance Reports. And there is no further change.			
		(from Oct'2 Type of		fferent typ Quantity	vaste management practice es of wastes at APSEZ: Disposal Method
		Waste Hazardous Waste	Used / Spent / Waste Oil	(MT) 121.93	Sell to registered recycler
			Pig Waste	8.69	Co-processing at cement industries
			Oily Cotton Waste ETP Sludge	68.67 5.68	Co-processing at cement industries
			Discarded	3.42	Co-processing at cement industries Sell to registered recycler
		Non-	Containers / Barrels Wet Waste (Food	500.32	Converted to Manure for
		Hazardous Waste	waste + Organic waste)	500.52	Horticulture use / Biogas for cooking purpose
			STP Sludge	3	Converted to Manure for Horticulture use
			Recyclables Dry Waste / Scrap	1211.94	After recovery sent for recycling / Reuse within premises
			RDF (Non Recyclable Waste)	197.74	Co-processing at cement industries
			Horticulture Waste	318.44	Used for making of manure and utilize for horticulture purpose
		Other Waste	E-Waste Bio Medical Waste	11.6 3.72	Sell to registered recycler To approved CBWTF Site and
		vvasce			registered recyclers
			Battery Waste	11.94	Sell to registered recycler
(v)	In order to carry out the environmental monitoring during the	Complied. Ambient Air	Quality (twice in	a week) a	and Noise (once in a month)
	operational phase of the	monitoring	are being carried o	out by NA	BL and MoEF&CC accredited
	project, the project	agency nam	iely M/s. Unistar En	vironment	and Research Labs Pvt. Ltd.,



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024							
140.	authorities should provide an environmental laboratory well equipped	menti	Summary o		ame for	duration			ar'24 is
	with standard equipment	TOLOT	Parameter	Unit	Min	Max	Average	Perm.]
	and facilities and		AAQM					Limit ^{\$}	_
	qualified manpower to		PM ₁₀	µg/m³	63.95	87.13	78.78	100	
	carry out the testing of		PM _{2.5}	μg/m ³	23.58	38.10	31.82	60	
	various environmental		SO ₂	µg/m³	18.96	33.47	26.17	80	
	parameters.		NO ₂	µg/m³	22.58	38.54	30.55	80	
			Noise	Unit	Leq Min	Leq Max	Leq Ave.	Leq Perm. Limit*	
			Day Time	dB(A)	58.7	69.8	64.91	75	
			Night Time	dB(A)	53.8	64.8	61.05	70 NAAQ standa	rdc 3000
(vi)	The sand dunes and mangroves, if any, on the	Enviro labora qualifi param Appro activit Compl	x. INR 13.3 ies during t	Researd quipped ver to ca 37 Lakh the FY 2	4 for det ch Labs F with sta arry out th is spent 023-24 f	cailed ana Pyt. Ltd., \ ndard eq he testing for all o	alysis repo Vapi has a uipment a g of variou environme APSEZ.	rts. M/s. In environ nd faciliti s environ	Unistar mental es and mental iitoring
(11)	site should not be disturbed in any way.	However and sa	are no sar ver mangro ame has bee	ve conse en subm dition No	ervation pitted.	olan has t	oeen devel	oped by N	NSCSM
(vii)	A copy of the clearance letter will be marked to the concerned Panchayat / local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.	Not ap	oplicable at	present	-				



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
(viii)	The Gujarat Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industries center and Collector's Office / Tehsildar's Office for 30 days.	Not Applicable This condition does not belong to project proponent.
(ix)	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this Ministry's Regional Office at Bhopal and the State Pollution Control Board.	Separate budget for the Environment protection measures is earmarked every year. All environment and horticulture activities are considered at corporate level and budget allocation is done accordingly. No separate bank account is maintained for the same however, all the expenses are recorded in advanced accounting system of the organization. Budget for environmental management measures (including horticulture) for the FY 2023-24 is to the tune of INR 1536.48 lakh. Out of which, Approx. INR 1366.78 lakh are spent during the year FY 2023-24. Detailed breakup of the expenditures for the past 3 years is attached as Annexure – 5 .
(x)	Full support should be extended to the officers of this Ministry's Regional Office at Bhopal and the officers of the Central and State Pollution Control Board 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	Complied. APSEZL is always extending full support to the regulatory authorities during their visit to the project site. Last visit of Regional Office, GPCB was done on 07.03.2022 for Main port and compliance of the same has been submitted vide our letter dated 11.03.2022. Details of the same were submitted as part of compliance report submission for the duration of Oct'21 to Mar'22. Inline to the compliance certification process of Environment Clearance condition of Waterfront Development Plan, RO, MoEF&CC Bhopal had visited the site on 27th & 28th January, 2020 for compliance verification. APSEZ provided all requisite information and documents required by the Regional Officer MoEF&CC). During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed.



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
	protection activities.	Inline to the compliance certification process of Consent to Operates of existing facilities developed under Waterfront Development Plan, RO, GPCB, Gandhidham had visited the site on 17 th March, 2021 for compliance verification. APSEZ provided all requisite information and documents required by the Regional Officer GPCB). During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed.
		Inline to the compliance of MoEF&CC Order dated 18 th September, 2015, Joint Review Committee (JRC) comprising officials from various competent authorities visited the APSEZ, Mundra from 1 st to 3 rd September, 2021 to monitor the progress of implementation of the conditions stipulated in the order. APSEZ provided all requisite information and documents required by the JRC. As per the report received by MoEF&CC vide dated 01.12.2021, there was no noncompliance observed.
		Inline to the compliance certification process for getting Environment Clearance of Waterfront Development Plan, IRO- MoEF&CC Gandhinagar has lastly visited the site on 18 th to 20 th December, 2023 for compliance verification. APSEZ provided all requisite information and documents required by the Regional Officer MoEF&CC). During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed. Copy of submitted action taken report w.r.t. certified compliance is attached as Annexure – 6 .
(xi)	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new one for ensuring environmental protection.	Complied. Construction phase is completed and the project is in operation phase. There is no deviation or alteration in project including implementing agency.
(xii)	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are	Point noted.



From : Oct'23 To : Mar'24

Sr.	Conditions as per	Compliance Status as on
No.	clearance letter	31-03-2024
	not complied with to the	
	satisfaction of this	
(viii)	Ministry.	Doint astad
(xiii)	This Ministry or any other	Point noted.
	competent authority may stipulate any other	
	additional conditions	
	subsequently, if deemed	
	necessary, for	
	environmental	
	protection, which should	
	be complied with.	
(xiv)	The project proponent	Complied
(//	should advertise in at	
	least in two local	
	newspapers widely	
	circulated in the region	
	around the project, one	
	of which should be in the	
	vernacular language of	
	the locality concerned	
	informing that the	
	project has been	
	accorded environmental	
	clearance and copies of	
	clearance letter are	
	available with the State	
	Pollution Control Board	
	and may also be seen at	
	the website of the	
	Ministry of Environment	
	& Forests at http://www.envfor.nic.in.	
	nccp.//www.envior.nic.iii.	
	The advertisement	
	should be made within	
	seven 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	



From : Oct'23 To : Mar'24

Sr. No.	Conditions as per clearance letter	Compliance Status as on 31-03-2024
	Ministry at Bhopal.	
(xv)	The projects proponents should inform regional Office at Bhopal 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. The construction phase is completed and the project is in operation phase.



From : Oct'23 To : Mar'24

Status of the conditions stipulated in Environment Clearance

ANNEXURE – A Half yearly Compliance report of CRZ recommendation



From : Oct'23 To : Mar'24

Status of the conditions stipulated in Environment Clearance

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal – 2) at Mundra Port, Dist. Kutch" issued by DoEF, GOG vide letter no. ENV-10-2005-222-P dated 12th October, 2006.

Sr. No.	Conditions	Compliance Status as on 31.03.2024
Spec	cific Condition	
1	The provision of the CRZ notification of 1991 and subsequent amendments issued from time to time shall be strictly adhered to by the GAPL. No activity in contradiction to the provision of the CRZ Notification shall be carried out by the GAPL.	Complied. Construction activities are completed and the project is in operation phase. All stipulations with respect to the CRZ notification and its subsequent amendments are complied with.
2	All permissions from different Government Departments / agencies shall be obtained by the GAPL before commencing the expansion activities.	Complied. Please refer to specific condition no. 2 of the EC and CRZ clearance above for details upon NOC & CC&A obtained from GPCB. Construction activity is already completed and the project is in operation phase. APSEZ had obtained No Objection Certificate vide GPCB letter No. GPCB/Unit-1/FT-139/11944 dated 27 th April 2005.
3	No Dredging and /or reclamation activity shall be carried out in the CRZ area categorized as CRZ (i) and it shall have to be ensured that the mangrove habitats and other ecologically important and significant areas are not affected due to any of the project activities.	Complied. No dredging or reclamation is carried out in CRZ – 1 (A) area. Capital dredging is completed and only maintenance dredging is being carried out, Please refer to specific condition no. x of the EC and CRZ clearance for mangrove conservation.
4	The dredge material shall be disposed of into predesignated areas duly identified and got approved through the Gujarat Coastal Zone Management Authority for which the company shall	Complied. Construction and capital dredging activities are completed and the project is in operation phase. Impact assessment was done for the same and EIA report was submitted to GCZMA and MoEF&CC based on which the final Environmental and CRZ clearance was granted.



From : Oct'23 To : Mar'24

Sr. No.	Conditions	Compliance Status as on 31.03.2024
	have to make separate application along with proper EIA indicating the exact location of the dredge material disposal area on the CRZ map of the region prepared by the Space Application Center, Ahmedabad, as there exists best mangrove area in and around Bocha and Navinal islands, which requires to be protected.	Detail on study for conservation and monitoring for natural mangrove stands at Mundra is as provided in condition no. 3 above.
5	Massive mangrove plantation activity in at least 1200 ha. Area shall be carried out within a time frame of 5 years commencing from July, 2006 without any delay whatsoever.	Complied. It may be noted that to enhance the marine biodiversity, till date APSEZ has carried out mangrove afforestation in 4140 ha. Area across the coast of Gujarat. Total expenditure for the same till date is INR 1592.8 lakh. Details on mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as Annexure – 1. Please refer condition no. v of specific conditions (EC & CRZ Clearance) for further details.
6	No effluent or sewage shall be discharged into the sea / creek or in the CRZ area and shall be treated to conform the norms prescribed by the Gujarat Pollution Control Board and would be reused/recycled within the plant premises.	Complied. Entire quantity of sewage generated is being treated in designated ETP/STPs and treated sewage is used for gardening. Please refer to specific condition no. xi of the EC and CRZ clearance above for more details.



From : Oct'23 To : Mar'24

Sr.	Conditions	· · · · · · · · · · · · · · · · · · ·	nce Status as on
No. 7	All the recommendation and	Complied.	.03.2024
'	suggestions given by the NIO	Compiled.	
	in its Comprehensive	All the recommenda	ation and suggestions for
	Environment Impact		ection and betterment of
	Assessment report for		ne NIO in its comprehensive EIA
	conservation / protection	7	d. Few examples are provided
	and betterment of		
	environment shall be	Few Marine EIA recomm	endations:
	implemented strictly by the GAPL.	Operational protocols	The company has written the
	O/ (1 L.	and safety procedure	1
		should be printed and	
		freely available to	ISO 14001:2015, ISO
		concerned staff. The	
		employees must be	9001:2015 certifications.
		adequately trained to	ADCEZ has astablished
		inculcate a high level of competence not	
		only in day to day	·
		operations but also	employees.
		during emergency	' '
		situations. Periodic	
		refresher courses	by OSCT India, ICG & Sea Care
		must also be	Marne Services are
		organized to maintain the level of their	·
		competence.	personnel have achieved IMO
			Level 2. Different training
			modules as Oil Spill, Oil Spill
			Equipment, Oil spill
			Management course,
			Notification exercise, Table
			Top, Incident are conducted at different frequency.
		Temporary colonies of	, ,
		workforce should be	· ·
		located sufficiently	
		away from the HTL	labours were residing in the
		with proper sanitation.	nearby villages where all
		Adequate	basic facilities are easily
		arrangement of fuel	
		supply to the workers	residing near the



From : Oct'23 To : Mar'24

Sr.	Conditions	Compliance Status as on		
No.		31.03.2024		
		should be made to discourage them from using mangroves for firewood. Should be made to construction site, infrastructure facilities such as water supply, fuel, sanitation, first aid, ambulance etc. were provided by APSEZ.		
		Adequate vigilance is required to adherence of ships to Marpol protocol and related regulations. Adequate vigilance is During the vessel declaration compliances with respect to Air Pollution and Oil are monitored by the Port Authority. The ships are certified with international certification bodies only after complying with the Marpol protocol.		
		Manual Listing Berthing Policy & Tariff Procedure for conducting ship movement operations in the port area must be available to the concerned staff. Web link concerned staff. Www.adaniports.com/pdfs/PIB_06122013.pdf Port Information Booklet is also made available on web link www.adaniports.com/Port_Operations_Port_Tariffs.aspx		
8	The construction and operational activities shall be carried out in such a way that there is no negative impact on mangroves and other coastal / marine habitat. The construction	Complied. Construction and capital dredging activity is already completed. All operational activities are being carried out in such a way that there are no impacts on the nearby mangroves. Details on mangrove conservation and afforestation are		
	activities and dredging shall be carried out only under the constant supervision of the NIO.	provided against Specific Condition No. 5 above.		
9	The GAPL shall strictly	Complied.		
	ensure that no creeks are blocked due to any activity at Mundra Port and the	As per Marine EIA carried out by NIO in 2008, prominent creek system (main creeks and small branches of creeks)		



From : Oct'23 To : Mar'24

Sr. No.	Conditions	Compliance Status as on 31.03.2024
	mangrove habitats ar neither disturbed no destroyed due to an activity.	in the study region are: (1) Kotdi (2) Baradimata (3) Navinal (4) Bocha (5) Mundra (Oldest port (Juna Bandar)
	octivity.	All above creeks are in existence allowing free flow of water and there is no filling or reclamation of any creek area. APSEZL has so far constructed 19 culverts having total length of 44approx. 1100 m with total cost of INR 20 Crores. Three RCC Bridges have been constructed over Kotdi creek with total length of 230 m and cost of INR 10 Crores. Photographs of the same have already been submitted as part of the compliance for the period of Apr'17 to Sep'17.
		As per the bathymetry study carried out by NCSCM in 2017-18, it can be concluded that there are sufficient depths at the creek mouths and all creek mouths are open allowing flushing of water.
10	The GAPL shall contribut financially for any commo	•
	study or project propose that may be proposed by th Department	As part of the directions given by MoEF&CC vides order dated 18 th Sep, 2015, following studies were conducted.
	environmental management / conservation improvement for the Gulf of Kutch.	for preservation and conservation of mangroves and
		The same was further submitted to GCZMA and MoEF&CC for their examination and recommendation vide (with a copy to MoEF&CC vide letter dated 04.06.2018 & reminder letter vide dated 4 th Jan, 2019). Presentation on the findings of the report was made to GCZMA committee on 4 th October 2019 and the recommendation for the same has been received vide email dtd 22 nd Sept, 2020 with conditions.



From : Oct'23 To : Mar'24

Sr.		Compliance Status as on				
No.	Conditions	31.03.2024				
		As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities with expenditure.				
		 a. Mangrove mapping and monitoring in and around APSEZ – 23.56 Lacs b. Tidal observation in creeks in and around APSEZ – 1.0 				
		 Lacs c. Algal and Prosopis growth monitoring was done if and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 during the FY 2023-24. The algain removal report is attached as Annexure – 3. d. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacturing FY 2023-24, which was incurred by APSEZ which was incurred by APSEZ. 				
		To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked.				
		After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work is 23.60 Lacs (Including Taxes), which was paid by APSEZ.				
		GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration				



From : Oct'23 To : Mar'24

Sr.	Conditions Compliance Status as on				
No.	Conditions	31.03.2024			
		of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23. According to NCSCM Mangrove monitoring study report			
		March 2021, distribution of mangroves in Kotdi, Baradimata, Navinal, Bocha and Khari creeks and also in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019.			
		According to GUIDE Mangrove monitoring study report November 2023, the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%).			



From : Oct'23 To : Mar'24

Sr		Compliance Status as on				
No.	Conditions	31.03.2024				
Sr. No.	Conditions	 Please refer to specific condition no. x of the EC and CRZ clearance for more details w.r.t. Mangrove conservation action plan. 2. A Regional Impact Assessment study to identify impacts of all the existing as well as proposed project activities in Mundra region inline to ToR issued by GCZMA. CIA Report was prepared inline to the ToR by Chola MS and the same was submitted to the GCZMA on 30.04.2018. Details of the same were submitted along with half yearly EC Compliance report for the period Apr'19 to Sep'19. The cost of said study was 1.3 Cr, which was incurred by APSEZ. Presentation on the findings of the report was made to GCZMA committee on 4th October 2019 and after detailed discussion, authority has decided to constitute committee to discuss the details of the report further. Reminder Letter vide dated 07.09.2020 & 10.03.2021 submitted to the GCZMA, Gandhinagar for further directives to present the findings of the CIA report in detail. Details were submitted along with last half yearly compliance report for the period Oct'20 to Mar'21. 				
		 Oct'20 to Mar'21. Presentation done before GCZMA on 31.10.2021 and 16.02.2021 to discuss proposed EMP of CIA study in detail and way forward. GCZMA, Gandhinagar issued a letter to co-ordinate with various departments in the matter of CIA with Gujarat Pollution Control Board as Nodal Agency vide dated 12th July, 2022. APSEZ submitted the letter to GPCB for detailed deliberation and suitable action / way forward vide letter dated 20th July, 2022. Details are -the same were submitted during compliance period Apr'22 to Sep'22. 				
		However, APSEZ is already complying with the Environment Management Plan (applicable to APSEZ) suggested in Cumulative Impact Assessment report. The detailed compliance, applicable to APSEZ is attached as Annexure - 7 .				



From : Oct'23 To : Mar'24

Sr.	. Conditions Compliance Status as on			
No.	Conditions	31.03.2024		
11	The construction debris and/or any other type of waste shall not be disposed	Complied. Construction activity is already completed. Project is in		
	of into the sea, creek or in the CRZ areas. The debris shall be removed from the construction site immediately after the construction is over.	operation phase.		
12	The construction camp shall be located outside the CRZ area and the construction labour shall be provided the	Complied. The construction activity of said project is already completed. Project is in operation phase.		
	necessary amenities, including sanitation, water supply & fuel and it shall be ensured that the	No construction camps were located in CRZ area. Most workers came from nearby villages however, for others; construction camps were located outside CRZ area.		
	environmental conditions are not deterioted by the construction labours.	All necessary infrastructure and facilities like mobile toilets, safe drinking water, medical health care etc. were provided.		
13	The GAPL shall prepare and regularly update their local	Complied.		
	Oil Spill Contingency and Disaster Management Plan in for their all activities in Mundra Port consonance with the National Oil Spill and Disaster Contingency	Oil spill contingency response plan is being updated on regular basis and the same was last updated on 31.07.2022 is in place and implemented. The Oil spill contingency response plan same were submitted during compliance period Apr'22 to Sep'22.		
	Plan and shall submit the same to this department after having it vetted through Indian Coast Guard.	"SWACHCHH SAMUDRA-NW 2023" was carried out by		
		For responding to oil spill, the Indian Coast Guard has developed the National Oil Spill Disaster Contingency Plan NOSDCP which has the approval of the Committee		



From : Oct'23 To : Mar'24

_		
Sr.	Conditions	Compliance Status as on
No.		31.03.2024
		of Secretaries and has been in operation since 1996. Oil
		Spill Contingency Response Plan (OSCRP) prepared by
		APSEZ is in accordance with the NOSDCP.
		Disaster Management Plan is updated regularly and the
		updated DMP was submitted to the MoEF & CC along
		with half yearly compliance report Apr – 2016 to Sep –
		2016.
		0 67 5
		On Site Emergency Response Plan and Crisis
		Management Plan is in place and implemented. The
		updated (Aug'23) Onsite emergency plan was submitted
1.4	The Oviersh Marihima Daned	during the compliance period Apr'23 to Sep'23.
14	The Gujarat Maritime Board shall expedite for the Vessel	Point noted.
	Traffic Management System	APSEZ is practicing well defined traffic control
	for the Gulf of Kutch and	procedure.
	would work out the modus	procedure.
	operandi for cost sharing by	A VTMS service for Gulf of Kutch is operated by
	the different players in the	Directorate General of Lighthouses and Lightships
	Gulf indicating the GAPL.	(DGLL), Govt. of India.
	The GAPL shall contribute	(BOLL), GOVE. OF MIGIG.
	for the same as may be	Marine Control of APSEZ provides traffic update to
	decided by the Gujarat	vessels in Mundra Port Limit on VHF Channel- 77.
	Marine Board or any other	
	competent authority for this	Arrival and departure information before arrival and
	purpose.	departure respectively in Gulf of Kutch is provided to
		VTMS information cell through agent or by directly
		sending mail to vtsmanagergulfofkutch@yahoo.com and
		vtsgok@yahoo.com.
		Mundra port has subscribed and taking VTMS feed from
		Kandla from link <u>www.vts.gov.in</u>
15	The GAPL shall bear the cost	Complied
	of the external agency that	
	may be appointed by this	Please refer to condition no. 10 of the CRZ
	Department for supervision /	recommendations above for details upon cost incurred
	monitoring of proposed	for various proposed studies and activities.
	activities and the	
	environmental impacts of	
0	the proposed activities.	
Gene	eral Condition	



From : Oct'23 To : Mar'24

Sr.	r. Conditions Compliance Status as on					
No.	Conditions	31.03.2024				
16	The ground water shall not be tapped by the GAPL to meet with the water requirement in any case.	APSEZ does not draw any ground water for the water requirement. Present source of water for various project activities is desalination plant of APSEZ and/or Gujarat Water Infrastructure Limited (GWIL). Average water consumption for entire APSEZ area is 5.14 MLD during compliance period i.e. Oct'23 to Mar'24.				
17	The GAPL shall take up massive greenbelt development activities in consultation with Forest and Environment Department.	Complied. APSEZ has consulted Gujarat Institute of Desert Ecology (GUIDE) as they are one of the authorized agencies of Dept. of Forest & Env., Govt. of Gujarat for carrying out mangrove afforestation. Please refer condition no. v of specific conditions (EC & CRZ Clearance) for further details.				
18	The GAPL shall have to contribute financially for taking up the socioeconomic upliftment activities in this region in consultation with the Forests and Environment Department and the District Collector / District Development officer. A separate budget shall be earmarked for the purpose of	APSEZ performs a large-scale socio-economic upliftment program and shares with FOKIA (Federation of Kutch Industries Association) chaired by District Collector quarterly. APSEZL have provided necessary facilities including health care, education, sanitation, livelihood, drinking water & other infrastructural support to Local community in the region. For further information related to the CRS activities being carried out by Adani Foundation in				
	socio-economic upliftment activities and details thereof shall be furnished to this department as well as the MoEF&CC, GOI from time to time. The details with respect to the expenditure from this budget head shall also be furnished on annual basis.	Mundra region, please refer to specific condition no. 7 of the EC and CRZ clearance above.				
20	A separate environment management cell with	Complied.				



From : Oct'23 To : Mar'24

Sr. No.	Conditions			Comp	liance : 31.03.		as on		
	qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	APSEZL has a well-structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan at site. Site environment team direct report to site Chief Executive Officer (CEO) and the CEO directly reports to the top management. Updated Environment Management Cell Organogram is attached as Annexure – 9 .							
21	Environmental Post Project Monitoring report indicating the changes, if any, with respect to the baseline environmental quality in the coastal and marine environment shall be submitted every year by the GAPL to this department as well as to the MoEF&CC, GOI.	Complied. The quality of treated effluent, emission and noise level is being monitored regularly by a MoEF&CC/NABL accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd. Monitoring results are confirming to the applicable norms.							
					Surface			Bottom	
		Parame ter	Unit	Min	Max	Avera ge	Min	Max	Avera ge
		ρН		7.99	8.24	8.17	7.86	8.12	8.01
		TSS	mg/L	98	152	126.91	78	128	106.11
		BOD (3 Days @ 27 °C)	mg/L	2.2	3.5	3.02	BDL(M DL:1.0)	BDL(M DL:1.0	BDL(M DL:1.0)
		DO	mg/L	5.88	6.35	6.09	5.68	6.25	5.91
		Salinity	ppt	35.24	38.88	36.39	36.15	37.38	37.06
		TDS	mg/L	35864	36610	36225	34500	37540	37077
								ow Detect um Detect	
		Please r	efer A	nnexur	e - 4 f				
		Please refer Annexure – 4 for detailed analysis reports. Approx. INR 13.37 Lakh is spent for all environmental							
		monitoring activities during the compliance period i.e. FY							
		2023-24 for overall APSEZ, Mundra.							
22	The GAPL shall have to								
	contribute financially to support the National Green Corps Scheme being implemented in Gujarat by the GEER foundation,	Complied. Necessary contribution if require will be provided on hearing from GEER foundation to support NGC scheme.							



From : Oct'23 To : Mar'24

Sr. No.	Conditions	Compliance Status as on 31.03.2024
	Gandhinagar in consultation	
	with Forests and	
	Environment Department.	
23	A six monthly report of	Complied.
	compliance of the conditions	Civ. AA - a black - a - sign - a - a - a - a - a - a - a - a - a -
	mentioned in this letter shall	Six Monthly environment clearance compliance report is
	have to be furnished by the GAPL on a regular basis to	being submitted regularly to the concerned authorities.
	this department without fail.	Compliance report of EC conditions is uploaded regularly.
	cins department without ran.	A soft copy of last compliance report including results of
		monitoring data for the period of Oct'22 to Mar'23 was
		submitted through e-mail to Regional Office of
		Integrated Regional Office (IRO), MoEF&CC @
		Gandhinagar, Zonal Office of CPCB @ Baroda, GPCB @
		Gandhinagar & Gandhidham and Dept. of Forests & Env.,
		Gandhinagar on dated 29.11.2023. Copy of the same is
		also available on our web site
		https://www.adaniports.com /ports-downloads. Please refer below for the details regarding past six compliance
		submissions.
		Sr. No. Compliance period Date of submission
		1 Oct'20 to Mar'21 25.05.2021
		2 Apr'21 to Sep'21 30.11.2021
		3 Oct'21 to Mar'22 30.05.2022
		4 Apr'22 to Sep'22 30.11.2022 5 Oct'22 to Mar'23 30.05.2023
		5 Oct'22 to Mar'23 30.05.2023 6 Apr'23 to Sep'23 29.11.2023
24	Any other condition that may	Complied.
27	be stipulated by this	· ·
	department from time to	protection / management purpose will be complied by
	time for environment	APSEZ.
	protection / management	
	purpose shall also have to be	
	complied with by the GAPL.	

Annexure – 1



Details of Greenbelt Development at APSEZ, Mundra

	Total Green Zone Detail till Up to March 2024							
LOCATION	Area (In Ha.)	Trees (Nos.)	Palm (Nos.)	Shrubs (SQM)	Lawn (SQM)			
SV COLONY	72.29	34920.00	7962.00	69696.00	100646.00			
PORT & NON SEZ	81.61	149359.00	19220.00	75061.78	62966.38			
SEZ	115.70	226120.00	20489.00	220583.60	28162.03			
MITAP	2.47	8113.00	33.00	3340.00	4036.00			
WEST PORT	104.29	248074.00	66816.00	24112.00	16369.00			
AGRI PARK	8.94	17244.00	1332.00	5400.00	2121.44			
SOUTH PORT	14.45	27530.00	3470.00	3882.00	3327.26			
Samundra Township	58.26	63722.00	11834.00	23908.89	47520.07			
Productive Farming (Vadala Farm)	0.00	0.00	0.00	0.00	0.00			
TOTAL (APSEZL)	457.99	775082.00	131156.00	425984.27	265148.18			
	906238.00							



<u>Details of Mangrove Afforestation done by APSEZ</u>

SI. no.	Location	District	Area (Ha)	Duration	Species	Implementation agency	
1	Mundra Port	Kutch	24	-	Avicennia marina	Dr. Maity, Mangrove consultant of India	
2	Mundra Port	Kutch	25	-	Avicennia marina	Dr. Maity, Mangrove consultant of India	
3	Luni/Hamirmora (Mundra,)	Kutch	160.8	2007 - 2015	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GUIDE, Bhuj	
4	Kukadsar (Mundra)	Kutch	66.5	2012 - 2014	Avicennia marina	GUIDE, Bhuj	
5	Forest Area (Mundra)	Kutch	298	2011 - 2013	Avicennia marina	Forest Dept, Bhuj	
6	Jangi Village (Bhachau)	Kutch	50	2012 - 2014	Avicennia marina	GUIDE, Bhuj	
7	Jakhau Village (Abdasa)	Kutch	310.6	2007-08 & 2011-13	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GUIDE, Bhuj	
8	Sat Saida Bet	Kutch	255	2014-15 & 2016-17	Avicennia marina & Biodiversity	GUIDE, Bhuj	
9	Dandi Village	Navsari	800	2006 - 2011	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GEC, Gandhinagar	
10	Talaja Village	Bhavnagar	50	2011-12	Avicennia marina	Forest Dept, Talaja	
11	Narmada Village	Bhavnagar	250	2014 - 2015	Avicennia marina	GEC, Gandhinagar	
12	Malpur Village	Bharuch	200	2012-14	Avicennia marina	SAVE, Ahmedabad	
13	Kantiyajal Village	Bharuch	50	2014-15	Avicennia marina	SAVE, Ahmedabad	
14	Devla Village	Bharuch	150	210-16	Avicennia marina	SAVE, Ahmedabad	
15	Village Tala Talav (Khambhat)	Anand	100	2015 - 2016	Avicennia marina	SAVE, Ahmedabad	
16	Village Tala Talav (Khambhat)	Anand	38	2015 - 2016	Avicennia marina	GEC, Gandhinagar	
17	Aliya Bet, Village Katpor (Hansot)	Bharuch	62	2017-18	Avicennia marina & Rhizophora spp.	GEC, Gandhinagar	
18	Kukadsar- (Bhadeswar- Mundra)	Kutch	250	2021-22	Avicennia marina	Shreeji Enterprise, Amreli	
19	Kukadsar- (Bhadeswar- Mundra)	Kutch	750	2022-23	Avicennia marina	Shreeji Enterprise, Amreli	
20	Kukadsar- (Bhadeswar- Mundra)	Kutch	250	2023-24	Avicennia marina	Shreeji Enterprise, Amreli	
	Total		4140				

Annexure – 2



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



Our Journey by

Mr. Rakshit Shah, Executive Director APSEZ

From Pledge to Progress Further,

I am happy to share that Adani Foundation continued to make significant strides to elevate the sustainability of our CSR operations. This year We prioritize capacity building and awareness on ESG, as evidenced in 8 employees completing training modules that raise awareness about best practices in ESG. We raised the bar through our environmental initiatives, Water Conservation, Terrestrial and Coastal Biodiversity. We are also spreading awareness for reducing paper usage, Reducing emissions through firewood cooking, diesel free village drive at Surat district and increasing the green cover by planting trees. We enhanced the impact of our social initiatives by empowering women through Enhancing skill and Livelihood, increasing gender diversity and improving inclusivity. We are working for socio economic upliftment marginalized community i.e. Primitive Tribes at Bharuch and Surat district and fisherman at Kutchh district.

Our commitment to sustainable CSR operations has earned the trust of our stakeholders and contributed to our success. It has also helped us build a more resilient, sustainable and profitable business. I thank our Adani Foundation Team for their continued support and dedication to our commitment to sustainable CSR practices, as we remain focused on driving long-term value for our stakeholders, and the communities in which we operate.

With best wishes,

Rakshit Shah

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Development

CSR KUTCH

The Adani group plans to invest over two lakh crore rupees in Kutch over the next five years, creating around 100,000 jobs. The investment is expected to contribute to a Vikshit Gujarat, with the group constructing a world-largest green energy park in Khavda, Kutch, and expanding its green supply chain. Kutch Copper Ltd, a subsidiary of Adani Enterprises Ltd (AEL), the world's largest single-location copper manufacturing plant at Mundra in Gujarat, will start operations of the first phase by March-end and full-scale 1 million tonnes capacity by FY29. Mundra Port, Adani Power Plant, Adani Wilmar and Mundra Solar is reached to remarkable development! Adani Foundation is instrumental in Mundra from 25 years but for last 3 years, started CSR at Khavda, Nakhtranana, Lakhpat and Abdasa Taluka in Community health care, Women Empowerment and Water conservation core.



Demographic Details

Block	Villages	No. of HHs	Population
Mundra	61 Village	35192	153179
Anjar	6 Villages	5350	28500
Nakhtrana	22 Villages	14093	36373
Lakhpat	20 Villages	8092	18976
Khavda	22 Villages	8450	35200
Rapar	3 Villages	345	12450
Mandvi	8 Villages	2780	14560
Abdasa	12 Villages	2415	9660

- 1. Adani Ports and SEZ Limited
- 2. Adani Power Mundra Limited
- 3. Adani Wilmar Limited
- 4. Adani Wilmar Caster Limited
- 5. Kutchh Copper Limited
- 6. Mundra Solar PV Ltd
- 7. Mundra Petrochem Ltd
- 8. Adani Kandla Bulk Terminal Private Limited
- 9. Adani Solar Limited Bitta, Abdasa
- 10. Adani Green Energy Limited Nakhatrana
- 11. Adani Green Energy Limited Khavda
- 12. Adani Energy Solution Limited Rapar

Environment Sustainability



Water Conservation



Soil Conservation



Terrestrial Biodiversity



Coastal Biodiversity











Environment Sustainability

As per UN Sustainable Development Goal, 13 - The environment and biodiversity serve as the lifeblood of our planet, playing a crucial role in maintaining ecological balance and sustaining life in all its diverse forms. Preserving them is more than a necessity; it is a shared responsibility to secure the health and well-being of both present and future generations. Adani Foundation embodies this commitment through its varied environmental projects. These range from extensive tree plantation and mangrove restoration to innovative biogas provision, drip irrigation, Plastic Free Drive, groundwater recharging, and water conservation.



Action to environment Sustainability



Swajal Project



AIM:

The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district.



Vision:

Devising eco-friendly and cost-efficient methods of water body rejuvenation, the project works

- 1. To revive existing water resources,
- Plan sustainable infrastructure for protection of natural water bodies
- Improve ecological conditions around the area.



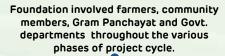
Decisions backed by scientific evidence

3

A thorough study of the topography & watershed delineation and primary water-related data was gathered through experts with involvement of the government to identify water bodies and the proposed project sites



Process:



Stakeholder's participation



Participatory Rural Appraisal approach backed by triangulated baseline assessment data was used to implement local solutions for resolving issues pertaining to water (Quantity and Quality)

2

Participatory Rural Appraisal Approach



Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared for all the Seven villages.

To prepare water security plan following method has been adopted:

- Overview of the Project villages through primary field visit and reference of prestudied and reports.
- 2. Survey of existing surface water resources to assess the potential and further scope of development.
- Groundwater monitoring in term of storage and quality assessment.
- 4. Water balance calculation considering water supply and demand estimation.
- Integrated water resource development and management plan for each village.

Swajal in Kutch – Block wise:

Sr. No.	Block Name	Water conservation structure	Total no. of Structure	Total Capacity Created (CUM)
1	Mundra	Check Dam	23	6,07,332.80
		Pond Deepening	66	1,89,121.08
		RRWHS	275	2750
		Percolation Well	24	-
		Bore & Well Recharge	209	-
2	Dayapar	Pond Deepening	2	9,200
		Check Dam	1	18,000.00
3	Khavda	Pond Deepening	1	2,000
		Check Dam	1	16,000.00
4	Abdasa	Pond Deepening	1	22,000
5	Lakhpat	Check Dam	1	21,237.64

Swajal - Impact:



28,000 farmers Benefited



7.2% Increase Revenue



17% TDS reduced



Rs. 1150 Reduce in health expenses/month



Total Water capacity ← increased

8,87,641 Cum = 31.35 MCFT

Water Conservation Structure:













Soil Conservation

1250 Farmers

 Awareness Sessions at Village Level: Spreading awareness on natural farming benefits and address their concerns.

07 exposure

· Hands-On Training & Exposures: Arranged Workshop and training to emphasizing on real-world techniques.

857 Farmers

Link with Government Scheme: facilitation of govt. Cow Nurturing scheme to promote ecofriendly farming practices.

258 Gobardhan

•Bio-gas Support: Link with Gov Gobar Dhan Biogas Unit Nutrient-rich slurry serves as an essential organic fertilizer for natural farming

35 Farmers

 Natural Farming Certification **Process** to obtain natural farming certification through the GOPCA for the 35 Farmers who are Members of Rai shakti Sahakrai Mandali.

Rs.9.88 Lacs RG

 Marketing Assistance: Provide platforms and resources ensuring fair prices and broader consumer reach.

Natural Farming

Natural farming is an urgent need of the hour, We have initiated a comprehensive approach to promote natural farming practices through a variety of activities aiming to minimize pesticides and chemicals uses lead to produce, nutritious, chemical-free produce which is benefitting both farmers and consumers by providing healthier and more sustainable food options as well as plays significant role to flourishing environment and balanced ecosystem.



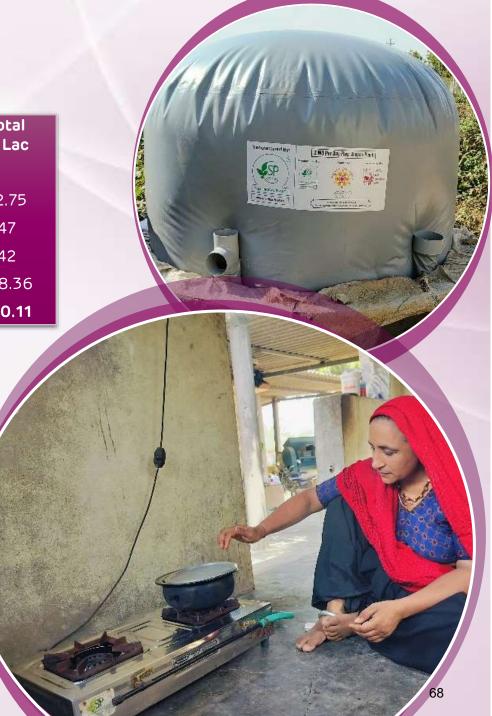
Home Biogas

Phase	unit	Unit Cost In Rs.	AF Suppor in Lac	t Beneficiaries Contribution in Lac	Gov. Convergence in Lac	Total in Lac
Phase -1	125	23200	29	3.75	0	32.75
Phase -2	100	42000	42.0	5.0	0	47
Phase -3	100	42000	0	5.0	37	42
Phase -4	258	42000	6.45	6.45	95.46	108.36
Total	583	149200	77.45	20.2	132.46	230.11

Home biogas systems, adept at converting organic waste into renewable energy, present a sustainable and eco-friendly solution for cooking. We have started this project in 2020, with farmers contributing 10% towards the cost, that persisted till 2022. Since then, we have scaled our initiative by aligning with government home biogas schemes to amplify the reach and adoption of this eco-friendly technology in wider rural regions.

The deployment of home biogas has been particularly transformative for women, offering a healthier, smoke-free cooking environment reducing greenhouse gas emissions.

Current year we process to facilitate 258 Gobardhan unit through Gov.





- To promote natural farming, the Adani Foundation and Shri Rajshakti Natural Farming Cooperative Society Ltd. are making numerous efforts in kutch. In our endeavor to motivate and raise awareness among farmers, we recently organized a significant event inviting the Governor of Gujarat, Shri Acharya Devrath, Mr. V.S. Gadhavi, Executive Director of the Adani Foundation, and other distinguished guests. Addressing a gathering of 2000 farmers, Shri Acharya Devvrat aimed to inspire and enlighten them about the benefits and importance of adopting natural farming practices.
- "The foundation of people's well-being and health lies in the health of the land. Natural farming is the only way for this," said Acharya Devvratji, emphasizing that microscopic organisms in the soil nourish crops with essential elements, providing healthy and nutritious food. Devvratji highlighted the harmful effects of chemical fertilizers and pesticides on the land and urged farmers to adopt natural farming practices.



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Revival of Date Palm destroyed by BIPORJOY Cyclone



Dates Tree -Restoration

Biparjoy cyclone has damaged huge number plants of Dates, Mango, Sapota. In coordination with Kutch Crop Services and Krishi Vigyan Kendra – more than 615 plants are restored till date and continue. This initiative has created trust and credibility in farmers of Mundra. As for one date tree Average revenue is 25000 INR – this initiative revenue generation will be 1.53 Cr per year which is remarkable.







Go Green – Horticulture Saplings Distribution to Farmers



Objective:

In alignment with a vision for sustainable agriculture and environmental stewardship, MPL aims to empower local farmers and contribute to larger environmental goals. The initiative focuses on providing financial assistance to 200 farmers for cultivating horticultural saplings.



- Environmental sustainability
- Carbon sequestration
- Soil conservation
- Combat climate change
- A healthier ecosystem
- Contributing to a cleaner atmosphere

Road Map:















Aim-Financial aid to 200 Farmers Partnership with KKPC (Kutch Kalpataru Producer Company)

Meeting with Farmers Farmer's field assessment visit

Verification of Farmers legal documents

Registration Process

Rs.10,000 to each farmers

Quarterly follow-up of the saplings

^{*} Funded by -Mundra Petro chem Limited

Go Green – Horticulture Saplings Distribution to Farmers

Carbon sequestration Value:

Supported the plantation of 53,136 fruit brearing trees.
These plants will sequestrate
1,465.00 MT of CO2 after 5 years as per calculation in Mundra Petrochem

Name of Fruit bearing Tree	Co2 Sequ Kg	No of Plants	Total Co2 Seq - Kg
Mango	41.47	33,780	1,4,00,856.6
Custard Apple	4	1,300	5,200
Dates	12.8	15,856	2,02,956.8
Coconut	26.87	2,200	59,114
Total		53,136	1,465,170.6



villages

Event: Horticulture Sapling Distribution and No Plastic Drive

Noteworthy event unfolded at the serene Sonal Mata Ji Temple in Vakrai - Moti Bhujpur, organized by Adani Foundation and Adani Petrochemicals. The focus of this gathering was giving away horticulture saplings through financial assistance, a symbolic step towards fostering a cleaner and sustainable environment.

Our esteemed guests for this event include R N Parmar, RO GPCB; Javed Sindhi, Mamlatdar Mundra; Vinay Kumar Singh, Head ESG MPL; Bhagwat Swaroop Sharma, Head Environment; Panktiben Shah, Head CSR Gujarat; Vishnu Patidar, ESG expert; and Laxmiben Ninjan, Sarpanch Bhujpur.

Mr. R.N. Parmar addressed the imperative need for cultivating a green and healthy environment for current and future generations. Additionally, he praised the efforts of Adani Petrochemicals and Adani Foundation, emphasizing the importance of sustainable practices.

The primary objective of the event was to extend financial support to 200 farmers, each receiving Rs. 10,000, a transaction gracefully facilitated by Mr. R. N. Parmar, virtually transferring funds to their bank accounts, funded by Adani Petrochemicals. Presently, MPL is aiding over 300 farmers in planting a total of 53,136 fruit-bearing plants.

The event further shone a spotlight on past beneficiaries of drip irrigation and tissue dates distribution, who took the stage to share their experiences and express gratitude for the transformative support received. Adding a touch of artistry, small Utthan students staged a captivating environment protection act,.

As the event wrapped up, a strong commitment was made to keep supporting and assessing efforts for a greener environment, contributing to carbon sequestration.





** Terrestrial Biodiversity

Vruksh Se Vikas - Massive Drive

Since 2014, we has embarked a transformative journey to execute a wide range of tree plantation drive in collaborating with local communities and forestry departments.

- 1. Miyawaki Forest Development: Native species planation In the 2-acre area at Nana Kapaya village creating a flourishing mini-forest with 5,508 trees.
- 2. "Adani Van": Barren spaces were transformed into lush green havens through our massive public plantation drives. One notable example is the Bhupur Visri Mata Temple, where 23,000 trees were planted. Second example Momai Mata temple, Desalpar 10,000 trees were planted. Third Example Matiyadada at Bhujpur 8000 trees were planted. Fourth example Rasha pir, Dhrub 2-acre 5000 tree planted. Thus, in PPP Model 4 Adani Van were developed where 46,000 trees were planted.

Prakruti Rath: This initiative goes beyond just planting trees; it is about fostering a sense of responsibility towards our environment. Through 46,750 sapling distribution to individuals, we have empowered communities to take ownership of their surroundings, leading to a heightened consciousness about the environment's significance.

Till the date Total 1.49 Lac tree plantation have been done that has enriched the local ecosystem and significantly contributed to carbon sequestration

Completed the plantation of 1,49,889 trees. These plants will sequestrate 3180.00 MT of CO2 after 5 years as per calculation in Mundra Petrochem villages

1.49 Lac tree plantation









Coastal Biodiversity

Mangrove Biodiversity



In 2010, we initiated a mangrove plantation project at Luni coastal belt, ultimately leading to 162 hectares of dense mangrove forests. Subsequently, we expanded our efforts by planning and implementing a multi-species mangrove plantation across an additional 20 hectares. These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and

migratory bird species, enriching the local ecosystem..

Since PhD scholars and students frequently visit this area for study, we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist

	Mangrove Plantation Work Detail			
Sr. No	Year	Number	Person days	Remarks
1	2011-12	50000	3000	
2	2012-13	125000	6943	
3	2013-14	60000	1480	
4	2014-15	125000	6501	
5	2015-16	65000	3533	
6	2016-17	20000	3125	
7	2017-18	100000	3666	
8	2018-19		7539	Algal Removal work
9	2019-20		6261	Algal Removal work
10	2020-21		4830	Algal Removal work
11	2021-22	97000	5200	
12	2022-23	100000	4445	
	Total	742000	56523	









Plastic Free Drive

Objective:

The central aim of the Plastic-Free Drive is to empower and enlighten students as key agents of change, enabling them to disseminate awareness and instill the practice of reducing single-use plastics within their community.

1. Educate: Spread awareness about the harmful effects of plastic on the environment, marine life, soil health, and human well-being.

2.Engage: Mobilize community members, especially the youth and family members to actively participate in plastic waste reduction activities.

3.Implement: Introduce sustainable alternatives to ensure proper disposal and recycling. As of now we supply plastic to one NGO to preprare Garden benches. .

Outreach:-

12000 Students of Primary Schools.990 Students of Secondary Schools of Mundra Block.











Education: Utthan

Project Utthan, an innovative initiative by the Adani Foundation by Mou with DEO, which aligns seamlessly with both the National Education Policy 2020 and the Sustainable Development Goal. By adopting government primary schools, Utthan fostering community engagement, it aims to create model schools that empower students and elevate education quality. By providing dedicated teachers and essential facilities, Utthan strive to enhance the Gunotsav results of primary schools and improve the Board results of 10th standard students. Project Utthan takes the lead in initiating various cocurricular activities to ensure the holistic development of students. Through capacity-building programs and collaborative efforts, we envision a future where every child receives holistic and empowering education, paving the way for a brighter tomorrow.





Utthan Initiative	SDG 4 NEP 2020		Benefited
Strengthening government Primary & High schools	Target 4.1.0 suggest to contributes to providing quality education for all.	4.1 and 4.2 - improving primary education.	31 Villages, 77 Schools, 12000+ Students, Efforts for Increase Gunotsav result & Board result.
Appointing an Utthan sahayak	Target 4.1.1 suggest to support students.	5.2 - focus on capacity building and support systems	70+ Utthan sahayak works as catalyst. Students: Teacher ration decrease.
Mainstreamed Progressive learner	Target 4.6.1 suggest fixed level of proficiency in functional	2.1 and 2.2 Mainstream students from progressive learners	Assessment : 6982, Progressive learners : 2541 Mainstreamed : 1278.
Providing required resources and facilities	Target 4.2.1 Suggest the necessary resources for effective learning.	7.4 and 7.5 emphasis on infrastructure development and resource availability.	Sports Kit, Music Kit, TLM Kit, Science Kit provided in schools.
Enabling joyful learning spaces	Target 5.1.2 Suggest positive and engaging learning environments	5.9 & vision of NEP suggest experiential learning to encourages creativity.	Smart Class with Navneet software+ Bala painting + Activity base learning.
Adani Students Development Center (ASDC)	Target 6.1.2 Suggest preparing students for future opportunities.	20.1 and 20.2 NEP's It resonates with the NEP's focus on holistic development and skill-building.	2 Adani Evening Education Center, 5 Adani Competitive Coaching Center, 5 Adani English Coaching Center
Introducing English as a Third Language	Target 5.1.2 Suggest other language learning. 4.13 emphasizes multilingualism and language learning.		Students: 5000+ Classes 1-4, Curriculum, Every Friday morning assembly in English



Utthan Initiative	SDG 4	NEP 2020	Benefited
Enhancing Reading Habits	Target 7.1.2 Promote literacy and a love for reading.	2.8 Supports the NEP's goal of enhancing reading & comprehension skills.	Redding corner, 1000+ Oasis workshop, 162780 Books CICO, 100+ Schools partner from 10+ Country in International school library month(ISLM)
IT on Wheels	Target 4.2.3 Promotes Digital literacy.	5.9 focuses on integrating technology in education.	2 dedicative van, 2 IT instructors, 55 laptops, 34 schools, Empowering 4170 students , 200+ High schools' students
Promote sports	Target 6.1.2 Suggest preparing students for future opportunities	4.8 promoting physical fitness and sports.	6 Students selected in District level sports school, Inspiring more 100 Students. Khel Maha Kumbh : 2000+
Teachers' & Sahayak Capacity Building	Target 4 C Suggest to qualified teachers by cooperation	2.6 emphasizing teacher training and professional development.	3500+ Hours Capacity building program + Webinar + Diksha + 10 full days training.
Formation of Eco Club	Target 5.1.2 Suggest to increase awareness of Environment.	4.44 Promoting environmental awareness.	Plastic free village workshop : 1250+ Students, Environment Awareness program & Tree plantation in schools.
Day Celebrations & Collaboration with GoG	Target 4.2.1 Suggest to inspire Holistic development of students	7.1 children of all ages should learn about arts, sports and careers.	Summer Camp: 6000+ Students Diwali Mela: 5500+ Students. 1400+ Parents participated.
Mothers as catalyst in transformation	Target 4.1.1 Suggest to inspire parents in growth of students	Aligned with NEP's Principles. Page No.6	Mothers meet: 700+ Mothers Joined: 15000+ this year. (Meetings + Home Visit)
Strengthening Stakeholders	Target 4.1.0 suggest to work	Aligned with NEP's Preface, Page No. 4	Support in Taluka, District & state level various initiative with DIRT, BRC, Strengthening SMC Committee.



Utthan Marks 5-Year Milestone

Celebrating the extraordinary five-year journey of Utthan in Mundra, we hosted a remarkable event graced by the presence of distinguished individuals. Among them, the Director of Primary Education, Gujarat, Mr. M. I. Joshi, brought with him not only wisdom but also a sense of grace that elevated the occasion. Standing alongside were the District Development Officer, Mr. Prajapati, and the District Primary Education Officer, Mr. Sanjay Parmar.

Yet, beyond the notable dignitaries, the event witnessed the convergence of more than 2000 students, 416 school principals and teachers, and 145 School Management Committee Members. Their collective presence bore witness to a significant milestone in the enduring journey of Utthan, leaving an indelible mark on our hearts and memories.

In this gracious event, we commend the outstanding contributions of the Principal, Utthan Sahayak, and students who have excelled over the past five years.

During the event, the children showcased their incredible talents. They enthralled the audience with mesmerizing performances, including folk songs, classical dances, and vibrant folk Garba dance. The young talents also graced the stage with captivating dramas and much more.

The event was a true celebration of their skills and abilities, and it was executed with utmost dedication and excellence.



*Funded by - Kutch Copper Limited 26



Mothers meet is special intervention of Utthan, This year, more than 15000+ Mothe's Joined in 700+ Mothers meet. Some of the challenges and impact of this initiative through out the year is as bellow:





15,000+ mother participated

Challenge

Father not interested in meeting

Community not engaged with Schools

Mothers were not Contribute to Children Growth

Mothers Don't know about their own Children in details.

Some Mothers don't want to came every time

Initiative

Engage mothers in meeting

Mother's Meeting once a month

shared tips to support their learning at home

Discussed the progress and challenges of each child

Started Activities & Fun game for Mothers

Impact

More mothers engaged

Regular engagement of the mothers

Mothers started checking homework

Increase connection of Mothers & Students

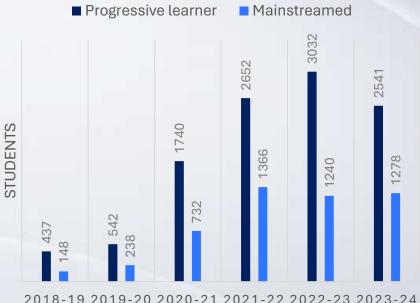
Mothers started came regularly.

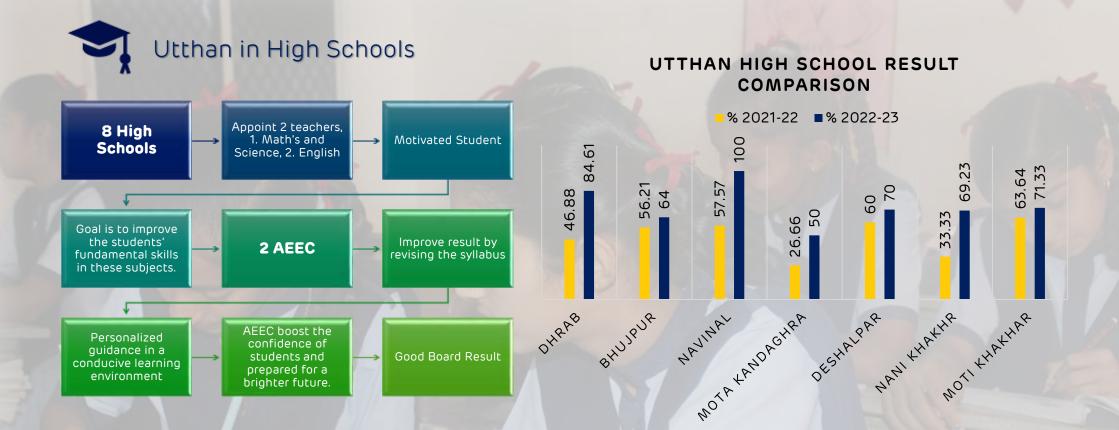


Mainstreaming Progressive learners

Utthan, through its assessment, has identified over 2541 Progressive students out of 6459 from 3rd to 7th standard. Among them, 1278 students have been successfully mainstreamed. The key role played by Utthan Sahayak has been instrumental in achieving this success. Utthan's approach includes a customized syllabus, activity-based learning, and teaching at the right level. Additionally, Utthan actively involves mothers and members of the School Management Committee (SMC) in strengthening progressive learners. Below is the yearly outcome of our hard work:









Utthan other various initiatives & Achievements

- ✓ Utthan won FOKIA Award under the category "Excellence in collaborative CSR Project.
- ✓ Utthan created special syllabus of Maths, Science & English to achieve good result in board exam.
- ✓ The Kutch University has conducted an impact assessment of IT on Wheels, which has been evaluated and certified by the DEO Office.
- Career Counselling in Utthan High Schools same remedial classes during summer break.
- ✓ Health awareness programs in schools, children of class 6 to 8 were made aware about health.
- ✓ High school girls' students celebrated Rakshabandhan with Shoulder at Boarder.
- √ 1000+ Students are preparing for competitive exam. Its more than double from last year.

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Adani Vidya Mandir, Bhadreshwar

Empowering Communities through Free and Compulsory Education

- Established in June 2012, school is a Gujarati Medium, Co-educational institution that adheres to the Gujarat State Board curriculum. It is a school for the students of KG to Class X. Starting its journey in a rented house in Bhadreshwar village, the school commenced operations with 80 students in class-I. Guided by a committed team of six teachers. In the academic year 2023-24, it proudly serves a student population of 604, with 174 students hailing from fisher-folk communities. 24 dedicated teachers are there in school. Committed to providing comprehensive and quality education, the school operates with a unique approach – offering education at no cost. Furthermore, the school extends support by providing complimentary uniforms, books, and stationery. It's noteworthy that all the students belong to the Economically Weaker Sections (EWS), emphasizing dedication to inclusivity and accessible education.
- School stands as a trailblazer, being the first state board school in Gujarat to receive accreditation from NABET under the Quality Council of India.



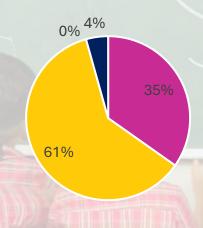
Adani Vidya Mandir, Bhadreshwar





Achievement in sports

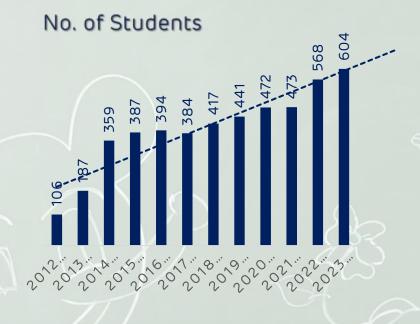
- In August 2023, students of AVMB engaged in block-level sports competitions, excelling in Athletics, Kho-Kho, and Yoga. Team of AVMB: U14 & U17 boys secured 1st place in Kho-Kho and progressed to the district level.
- Notably, Abzal Reliva, a Class X student, clinched 1st position in Shot Put, and Hardev Jadeja from Class IX achieved 1st rank in Long Jump earning the opportunity to represent Mundra block at the district level.



■ Second Class ■ Pass Class

Distriction

First Class



AVIND 31D 10 - 33C Boold Result (2022-23)			
Sr. No.	Grade	Student	
1	Above 80%	8	
2	Above 70%	8	
3	Above 60%	6	
4	Above 50%	0	
5	Above 40%	1	
	Total Students	23	

AVMR STD 10 - SSC Roard Desult (2022



100%

Success in Gujarat Board
Standard 10th Examination. 30

Achievement in Arts:

- An Essay and Quiz Competition arranged by TATA BUILDING INDIA was organized on the theme of "Recycle". 81 students of AVMB participated. Winners were recognized and rewarded by Tata Group, Rajkot. Winner students received medals.
- School orchestrated a special moment. Parents were invited to the school where
 they had the honor of presenting medals and certificates to the winning students.
 Notably, Ms. Manjaliya Najirhussain Hasam hails from the fisherman community.
- 06 Students of Class VI to VIII appeared in PRARAMBHIK VISHARAD examination conducted by BRIHAD GUJARAT SANGIT SAMITI on 14/12/2023, School is waiting for the result.
- 19 Students of Class V to IX wrote inspirational stories in Gujarati language all the stories were submitted to a publisher name: Jagdish Jepu, among them 01 story of Maheshwari Raj of Class IX title: Importance of Every individual" published in "GULSHAN" magazine in 10th edition on 11/10/2023.



Annual Function in AVMB

- On 5 March 2024, the school celebrated its 12th annual day with a pledge
 to plant over 25000+ saplings over 3 years in the school premises and in
 the surroundings, including mangroves in the coastline. The annual day
 named Utkarsh was aptly linked with the United Nation's Sustainable
 Development Goals, especially highlighting environmental consciousness.
- Utkarsh gave these students a platform to celebrate the ethos of environmental conservation with a lot of take aways in terms of showcasing learning through models based on SDGs and working models on environment and water conservation. The students presented various sustainability goals through skits, songs, and poetry narration in an enthralling event in AVMB.
- The highlight of Utkarsh 2024 was a pledge that students have taken to plant 25000+ saplings towards greening the region. The fishermen community also came forward to support the children in achieving this pledge. AVMB is committed towards contributing to a secure world. At the event, all 17 SDGs were presented in two sections 1) Exhibition through models, charts, and painting and 2) Drama, dance, and songs. The carefully curated event by the teachers under the guidance of the Adani Foundation sensitized the guests on the seriousness of causes, especially the importance of preserving the coastal biodiversity.
- Mr. Jugeshinder ('Robbie') Singh, CFO of Adani Group, chaired the program. He was impressed by the state-of-the-art facilities of the school and especially by the knowledge showcased by the children on the topics which are generally taken up and discussed in higher academics, policy roundtables and corporate chambers. He said, "I am humbled to be here and seeing fantastic knowledge and models presented by these young children. I am sure each of them will make great progress in their lives, become financially independent and help their families, communities and our great nation."





















Inspiring Minds







Udaan Progress Report

Apr 23 - Feb 24

Volume 2

www.projectudaan.in

About Project

Udaan is a special project inspired by the life-changing story of Mr. Gautam Adani. As a child, he had visited the Kandla port in Gujarat, and after looking at the expanse of the port, he dreamt of having his own port one day. The rest is history. Under this project, exposure tours are organized wherein school, college students, faculties, employees from corporates are given a chance to visit the Adani Group facilities. Under this project, services are absolutely-free of cost for government schools.

Vision

To create a pool of inspired young minds for nation building at a global scale.

Mission

To motivate young students to dream big by exposing them to world-class industrial facilities.





Total no. of visits

7019

Total no. of participants

447541







Inspiring Minds







Udaan Progress Report

Apr 23 - Feb 24 | Volume 2 |

www.projectudaan.in

Project Site Mundra, Gujarat (Site commenced on Dec 2010)

Adani Ports and Special Economic Zone Limited (APSEZ) India's largest port operator and SEZ

Adani Power Mundra Limited (APMuL)

India's largest single location coal based private power plant

Adani Wilmar Limited (AWL)

Asia's largest single location edible oil refinery

MSPVL - Adani Mundra Solar PhotoVoltaic Limited

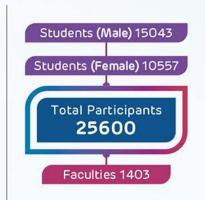
India's first and largest vertically integrated solar company

Mundra Windtech Ltd

A wind turbine taller than the world's tallest Statue of Unity.

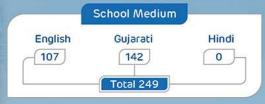




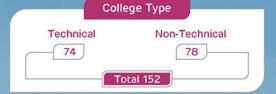


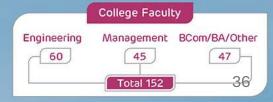














Sustainable Livelihood - Animal Husbandry

In the face of dwindling rainfall and increasing salinity in groundwater, agriculture is under threat. Recognizing this challenge, the Adani Foundation has initiated various interventions to foster the holistic development of agriculture and animal husbandry.

Pashudhan initiative:

Two vital pillars of this initiative:

Preventive Health Care & Fodder Support Program

Preventive Health Care: Cattle Health camp

The Adani Foundation, in collaboration with the Animal Husbandry department, organizes cattle health awareness and vaccination programs in 24 villages surrounding our area. These camps bring together government veterinary doctors who conduct check-ups and administer treatments for common ailments. The remaining medicines and vaccines are provided by the Adani Foundation.

These programs are highly effective in maintaining the optimal health of livestock and safeguarding them against deadly diseases like Foot-and-Mouth Disease (FMD) and Clostridial infections. The vaccines used are specifically designed to offer long-lasting immunity against specific diseases, ensuring the continued health of the animals even in harsh environmental conditions.







Cattle Vaccinated









982 Cattel Owne Benefited

Fodder Support:

Our Fodder Support Program is dedicated to assisting our neighboring villages during the challenging seasons of summer, drought, and crop failures. Through this program, we have provided a significant amount of Green and dry Fodder to ensure the well-being of both the communities.

Adani Foundation provides good quality dry and green fodder to 24 villages in our vicinity, covering 15,005 cattle of 2070 Cattel owners.

Grass Land development:

AF converted 18 acres of denuded village common pastureland (Gauchar) into fertile and productive grassland in Zarpara and siracha village to transform into Fodder Sustain village with Community participation and responsibility for maintain and Monitoring.

Among that 18 Acre of Gauchar land is fenced and sowed with Multispecies Green Fodder with Having Good nutritive value. More than 1500 Cattle will sustain with Improving quality and quantity of milk.

1500 cattle get benefitted by green fodder for 30 days – which increase 0.5-liter milk quantity of 50% cattle.

(750 cattle x 0.5-liter milk quantity Increase x 40 INR per liter=Rs.15,000/day). This Intervention could benefit ₹ 4,50,000.

14,38,163 Kg Dry Fodder Support
45,85,278 Kg Green Fodder Support
24 Beneficiary Villages
15005 Cattle Benefitted
2070 Cattle Owner Benefitted

"It would be highlighted as best Demonstration and replicate in the other villages as sustainable fodder development project"



Sustainable Livelihood - Fisherfolk Community

Persistent efforts for Fisherman development:

598 Education Kit Support

273 Fisherman Shelter Support

1,247 Vehicle transportation support

106 Cycle Support to high school going students

613 Scholarship Support

419 Youth Employment

195 Linkages with Fisheries Scheme

3,534 Ramatotsav Community Engagement

56,523 Man days Mangroves
Plantation





Empowering Fisherfolk Communities through Education

Vehicle Transportation Facilities:

Ensure seamless access to education for school-going children from Luni, Randh and Juna Bandar Fisherfolk Students in reaching the nearest School, eliminating barriers to regular attendance.

146 Students supported Mundra Taluka

58 Students supported at Mandvi Taluka



Y.

Educational Awareness Sessions:

Through targeted awareness sessions in Fisherfolk Vasahats, we promote the transformative power of education, with a particular focus on advancing girl-child education.

487 Students motivated for high school Education



Cycle Support:

Overcoming transportation obstacles, our cycle support initiative enables six 9th standard fisherfolk students from Juna Bandar to continue their education with ease.

Scholarship Support:

Provide scholarship support to 31 deserving students, covering their higher secondary school fees. Emphasizing gender equality, we offer 100% fee support to female candidates and 80% to male candidates.



Education Kits Support:

Equipping fisherfolk students in grades 9 to 12 with essential tools for academic success, including notebooks, guides, and study bags, we empower them to pursue their educational aspirations with confidence.

15 Students supported at Mundra

42 Students supported by Mandvi



Assisting During Emergencies:

Fisherfolk Home were significantly damaged by the Biporjoy Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery.

336 Fisherfolk house benefited



Fostering Youth Employment:

At APSEZ Mundra, our mission revolves around providing sustainable employment opportunities for the local fishing community. We serve as a bridge between industries and Fisherfolk youth, facilitating job placements to enhance livelihoods. This year, we have successfully engaged 115+ Fisherfolk youth, paving the way for a brighter future.

115+ Fisherfolk youth employed



Strengthening Fisherfolk women:

Through comprehensive health and hygiene initiatives, we empower Fisherfolk women. Our programs include family planning resources, menstrual hygiene workshops, nutrition advocacy, and health awareness sessions covering vaccinations, clean water access, and mental health support.

449 Women benefited



Potable Water Distribution:

Providing potable water facilities to 9 Fisherfolk
Vasahats daily, either through water tankers or by establishing linkages with the nearest Gram Panchayat. This initiative benefits over 5000 Fisherfolk, significantly improving their health and productivity.

5000+ Population benefited











Sustainable Livelihood Agriculture

Sustainable agriculture is a powerful force for good, safeguarding our environment. public health, communities, and the welfare of animals.

Through practices like soil enrichment, diverse crop patterns, eco-friendly cover crops, natural farming methods, orchard development, tissue culture, and water harvesting, sustainable agriculture ensures the well-being of our ecosystem while replacing harmful chemicals with healthier alternatives.

This year, the Adani Foundation continued its strong commitment to advancing natural farming in Mundra. Through various initiatives and partnerships, we provided crucial support to local farmers, empowering them with knowledge and resources to transition to sustainable practices.



2200+

Farmers educated in natural farming +008

Farmers embracing natural farming methods 200

Farmers got financial assistance of Rs. 10,000 3

District level exposure visit ₹ 36.7 lakh

Business done by our benefited Farmers

It's more than just a farming practice; it's a commitment to nurturing our planet and enhancing lives.

Promoting Natural Farming

The Adani Foundation is dedicated to advancing natural farming through a cow-based farming initiative. Our interconnected techniques aim to boost farmer yields, with a primary focus on enhancing soil quality. We conduct pre-testing and post-testing to manage soil carbon content effectively. These are our endeavor for promoting natural farming this year:

Training

farmers in 16 villages, enlightening them about the harmful effects of chemical fertilizers. Demonstrated how to produce organic fertilizer using household products, emphasizing its benefits and cost-effectiveness. After adopting it, they witnessed its positive effects on their fields.



Kitchen Garden Kit

We have supported vegetable kitchen garden kits to 500 farmers with the aim to enable them to grow fresh and nutritious, chemical-free vegetables. This will enhance their food security and promote self-reliance.



This year, amidst the aftermath of the cyclone, we stood by our farmers and held dedicated meetings with KVK, KCS, and DRC to restore the fallen date trees.

Collaboratively, provided JCB, technical support, organic fertilizer etc. Successfully restored 615 trees. Each Date trees is projected to yield approximately Rs. 25,000, Total Yield in Next Season:-Rs.1.53 Cr.

Financial Assistance

Extend financial support to 200 farmers, each receiving Rs. 10,000, a transaction gracefully facilitated by Mr. R. N. Parmar, virtually transferring funds to their bank accounts, funded by Adani Petrochemicals. This fund will help farmers in planting a total of **53,136 fruit-bearing plants**.



Raj Shakti Prakrutik Kheti Sahkari Mandali

The Adani Foundation has taken a proactive step by organizing awakening and awareness sessions to promote natural farming practices in Mundra block Villages. These efforts led to the formation of the "Raj Shakti Prakrutik Kheti Sahkari Mandali," comprised of 35 dedicated farmers who are deeply committed to natural farming. These are the activities done assisting the Mandali this year:

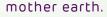
Interaction with Governor

Rajshakti Prakrut sahakari Mandali had Opportunity to meeting with honorable Governor of Gujarat Achrya devvrat at Gandhinagar. They got the valuable knowledge by the him on Natural Farming and gave their farm's vegetables to sir.



Appreciation by Governor

Governor of Gujarat, Shree Acharya Devvratji, encouraged 25 of our farmers practicing natural farming at the Krushi and Dairy Expo event in Bhuj. He motivating them to continue their commendable work for our



Exposure Visits

Our farmers embarked on three eye-opening exposure visits to Gautech-2023. Bansi Gir Gaushala, and Narayan Dev Dwisatabdi Mahotsav, where they learned about new agricultural tools, various seeds, organic products, and making of Gau Krupa Amrutam organic fertilizer

Certification by GOPCA

We have successfully certified 28 farmers under the Gujarat Organic Products and Certification Agency (GOPCA). Now, they have authentic validation as organic farmers, ensuring they receive the best prices for their farm products.





Kutch Kalptaru FPO (KKPC) and Prakrutik Mandli

To promote horticulture, the Kutch Kalptaru FPO (KKPC) was established in 2020 by farmers from Mundra Block to address various challenges they faced. With an initial 350 shares held by 280 shareholders, the company is now expanding to include up to 5000 farmers and 537 registered share holders.

In the current year, KKPC began selling 10kg capacity packaging boxes at a minimal profit margin of Rs. 29 per box, resulting in a turnover of Rs. 10.5 lakh and a profit of Rs. 75 thousand. This initiative has indirectly supported over 800 farmers.

> training sessions have been arranged to ensure effective management and growth. Total Turn over is Rs. 33.67 Lacs current year which is four times higher than last year which shows remarkable progress of FPO.



800 **Farmers** benefited

₹ 33.67 lacs Turn over



Green Carnival

Today, finding truly natural, chemical-free food has become a challenge. Our fruits and vegetables are often processed with chemicals, stripping them of their nutritional value. But there's hope.

For years, the Adani Foundation has been supporting farmers practicing natural farming methods. However, these farmers lacked a platform to sell their produce. That's why AF has launched the Green Carnival.

At Shantivan, Samudra colonies in Mundra, and KCL's Mandvi colony, we've provided a marketplace for these farmers to showcase and sell their agricultural bounty. The response has been overwhelming.

Encouraged by the positive feedback, these farmers have even established an organic produce shop in Mundra, setting an example for sustainable agriculture. Today, over **302 farmers** are part of this initiative.

Previously, these farmers sold their harvest in bulk to vendors. Now, by connecting directly with consumers, they've seen a remarkable 35% increase in their income.

The communities of both colonies are delighted and eagerly anticipate the Green Carnival every Sunday. Together, we're not just changing food habits, but also supporting the livelihoods of those who cultivate our food, and nurturing a healthier, more sustainable future.

Total Green Carnivals = 37

Total Sell = 8,623 kg

Revenue = ₹ 3,01,805



Sustainable Livelihood - Women Empowerment

Women's empowerment holds a significant place within the Adani Foundation. Since its inception, the foundation has been dedicated to strengthening women by providing training, essential materials, and creating platforms for them to sell their products. Additionally, the foundation collaborates with the government to establish Self-Help Group (SHG) initiatives, enabling women to conduct their

businesses more effectively and encouraging savings. Through various training programs, the Adani Foundation empowers women, fostering their growth and self-reliance. Moreover, the foundation is acutely aware of hygiene and health, actively involving women in initiatives related to these crucial aspects. The holistic development of women is at the core of the foundation's approach and strategy.

We dedicated to empowering women both financially and socially. To that end, a comprehensive training program that has reached 850 women across 82+ Self Help Groups with 35+ Lacks saving Corpus, out of which 5 groups have outstanding revenue generation.

About - Project Saheli



Self Help Groups

- √ 82 Self Help Groups in coordination with National Rural Livlihood Mission.
- √ 850+ Members
- ✓ Over Rs.35 Lacs Saving Amount Corpus



Job Sourcing - Govt

- √ 11 Women supported for application and process of Gram Rakshak Dal, Bank Sakhi , Bima Sakhi and Professional Resouce Person.
- ✓ Average income Rs.4200 Per Month

Revenue of each SHG in the FY 2023-24

Name of IG activity of SHG's/JLG/FPC's	Income 2023- 24 (INR)	Cumulative income (INR)
Sonal Saheli	480250	3027450
Jay Adhar Saheli	26,500	252,066
Tejasvi Saheli	325000	3,390,150
Umang Saheli	76500	225800
Vishvas Saheli	26300	511400
Jay Momay Saheli	21000	151500
Meghadhanush Saheli	116950	597450
Sanitary Pad Group	71300	746300
Radhe Saheli	31000	870418
Shrddha Saheli	486580	1107580
Chamunda Saheli	21900	1726400
Jay shakti Saheli	2500	605500
Food Sister Sahlei	898250	898250
Jyot Saheli	40800	40800
Pantjanpir gau Saheli	412000	412000
Total	3036830	14563064



Making SHG Self Reliant

- √ 16 SHG are making strides towards selfreliance.
- √ Various handicraft, dry and fresh food making, stitching, tie and die etc.
- √ 175+ women Monthly average income
 @ Rs.7000 of each member/Month



Social Empowerment

- ✓ 2 Livlihood Enhancement Training through RSETI
- √ Financial support for business set up
- ✓ Legal rights and domestic violence workshops
- √ Family counselling for Job sourcing



Job Sourcing - Private

- ✓ Coordination for Job by Unnati Portal with Adani Group company companies, Britania, B Medical and Emphazer company
- √ 398 Women supported till date for job sourcing.
- ✓ Average income Rs.10200 Per Month

Highlights of the Work done by our SHG!



Australia 29th PM visit: Exhibition in Adani Solar

The 29th PM of Australia, Mr. Malcolm Bligh Turnbull and his wife Lucinda Mary Turnbull visited Adani, Mundra. At Adani Solar, they saw our 20+ SHG exhibition stall and interacted with over 180 working women from SHGs. Mr. Turnbull was genuinely thrilled to see women stepping out of their homes, crafting beautiful pieces, and supporting their families. Mr. Malcolm Bligh Turnbull - "It's empowering to witness women taking charge of their livelihoods and making a difference."



Sathwaro Mela 2023-24

The event unfolded with the captivating theme of 'Powering Art Empowering Women,' setting the stage for an extraordinary celebration. Held at the prestigious Adani Corporate House in Ahmedabad, the inauguration was graced by the esteemed presence of the Honorable Chairperson of AF, Dr. Preeti G Adani, Mrs. Shilin R Adani, and Shri V.S. Gadhvi. We were delighted to welcome over 500 enthusiastic visitors to our stall, contributing to the resounding success of the event. Notably, SHG Groups earned a

remarkable income of over Rs. 75,000.



Switzerland delegate visits SHG

Switzerland delegates made a memorable visit to Adani Solar to witness the exceptional craftsmanship showcased by our SHG exhibition. Captivated by the intricate artwork, they engaged with the women, gaining a profound understanding of their skills and purchasing a significant quantity of goods. Overwhelmed by the quality of workmanship, they graciously extended their support by sponsoring \$100 (90,000 INR) towards our SHG. This monumental gesture marks a historic milestone for our group.



Handicraft Day Celebration

After 3-day training from Shrujan, hosted an exhibition showcasing handmade crafts by women, alongside interactive workshops on handicraft techniques.



Gauchar Cleaning Abhiyan

At Bujpur, 31 women initiated the 'Gauchar Cleaning Abhiyan,' with support from AF's Loader Machine. This collaboration aims to enhance environmental preservation and community development.



Workshop on Women Health

Aware the women connected to our SHG about mental and menstrual health care, benefited over 130 women, especially those neglecting personal well-being during menstruation.



Women's Day celebration

Celebrated Women's Day with entrepreneur training and mental peace awareness sessions, attracting over 100 participants.

Community Health

Ensuring good health is not just a priority; it's the cornerstone of a thriving community. At the heart of Kutch, the Adani Foundation is dedicated to nurturing well-being and facilitating access to expert medical care. Collaborating closely with G.K General Hospital in Bhuj and Adani Hospital in Mundra, we tirelessly strive to enhance community health standards.

For over a decade, our commitment to community care has been unwavering, manifested through our Mobile Health Care Units, Rural Clinics, and Ayushman Cards linkages with the beneficiaries and THO. In recent years, a concerning trend of Viral, kidney and ortho related diseases has emerged due to salinity ingress. In response, we have orchestrated a series of specialized health camps to address these issues, offering essential treatment support while fostering awareness about preventive measures.

We firmly believe that both preventive and curative healthcare are fundamental pillars for sustaining community well-being and fostering economic prosperity. Our aim is to strike a harmonious balance, paving the way for a journey of longevity, vitality, and fulfilment for all those under the care of the Adani Foundation.

Summary of Healthcare Initiatives for the Year

This year, we provided **41,546** medical health services and conducted health awareness camps for **763 High school students**. Our annual medical facilities have made a significant impact in improving healthcare access and awareness. Here are the direct beneficiaries of our endeavor:



2,108 Medical Support to needy patients



118 Dialysis Support



10,477 Mobile Van



12,850 Rural Clinic



1,618 Health Camp



5,795 Specialty Health Camp



6,865 Ayushman Card till date



1,715 Blood Donation Camp



Medical Support – 5.5%

Dialysis Support – 0.3%

Mobile Van – 27.2%

Rural Clinic - 33.3%

Health Camp – 4.3%

Specialty Health Camp – 15%

Ayushman Card – 10.02%

Blood Donation Camp – 4.5% 54

110



Rural Clinic & Mobile Health Care Unit

Health stands as the cornerstone for community development, and to revolutionize rural healthcare, the Adani Foundation has launched the 'Mobile Health Care' and 'Rural Clinic Service'. These initiatives aim to offer primary, preventive, and curative healthcare services accessible in remote and inaccessible areas, a commitment upheld for over a decade.

Rural Clinic



Rural clinics extend their services to 5 villages in Mundra and 2 villages of Mandavi Block. The services of both MHCU and Rural Clinics are accessible to patients at token charges of Rs. 20 per visit.



Mobile Healthcare Unit

MHU is equipped with a range of integrated medical devices enabling staff to conduct preliminary check-ups. With over 90 types of essential lifesaving medicines available, the Mobile Health Care Unit covers 29 villages with 7 fishermen settlements. Services provided include blood pressure checking, sugar testing, and ECG assessments.



Ayushman card facilitation

In a world where medical costs are overwhelming, the Ayushman Card offers hope by providing affordable access to quality healthcare.

The Adani Foundation bridges the gap between the government and those in need ensuring that 3865 people received this vital resource.

Ayushman Bharat PM-JAY provides Rs. 10 lakhs per card owner for secondary and tertiary care, Adani Foundation is aiming to achieve 100% coverage in Mundra's villages.

25 Village

6,865
Ayushman cards Issued

686.50 Cr

Health insurance

* Funded by - Kutch Copper Limited





Supporting Individuals



The Adani Foundation extends financial assistance to the most economically challenged patients facing life-threatening diseases such as those related to the heart, liver, kidney, and cancer. This support comes with minimum participation requirements, ensuring access to crucial medical care.

In the current year, a total of 2,108 patients from Mundra, Mandavi, and Anjar Block have received support at Adani Hospital, Mundra. This assistance underscores our commitment to providing essential healthcare services to those in need, regardless of economic status. The medical staff of GKGH stood with us in these endeavor.

Dialysis Support



In the arid region of Kutch, particularly in Mundra where saline drinking water is prevalent, cases of urinary stones and kidney failure are significant. To address this issue, a dialysis support project has been initiated to provide essential dialysis treatment to the most vulnerable patients, enabling them to lead healthier lives.

This year, a total of 2 patients have been supported with regular dialysis sessions, twice a week. Regular dialysis sessions have notably improved the patients' conditions, extended their life expectancy and enhanced their quality of life.



Special Camp



This year Adani Foundation organized numerous special health camps, such as blood donation camps where 1715 donors contributed, helping save countless lives.



Conducted health programs for students, engaging 763 participants, and held sessions on Personal Health & Hygiene Awareness, addressing critical health issues and promoting overall well-being.



Our camps for pregnant women provided essential prenatal care, ensuring healthier pregnancies and safer deliveries. It benefited 809 pregnant women.



Conducted a pediatric health camp, nurturing the health of 628 children and ensuring their well-being.

GKGH medical stuff support in all camps.



Cataract-Free Mundra



The initiative is a dedicated effort to eradicate cataract-related vision impairments specially focused on Senior citizen through Meticulous planning as below.

Lives Impacted: 1131

- Comprehensive Eye Screenings at Village level
 - Cataract Surgeries to GKGH ,Bhuj
 - Post-Operative Care and Follow-up
 - > 5 successful Operation





Preventive health Campaign

The Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene initiatives and Millet consumption for healthy body.

Sample Survey Report 2023-24

55% Never heard about Menstrual hygiene

60% Are using cloths on regular basis

36% Had never used sanitary pads

68% Had no information about UTI

30% Never used millets in their diet

60% Never heard about millets or it's benefits.





Menstrual & Mental Health Awareness Drive:



We organized impactful awareness camps in various villages, empowering women and adolescent girls with knowledge about menstrual hygiene, ensuring both physical and mental fitness.

Impact:

36% Growing usage of sanitary napkins

22% reduction in UTI

2610 women & girls benefited

International year of Millets - 2023



To promote millet culture and raise awareness about its benefits in Mundra, we organized a Millet Competition across nine villages. Over 715 women took part in the competition, while 2200 benefited from awareness sessions. Through this initiative, 300 indigenous millet recipes were showcased, highlighting the potential for sustainable and nutritious dishes in our daily diets.

Impact:

65% of women are using millet in their regular diet.

17% Women grappling with obesity and diabetes are experiencing positive transformations in their health, evident in significant weight loss.

Millets Food Festival

In the wake of the "International Year of Millet" in 2023, KCL took decisive steps to promote the nutritional and empower women from remote area of Mundra Taluka.

Across the villages of Mundra Taluka, KCL organized a series of millet awareness camps and a thrilling millet food competition. The response was nothing short of remarkable, with 715 women actively participating and sharing 300 indigenous millet recipes. To commemorate this achievement, we hosted a grand millet festival at Adani House, in which 120 women showcased a diverse array of millet dishes, each one bursting with flavor and nutritional value.

But the significance of the event extended beyond mere culinary delight. Women spoke of how millets had become integral to their lives, aiding them in combating long-term ailments. They are very much grateful for these awareness camps and look forward to such health-promoting events.

At this event, we had the privilege of welcoming esteemed guests, including Mr. Sujal Shah (CEO, APSEZ), Mrs. Rachna Joshi (President, Mundra Nagar Palika), Mr. Pandya (Program officer, ICDS), Mr. Saurabh Shah (Head Corporate Affairs, APSEZ), and Mrs. Nehalben (Nutrition expert). Their presence added immense value to our gathering.



* Funded by - Kutch Copper Limited







Community Infrastructure Development

Adani Foundation is dedicated to enhancing the quality of life of communities under the Community Infrastructure Development Initiative. It acknowledges the government's role in providing fundamental infrastructure facilities and strives to bridge gaps, ensuring its activities are tailored to meet specific needs and responsive to grassroots requirements.

Some of the initiatives include constructing check dams, deepening ponds to augment water storage capacity, infrastructure support to fisherfolk communities, developing secure education premises and facilitating access to clean drinking water for villagers.



CID endeavor of FY 2023-24



Renovation Check dam and CC road work at Nani Khakhar – 200+ benefited



Renovation of High School at Zaarapa – 2200+ Benefited



Construction of Pipe Culvert – 400+ Benefited



Construction of chain-link fencing at Mangra village – 300 people benefited



Gaushala Shed at Zarapara village – 400 cettle benefited



195 Stall – Vegetable market– 900+ Vegetable vendor benefited



Renovation of approach road, Zarpara – benefiting 400 villagers



Renovation of Civil and Electrical Work at ITI, Mundra - 500 students benefited 61

CID endeavor of FY 2023-24



Construction of 21 Borewell Recharge in Nagmati River - 150+ farmer benefited



Check dam Desilting and restoration at Nana Bhadiya – 100+ farmers benefited



Renovation of Check dam at Pavadiyara village - 300 people benefited



Renovation of Balwadi at Juna bandar & Luni bandar



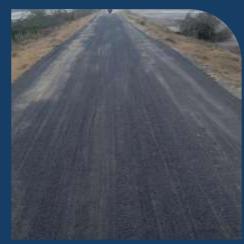
185 RRWHS construction is ongoing in various villages - will benefit 1300+ residents



Supply & installation of Solar pannel (3.25 KV) at CGP, Mundra – benefiting 1200 people



Development of Model Farm in Zarpara, Siracha & Mangra – Benefiting 300 people



Renovation of approach road at various fisherfolk vasahat







Community Resource Centre

	Government Scheme Facilitation				ו
- 1	Sr. No	Scheme Detail	Gov. Support Rs/Month.	Total Beneficiaries	Total Amount per Month (INR)
	1	Widow Pension	1250	674	28323150
	2	Bal seva Ayog	2000	49	3430000
	3	Divyang pension	1000	27	586000
	5	Niradhar Pension	1000	126	5178000
	6	Palak Mata Pita	3000	5	696000
		Total		1439	38213150



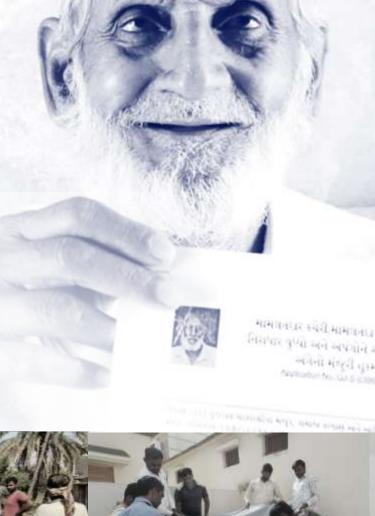
Community resource Centre is the bridge between Government Schemes and real Beneficiaries. It is situated at Adani Field Office, Baroi with the motive to be Single window point solution (Online Application & Documentation) to Facilitate Government Schemes leveraged to needy and Eligible people.

Till Date 1439 beneficiaries are getting aid of Widow Pension scheme, Senior Citizen and Divyang pension scheme and Palak Mata Pita Scheme 3.81 Crore Monthly by procedure support of AF.

Key Achievements of Community Resource Center

One time

		11 506.	7 23	The second of th
Sr.No	Gove Scheme one Time	Gov. Support	Total Beneficiaries	Total Amount/Year
1	Covid Support One Time	50000	12	600000
2	Vahali Dikri @ 18 Year	110000	113	12430000
3	Divayang Sadhan Sahay one time	5000	176	880000
4	Manrega (NB21)	22000	32	704000
5	Pagadiya Sadhan Sahay Yojana	9000	9	81000
6	Gau Dattak Yojana	10800	857	9255600
7	Gobardhan Yojana	42000	100	4200000
8	Fishermen Shram Yogi Yojna		163	
			1487	28150600







Swavlamban - Project for Divyangs

Adani Foundation's vision extends beyond Aid, focusing on dignity and sustainability through meaningful employment. While equipment support offers mobility, employment bestows the dignity to stand tall in society.

With noble intentions in mind, this year, we organized a mega employment drive. Our goal is to provide job opportunities to over 100 disabled individuals.

We've conducted interviews in three phases, for 250+ divyang candidates engaging 22 companies from Adani Groups and other reputed firms in Mundra.

> Roadmap of this incredible vision:



Interview for 250+ divyangs in 3 phases by 22 companies

Swavlamban event:

Event for the Divyangs & by the Divyangs Diwali Celebration with **100+** Divyangs Employed

100+ Divyangs



Diwali Celebration

After the successful completion of the 1st phase of the Divyang Employment Fair on November 8th, we gathered to share the joy of Diwali with over 100 remarkable divyangs.

In the spirit of uplifting divyangs, we have also invited advocates dedicated to the well-being of disabled people. Mrs. Anni Rakshit Shah and Mrs. Rupa Kapoor graced us with their presence as chief guests. Our invitation also extended to the HR representatives of Adani Group and SEZL companies.

On this auspicious occasion, we equipped 32 divyangs with essential tools such as wheelchairs, tricycles, harmoniums, and facilitated 10 divyangs through government schemes.

To express our gratitude to those who have dedicated their lives to improving the lives of disabled individuals, we honored them with certificates and mementos.

Just as we light up our homes with glowing diyas during Diwali, the smiling faces of these divyang individuals illuminated our Adani House during this event. It was a celebration that went beyond the ordinary, leaving a lasting impression of compassion and unity.



Swavlamban Event

In the spirit of hard work and dedication, the Adani Foundation concluded its Divyang Employment Fair, marking a significant milestone in transforming lives. Through three phases of dedicated effort, the Foundation successfully secured over 100 employments, providing a newfound sense of self-reliance to individuals with disabilities.

Notably, 35 divyangs were equipped with essential employment tools, fostering self-sufficiency. To commemorate this achievement and honour the divyangs, companies, and advocates of inclusivity, the Foundation organized the Swavlamban event on December 5th at GAIMS, Bhuj.

The event garnered the presence of esteemed personalities, including Jeet Adani, Director of Adani Group, V.J. Rajput, Commissioner for Persons with Disabilities, and Nimesh Pandya, Ed. of Kutch collector, among others.

This celebration was a testament to the Foundation's commitment to redefining the narrative around disability and employment.

As the Adani Foundation rejoices in this achievement, it reaffirms its commitment to ongoing efforts that positively impact the lives of differently-abled individuals, embodying a vision of a more inclusive and empowered society.



Our Pride from Divyang Employment Fair!



Bhimaji Maheswari DEO, Mundra Windtech Itd



Patani Govind Babu Document Officer, KCL, Mundra



Arjan Gadhavi DEO, Adani Solar, Mundra



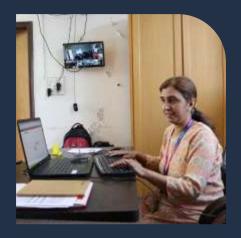
Govind Maheswari
DEO, Mundra Windtech Itd



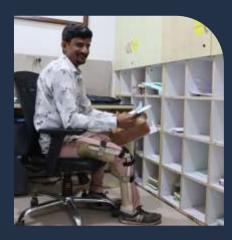
Devangh Gadhavi DEO, Adani Solar, Mundra



Jadeja Natubha Gangji KCRC NGO, Bhuj



Arti Nilesh Jethva Trainer, ASDC, Mundra



Bharat Makwana CMR, Admin, Adani house

Adani Skill Development

Adani Skill Development Centre (ASDC) is dedicated to enhancing employability and entrepreneurship. This year, ASDC has trained 50,00 individuals across Kutch, resulting in 65% livelihood generation. Their innovative courses cover diverse sectors, and they have played a significant role in empowering marginalized communities in places like Mundra and Bhuj, Gujarat. ASDC's vision is to make everyone skilled and employable, meeting industry demands through trained manpower.





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ASDC Mundra Center

Gender Category Total Course Name Female Male Digital Literacy Mud Work JOC (RTG Crane Operator) Hydrography Advance Excel Domestic data entry operator Tally with GST Hand Embroidery Dori/ Macramé Work Food & Beverage General Housekeeper Beauty Therapist Total

ASDC Bhuj Center

Course Name	Gender Category		Total
	Female	Male	
General duty Assistant	84	20	104
Digital literacy	46	16	62
Hydrography	9	0	09
Industrial Safety	1	0	01
5S	1	0	01
Entrepreneurship Development program	60	0	60
Domestic data entry operator	25	0	25
Financial Literacy	64	0	64
Diet and Nutrition	50	0	50
First aid	18	0	18
Interview skills	11	0	11
Total	369	36	405

ASDC Mundra Center

At Mundra Center ASDC, our mission is to equip young individuals with the skills necessary for success. In the current year, a remarkable 734 youth have undergone comprehensive skill training. Our unwavering commitment extends to ensuring that every aspiring professional receives an opportunity for growth and development. Almost 99% of our fees are tied up with various companies, allowing students to access high-quality training without financial barriers.

Other Activities & Achievements

- Women Empowerment through Skill Training: Provided Mud work training to 180 women in Mundra taluka villages supported by MPL.
- ii. RTG Crane Operator Training: Collaborated with APSEZ HR Team to train 79 students.
- iii. Dori Work and Hand Embroidery Training: Benefited 90 women in various Mundra villages supported by MPL.
- iv. Health Awareness and Career Sessions: 108 Ambulance Department enlightened GDA trainees at Adani Institute of Medical Sciences. Guest session on career advancement led by Mr. Kapil Goswami.
- v. Exposure Visit for Women: Women trained in Mud Work, Dori Work, and Hand Embroidery showcased their skills during a visit by foreign delegates to the Solar Plant.
- vi. Women's Related Training Seminar: Held at Matruvandana College, Bidada, Mandvi.









ASDC Bhuj Center

ASDC Bhuj, established following successful skill development initiatives, is a beacon for aspiring professionals. Driven by youth demand, this center plays a pivotal role in providing crucial training for self-development and enhancing personality traits.

Our mission is clear: to equip young individuals with essential skills that position them for success in the job market. With almost 58% of fees tied up by ASDC through strategic partnerships and 42% of fees contributed by students, we ensure that financial barriers do not hinder skill acquisition.

Other Activities & Achievements

- Commendation from Shree Jeet Adani: Received appreciation for supporting the Divyang job fair.
- ii. Employee Development Initiatives: Conducted Advanced Excel training for 18 Sumitomo India Ltd employees
- iii. Entrepreneurship Development Program: Organized a comprehensive 12day program with 60 diverse candidates.
- iv. New Trainee Orientation: Conducted sessions about SAKSHAM center and LMS registration at the Bhuj Centre.
- v. Civil Defense Training (5 days): Covered essential topics including Disaster Management, First Aid, 181 Mahila Helpline, 108 Emergency Services, and Fire Safety.
- vi. F&B & Housekeeping Batch Inauguration: 92 students trained to enhance employability.
- vii. Indo-Euro Project Seminar: Arranged at various Nursing Colleges in Kutch District. Focused on German Language training and job placements.
- viii. Crucial Meeting with ISAR & UNICEF: Discussed future skill development challenges and transgender equality on 9th December 2023.





AKBPTL - TUNA



CID:

The paver block work at Vandi and Tuna Common Gathering which enhances their usability and convenience for the community. Community hall Room construction at Rampar is completed. It will benefit 1010 fishermen.



Potable Water Distribution:

Potable water (17.5 KL per Day) Distribution to Vandi, Vira and Dhavar varo Bandar on regular base through Water tanker Regularly through **AKBTPL** and **GWIL**. This initiative benefited 2230 Fishermen.



Prakrut Rath -Tree Plantation:

Total 3000 Tree sapling were distributed to individual, And 500 tree have planted at Common place and school with ensure their responsibility for watering and caring.



Fodder Support:

Support of Dry & Green Fodder to Tuna and Rampar Village and Gaushala during Scarcity. That impacted on Cattle health and Milk Productivity.

7410 kg Dry fodder

4,47,473 kg Green fodder

> 1228 Cattle Benefited











193 Benefited by Mobile Van

56 Benefited by Medical support

AGEL - Khavda

Adani Green Energy Ltd. Khavda renewable solar plant is a hybrid power project that will use both solar and wind energy to generate electricity. It will be built in the Khavda desert along the Indo-Pak border in Kutch district of Gujarat, having a total capacity of 20,000 megawatts (MW), making it the world's largest hybrid renewable energy park and will be cover an area of 72,600 hectares of waste land. It is expected to play a major role in fulfilling India's vision of generating 450 gigawatts (GW) of renewable power by 2030.

Our Vision for Khavda:



Empowering through Education: Elevate overall academic results, champion girl child education, and ignite a passion for technical streams. We aspire to pave the way for stable employment, fostering a prosperous livelihood for the youth.



Empowering Khavda's Women: Empower 1000+ women socially, economically, and financially through the establishment of a strong federation "Sarhadi Mahila Vikas Sangathan"



Elevating Healthcare: Provide quality healthcare services in 22 villages of Khavda, with a primary focus on enhancing women and child health.



Water Positive Villages: Achieve water positivity in 8 villages of Khavda through our dedicated water conservation structures. We aim to create sustainable solutions for water availability, ensuring a secure and flourishing future for these communities.











Transforming lives in Khavda!

Nestled deep within the remote borderlands of Kutchh, Khavda grapples with the harsh reality of limited access to fundamental necessities: education, healthcare, clean water, and crucial preventive care for women. In response to these pressing challenges, the Adani Foundation has embarked on a transformative journey, launching four visionary projects aimed at illuminating hope and progress across Khavda and its surrounding villages.

Recently, luminaries including Mr. Amit Arora, the Collector of Kutchh, Mr. Verma, Plant Head of AGEL, and Mr. Sanjay Avinash, BSF Head Bt.72, convened with local leaders from 26 villages to honor the Foundation's unwavering commitment.

Amidst accolades and appreciation, Mr. Amit Arora lauded the Foundation's healthcare initiatives and advocated for further support, proposing the launch of an "Arogya Van" to bridge the gap in access.

Echoing this sentiment, Mr. Sanjay Avinash championed the pursuit of higher education, heralding a beacon of hope for the community. As the event culminated with the felicitation of five specialist doctors by the District Collector, it underscored the profound impact of the Adani Foundation's endeavors, igniting a flame of optimism that illuminates the path towards a brighter tomorrow.



Endeavor In Core Areas:



Education - Project Utthan:

Through our Utthan project, we've embraced 8 high schools.

Our mission: Elevate 10th board results, boost attendance, slash dropout rates, promote girls' education, and uplift education quality in Khavda.

At this high schools, we've enlisted 8 dedicated Utthan Sahayaks, equipped with specialized training. They're laser-focused on bolstering core subjects such as Math, Science, and English. Additionally, we've brought on board 2 community mobilizers, tasked with persuading parents to prioritize their children's education, particularly for girls.

Fostering ambition & motivation by facilitating with Industrial visit & notebook distribution





Empowering 364 Students



Health Care:

The community struggles with limited healthcare resources, including just one CHC with a single general

doctor, no specialized care for women and children, and insufficient diagnostic equipment. Financial constraints further hinder access to medical services.

To improve healthcare, we're tackling diseases in two ways: through health camps and Adani Arogya Karyakram Khavda CHC for treatment, and dedicated awareness camps for prevention.

Curative Health Camp:

Adani Arogya Karyakram Khavda CHC:				
Gynec	Pedia	Physi	Ortho	Optho
555	640	283	206	197
Health	Camp:			
Gynec	Pedia	Physi	Ortho	Optho
278	455	579	61	139



Preventive Health Camp:

Actively promoting preventive health awareness through family planning education, menstrual hygiene workshops, nutrition advocacy, mental health awareness sessions. Conducted 49 training in 38 villages.



1453 Women Benefited



Endeavor In Core Areas:



CID - Water Conservation

In Khavda, water scarcity is critical: supply is weekly, groundwater levels are low, and

villagers and animals share a single pond. Students drink unfiltered water at school, and rainwater flows away, unused.

- 1. Kuran village Pond deepening & Filter well
- 2. Tuga village Check dam maintenance





Other CID work

 Roof Shed in khavda High school
 RO plant in 5 High school

350+ students benefited





Farmer welfare:

In Khavda, agriculture struggles due to limited knowledge and challenges like water scarcity and soil

fertility issues, despite 80% of the population being engaged in dairy farming.

To educate farmers we organized an awareness camp for **275 farmers**, encouraging them to join the **ATMA Government Sanstha**. This initiative aims to provide guidance on conventional agriculture techniques and exposure to modern farming methods and tools.



Women Empowerment:

Women empowerment initiatives are underway, emphasizing financial independence and self-reliance.

Conducting awareness camps across 38 villages, we're educating women about the importance of having Saving Accounts, Through awareness camps, established Saving Account Groups, forming 7 SHG with 150 women.





15 SHG formed



150+
Women
Economically
Empowered



AGEL - Dayapar & Mandvi



Dayapar Adani Wind Energy project is a large-scale wind power project located in the Kutch district of Gujarat, India. It is one of the biggest wind farms in the country, with a total capacity of 575 MW. The project was developed by Adani Group and Inox Wind, its project was commissioned in April 2019 and supplies clean energy to various states in India through power purchase agreements with Maharashtra State Electricity Distribution, NTPC and PTC India.

Our Vision for Dayapar & Mandavi:



Water Positive Villages: Achieve water positivity in 42 villages of Dayapar through our dedicated water conservation structures. We aim to stablish sustainable solutions ensuring reliable water availability.



Improve Animal Husbandry: Focus on the health of cattle by providing vaccinations, medical treatment, and highly nutritious food to cattle. Helping Cattle owners to generate good revenue and sustain their livelihoods.



Enhance Education: Enhance the school's infrastructure and financially support students for educational equipment, providing them with a modern classroom environment equipped with the modern technology.



Health Services: Provide medical services to 3500 people of Dyapar and connect them with government medical schemes.











Endeavor In Core Areas:



CID - Water Conservation

Kutch suffers from a water shortage, particularly in the Dayarpar region, which receives the least

amount of rainfall and has high TDS groundwater. To conserve as much water as possible in the AGEL Dayapar region, the Adani Foundation has initiated various pond deepening and check dam restoration projects.

Sustainable Water Management projects:

- 1. Pond deepening in 8 Villages
- 2. Check Dam renovation & deepening in 2 villages
- 3. Over Head Portable Water Tank in 1 village

10.4 lakh cum Water capacity

985 acers
Water rich land

1500+ Farmers Benefited

50,000/Ltr Capacity of Over head water tank



SLD - Kamdhenu:

The Dayapar people rely largely on animal husbandry as their second most important income source, after agriculture. But villagers lack in sufficient knowledge on the dietary needs and vaccinations for cattle.

To educate them we are organizing cattle treatment and vaccination program, workshop on Animal Husbandry, and participating in Krushi Mela providing cattle owners mineral mixers to improve animal health and milk production.

455
cattle owners
provided Mixture
Mineral

1500 cattle Vaccination



Endeavor In Core Areas:



CID - Education:

Committed to improving educational infrastructure to ensure every student in Dayapar has access to safe and quality education environment. Through smart classes and material support, we're easing financial burdens and creating engaging learning environments. For good health of students ensuring portable water facility and tree plantation drive in schools.

Support	School
Support	3011001
LED TV for smart class	3
Morden Education tools	2
Education kit support	2
Portable water facility	3
Eco club	1
School renovation	2





In AGEL Dayapar region, the health condition is concerning with major diseases like kidney stones and arthritis are prevalent in the villages. To battel this situation we are conducting health camps and organized Ayushman Bharat card camps. During these events, we distributed medicine free of cost to patients and provided recommendations for optimal treatment to those in need.

AGEL/ Adani foundation have supported 20 different equipment like Cardiac Machine, Semi auto analyzer, and other medical tools at CHC Dayapar which is going to facilitate 56 villages benefiting 62,500+ population.



618 Health camp Beneficiaries

86 Ayushman card
Beneficiaries

₹8.6 Cr. Medical Coverage



13 Schools Benefited



1500+ Students Empowered



Adani Cement - Sanghi



Adani Cement Plant, prominently located near Moti Ber Village in the Abdasa block of Kutch, Gujarat, stands as a distinguished entity in the cement industry. Our facility is not just a cornerstone of the local economy, but also a pivotal contributor to the community's development. With a robust and integrated manufacturing infrastructure, we boast:

- ➤ A 6.6 MMTPA (Million Metric Tones Per Annum) capacity Clinker Plant
- ➤ A 6.1 MMTPA capacity Cement Plant
- > Power generation facilities with a capacity of 143 MW.

About Abdasa:

Abdasa is a region of Gujarat's Kutch district, defined by its diverse geography and rich cultural tapestry, influenced by different communities, agriculture crops and livestock rearing, particularly cattle and camel husbandry, is integral to the region's livelihoods.

The coastal areas support fishing communities, despite progress in infrastructure and development, Abdasa faces challenges related to water scarcity, education, and healthcare, while its diverse culture and unique landscapes continue to define its identity.

Our vision:

To foster and create a sustainable future for all by providing affordable and accessible facilities at the core of health, education, livelihood, and infrastructure.







Endeavor In Core Areas:

Health:





Joyful Beginnings:

Our CSR journey in Sanghi commenced with a joyous Christmas celebration at Adani Cement Abdasa on December 24th. The event, attended by over 500 students and parents, featured cultural performances and dance competitions, spreading festive cheer. Esteemed guests, including Mr. Vivek Misra, Head of Adani Cement Plant. Sanghipuram, Mr. Pushkar Chaudhry, HR Head, and Mrs. Pankti Shah, Gujarat CSR Head, graced the occasion.

Addressing the pressing healthcare needs of residents near Adani Cement Sanghipuram, a series of specialty health camps were launched. These camps, featuring Pediatric, Gynecological, Ophthalmic, and General medical services, aimed to bridge the gap in access to specialized healthcare. Previously, locals had to travel long distances to Naliya or Bhuj for medical care. By bringing essential health services directly to the communities, these camps have made a significant impact, offering health check-ups, consultations, and treatment for various illnesses and conditions, ensuring better healthcare accessibility for all.









Endeavor In Core Areas:

Road Superheroes:

Introducing the "Road Superheroes" Health Care Program, tailored specifically for the drivers of

Adani Cement Abdasa, dedicated to promoting health awareness and preventive care within our driving community. This holistic initiative comprises five vital stages:

- 1. Health Screening
- 2. Telehealth Services
- 3. De-addiction Awareness
- 4. Stress Management & Yoga
- 5. Regular Health Tracking

A two-day health screening camp held at Adani Cement, offered comprehensive health assessments, including vision tests, blood pressure measurements, ECG, diabetes screenings, and BMI evaluations, alongside expert consultations.

150

Drivers Benefited & Receive Health Card



en Militan, ayr, mentl filition gen

Tree Plantation Initiative:

Adani Cement Campus hosted a remarkable tree planting drive as part of our employee volunteer

program. More than 50 enthusiastic employees joined forces to plant trees, showcasing our dedication to a greener future. This collective effort exemplifies our commitment to environmental conservation and responsible corporate citizenship.





NDTV

NDTV, or New Delhi Television Limited, stands as one of India's premier news networks, renowned for its steadfast commitment to journalistic integrity and comprehensive coverage. Founded in 1988 by Radhika Roy and Prannoy Roy, NDTV has emerged as a trusted source of news and analysis, shaping public discourse on critical issues both within India and around the world.

At the heart of NDTV's ethos lies an unwavering dedication to delivering unbiased, credible, and impactful journalism



Empowerment through Education:

In Abdasa Block, the AF, partnering with NDTV, is revolutionizing education through CSR initiatives. Faced with low literacy rates and infrastructure challenges. , the Foundation conducted a thorough needs analysis. This led to targeted interventions, including:

- 1. Smart Classes: Implemented in 10 primary schools for interactive learning.
- 2. School Building & Bala Painting: Creating vibrant learning spaces.
- 3. Educational Kits Distribution: Providing 1,150 students in 15 schools with essential learning materials.

A momentous **Handing Over Ceremony** unfolded in Moti Ber Village, Abdasa, marking the debut of Smart Classes and vibrant Bala Painting in 15 primary schools.

A notable announcement by Mr. Vivek Mishra, Plant head, Adani cement, Sanghipuram unveiled plans for a forthcoming hospital within Sangji premises, promising enhanced community healthcare access.

In this overwhelming event 1,150 students facilitated with essential education kits and teachers were honored with memento.



Shree Renuka Sugar Ltd.

Shree Renuka Sugars Limited stands as a globally recognized agribusiness and bio-energy corporation, covering the entire sugar value chain.

As one of India's largest producers of sugar and green energy, Renuka is at the forefront of sugar manufacturing. With eight cutting-edge sugar mills, many equipped with ethanol and power co-generation capabilities, Renuka leads the industry. Additionally, Renuka operates two of India's largest port-based refineries.



Education:

Committed to improving educational infrastructure to ensure every student has access to safe and quality education environment; we are committed to do following work:

- Renovation of 15 Anganwadi in Kidana, Bharapar, Tuna, Rapar and Wandi village benefiting 600+ students. Also, supporting primary schools with smart class education equipment.
- ➤ Bala Panting and construction of stage in Primary school, Rapar.



Water Conservation Project

To support the community with secure and safe water we are dedicated in implementing water project.

Sustainable Water Management projects:

- Pond deepening work in Kidana, Bharapar and Tuna Villages. It will benefit 600+ villagers and will have 24,000 CUM water holding capacity.
- 2. Construction of RO plant room with installation of 1000 ltr./ hr RO System.





AESL



Adani Energy Solutions Ltd, formerly known as Adani Transmission Ltd, is an electric power transmission company.

ATL is the country's largest private transmission company, with a presence across 16 states of India and a cumulative transmission network of 19,800 ckm and 53,000 MVA transformation capacity.

In its distribution business, AESL serves more than 12 million

In its distribution business, AESL serves more than 12 million consumers in metropolitan Mumbai and the industrial hub of Mundra SEZ. AESL is ramping up its smart metering business and is on course to become India's leading smart metering integrator.

Course of Action in ATL's Villages:

Upon receiving the CSR responsibility for villages under ATL, the Adani Foundation embarked on a mission to address community challenges. Recognizing the pressing issue of increased salinity affecting water availability for daily needs and agriculture, we initiated work on water conservation structures as a sustainable solution to alleviate the villagers' hardships.

- Initiated Pond deepening and Check dam restrengthening work in 5 villages of Rapar and Mandvi Taluka.
- Additionally, started working for Cattle Health Camp and tree plantation drive.













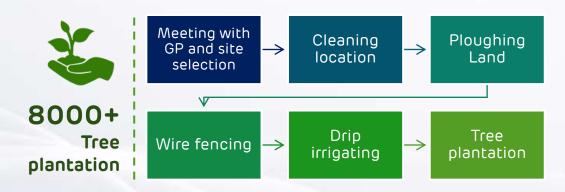
CER - APSEZ



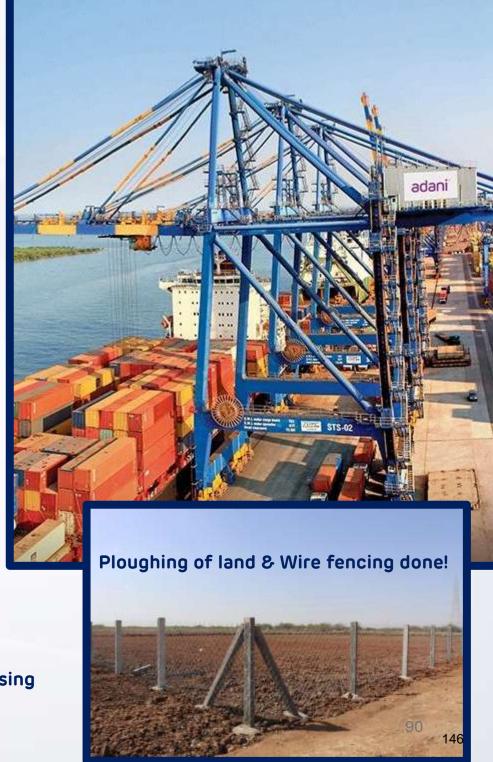
Adani Ports and Special Economic Zone Limited, a subsidiary of Adani Group, is India's largest private port Operator, operating 12 ports and terminals, including India's first deep water Transshipment Port Vizhinjam International Seaport Thiruvananthapuram and India's first port-based SEZ at Mundra.

Course of Action:

Taking on the CER responsibility from APSEZ, the Adani Foundation has undertaken a massive tree plantation drive in Moti Bhujpar. To ensure its success, we have devised a comprehensive six-step plan.



Our initiative represents a sustainable approach to addressing environmental challenges and reducing carbon emissions.





Work done during Biparjoy Cyclone

Cyclone Biparjoy caused huge losses in Mundra and nearby villages. Adani Foundation's worked for relief and recovery with Panchayat & Government body. More than 17,000 people benefited from various efforts. Adani foundation consider this as ethical responsibility and a source of satisfaction. Stakeholders and government bodies also appreciated the efforts.

Meetings with Taluka & District government officials to facilitate assistance and coordination with local authorities.



Connect With Government &

Health teams and ambulances on standby in case of emergency.



Reached to more than 10000 people by Awaz de to aware all, specially for fisherfolk settlement.



4500+ Workforce migration with basic amenities.



Relocate to a secure location

100+ Team member distributed for each taluka/Villages as per requirement













Monitoring

Tracking the cyclone's progress by AF team member.

Connect

Team members in directly touch with 10 Temporary housing & 60 Villages.

Government

Co- ordinating with Government organizations from Talati to Collector.

Panchayat

Co-oridnate with Gram pancahayat in case they need any emergency support.

Pre-cyclone preparation



- Team distribution
- Workforce migration
- Basic amenities
- Awareness efforts.
- Meetings with government.

During cyclone



- Food and shelter provision
- Fodder support
- Awareness messages
- Vehicle support.
- Coordination with Panchayat





- Temporary housing
- Food packets
- Excavator support
- Transfer of affected individuals.
- Provision of fodder

Annexure – 3

ALGAL REMOVAL WORK FROM MANGROVE AREAS

Creek area is regularly observed for checking algal encrustations. On the mangrove recruits & where the algal encrustation is found to be substantial, it is removed manually by deployment of required manpower. This operation is performed during the low tide conditions. The main object is to provide better growing condition for the growth of mangroves. Periodically, spread of Prosopis sp towards the mangrove areas is also observed as this species will compete with mangrove plants for growth.

Photographs of removal of algal encrustations:



Annexure – 4





"Half Yearly Environmental Monitoring Reports"



M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD.

PLOT NO. 169/P, AT - NAVINAL ISLAND, TAL. - MUNDRA, DIST. - KUTCH - 370421.

Monitoring Period: October - 2023 to March - 2024

Submitted By



UniStar Environment & Research Labs Pvt. Ltd.

White House, Near GIDC Office, Char Rasta, Vapi, Gujarat, India – 396195





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MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR.	TEST	UNIT	Oct	:-23	Nov	<i>i</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ma	r-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
1.	рН		8.11	7.94	8.21	8.06	8.18	8.12	8.17	8.05	8.12	7.98	8.14	8.02	IS 3025 (Part11)1983
2.	Temperature	°C	29.8	29.7	29.7	29.6	29.6	29.5	29.5	29.4	29.6	29.5	29.7	26.6	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	132	94	144	116	132	108	124	112	132	112	142	124	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.6	BDL	2.5	BDL	2.3	BDL	2.4	BDL	2.9	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.08	5.78	6.08	5.88	6.22	5.92	6.17	5.97	6.12	5.92	6.25	6.05	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.84	36.15	36.12	36.38	36.34	36.88	36.32	37.14	36.12	37.18	36.19	37.24	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO₃	μmol/L	3.23	3.06	3.39	3.23	3.06	2.9	2.42	2.26	2.24	2	3.23	2.9	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.348	0.326	0.304	0.261	0.348	0.326	0.261	0.217	0.543	0.5	0.522	0.5	APHA 23 rd Ed.,2017,4500NO₂B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.74	3.59	4.22	4.11	4.16	4.11	4.06	3.95	3.95	3.8	4.11	4.06	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	1.47	1.26	1.37	1.16	1.16	1.05	1.26	1.05	2.32	2.11	1.58	1.47	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.318	6.976	7.914	7.601	7.568	7.336	6.741	6.427	6.733	6.3	7.862	7.46	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35864	36890	36110	36910	36180	37120	35980	37060	36120	36980	36328	37118	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	32	12	24.29	8.1	28.25	12.11	20.38	4.08	24.1	8	28.03	12.01	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO	TEST PARAMETERS	UNIT	Oct	-23	Nov	-23	Dec-	23	Jan-2	24	Feb-2	24	Mar-	-24	TEST METHOD
•			SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α								Phytoplank	ton						
1.	Chlorophyll	mg/m³	3.05	2.65	2.36	2.15	2.41	2.36	3.01	2.44	2.66	2.44	3.05	3.25	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	2.1	0.96	1.4	0.86	1.61	1.25	1.79	2	1.79	1.66	2	1.56	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	125	142	111	98	124	100	106	96	120	84	109	90	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Coscinodis cus	Odentella	Nitzschia	Biddulphia	Nitzschia	Biddulphia	Thalassiot hrix	Dinophysis	Thalassiot hrix	Dinophysis	Thalassiot hrix	Dinophysis	APHA (23rd Ed. 2017)10200 F
	Number and name of		Diploneis	Rhizosolen ia	Diploneis	Rhizosolen ia	Pinnularia	Rhizosolen ia	Surirella	Pinnularia	Surirella	Pinnularia	Biddulphia	Pinnularia	
	group species		Rhizosolen ia	Coscinodis cus	Rhizosolen ia	Coscinodis cus	Rhizosolen ia	Coscinodis cus	Navicula	Thalassiot hrix	Navicula	Thalassiot hrix	Navicula	Thalassiot hrix	
	of each group		Dinophysis	Grammat ophora	Dinophysis	Grammat ophora	Dinophysis	Grammat ophora	Thallassio sira	Grammat ophora	Nitzschia	Grammat ophora	Nitzschia	Grammato phora	
			Thalassion ema	Thallassio sira	Biddulphia	Navicula	Biddulphia	Navicula	Skeletone ma	Ceratium	Skeletone ma	Ceratium	Skeletone ma	Ceratium	

В					Zoop	olankton			
1	Abudance(Po pulation)	noX103/ 100 m3	52	50	46	50	41	55	APHA (23rd Ed. 2017)10200 G
2	Name of Group		Crustacean Larvae	Oikoplura	Oikoplura	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	
	Number and name of		Egg(Fish and Shrimps)	Pinnularia	Pinnularia	Oikoplura	Oikoplura	Oikoplura	
	group species		Copepods	Copepods	Copepods	Copepods nauplii	Copepods nauplii	Copepods nauplii	
	of each group		Crustacean	Copepods nauplii	Copepods nauplii	Crustacean	Crustacean	Crustacean	
			Bivalve Larvae	Thalassionema	Thalassionema	Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	
3	Total Biomass	ml/100 m ³	15.63	14.25	15.44	15.26	14.78	13.69	



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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR.	TEST	UNIT	Oct-2	23	Nov-2	3	Dec-2	.3	Jan-2	24	Feb-	24	Mar	-24	
NO.	PARAMET ERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	TEST METHOD
С								Microbiolog	ical						
1	Total Bacterial Count	CFU/ml	24	14	21	14	23	30	24	12	9	6	10	02	APHA 23 rd Ed.2017,9215-C
2	Total Coliform	/100ml	5	6	4	4	4	1	3	9	1	0	1	4	APHA 23 rd Ed.2017,9222-B
3	Ecoli	/100ml	3	2	3	0	2	2	1	9	8	3	1	.0	IS :15185:2016
4	Enterococ cus	/100ml	1	9	2	2	1	4	1	2	Abs	ent	Abs	sent	IS:15186:2002
5	Salmonell a	/100ml	Abs	sent	Abs	ent	Abs	ent	Abs	ent	Abs	ent	Abs	sent	IS:15187:2016
6	Shigella	/100ml	Abs	sent	Abs	ent	Abs	ent	Abs	ent	Abs	ent	Abs	sent	APHA 23 rd Ed.2017,9260-E
7	Vibrio	/100ml	Abs	sent	Abs	ent	Abs	ent	Abs	ent	Abs	ent	Abs	sent	IS: 5887 (Part V):1976

Best 1

Mr. Nilesh Patel Sr. Chemist GUJARAT VAPI.

Mr. Nitin Tandel Technical Manager

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.53	0.46	0.42	0.48	0.44	0.41	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	μg/g	494.2	510.3	514.8	532.2	542.2	549.3	IS: 10158 :1982, RA.2009 Method B
3.	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	μg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.02	3.92	3.96	3.98	4.02	4.06	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	μg/g	124.9	110.3	115.4	121.2	124.4	130.8	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	μg/g	627.3	644.8	622.5	618.2	612.4	618.3	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.97	4.06	4.09	4.11	4.15	4.08	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	μg/g	38.62	42.28	42.44	41.08	42.02	41.88	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	μg/g	37.19	40.25	40.86	41.12	42.11	42.32	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	μg/g	132.2	124.3	119.2	116.34	112.5	118.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	μg/g	2.44	2.49	2.44	2.38	2.32	2.36	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	μg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007



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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D					Benth	ic Organisms			
1	Macrobenthos		Isopods	Isopods	Isopods	Foraminiferan	Foraminiferan	Foraminiferan	APHA (23rd Ed. 2017)10500
			Polychates	Polychates	Polychates	Decapods Larvae	Decapods Larvae	Decapods Larvae	С
			Sipunculids	Sipunculids	Sipunculids	Amphipods	Gastropods	Gastropods	
			Amphipods	Foraminiferan	Foraminiferan	Polychates	Polychates	Polychates	
2	MeioBenthos		Herpectacoids	Gastropods	Herpectacoids	Turbellarians	Turbellarians	Turbellarians	
			Decapods Larvae	Decapods Larvae	Decapods Larvae	Foraminiferan	Foraminiferan	Foraminiferan	
3	Population	no/m²	318	303	347	356	289	368	

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR.	TEST	UNIT	Oct	t-23	No	v-23	De	ec-23	Ja	ın-24	F	eb-24	M	ar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом											
1.	pН		8.17	7.94	8.14	7.89	8.16	7.94	8.21	8.08	8.18	8.06	8.15	8.02	IS 3025 (Part11)1983
2.	Temperature	۰C	29.7	29.6	29.6	29.5	29.5	29.4	29.4	29.3	29.5	29.4	29.6	29.5	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	136	114	122	108	128	114	134	112	142	118	136	120	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.5	BDL	2.2	BDL	2.6	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.88	5.68	5.98	5.78	6.12	5.82	6.17	5.87	6.12	5.82	6.25	5.95	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.24	36.41	35.62	36.55	35.98	36.84	36.22	37.15	36.25	37.18	36.32	37.24	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	IS 3025(Part39) 1991, Amd. 2										
8.	Nitrate as NO₃	μmol/L	2.9	2.58	3.06	2.74	3.39	3.23	2.74	2.58	2.9	2.58	3.55	3.23	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.413	0.391	0.37	0.348	0.348	0.304	0.326	0.304	0.478	0.435	0.522	0.478	APHA 23 rd Ed.,2017,4500NO₂B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.59	3.48	3.95	3.8	3.9	3.85	3.85	3.74	3.9	3.74	4.16	4.11	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	1.68	1.58	1.47	1.37	1.37	1.26	1.47	1.37	2.32	2.21	1.9	1.68	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	6.903	6.451	7.38	6.888	7.638	7.384	6.916	6.624	7.278	6.755	8.232	7.818	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	APHA 23 rd ED,2017,5520 F										
14.	Total Dissolved Solids	mg/L	36124	36960	36206	36988	36220	37110	36124	37104	36150	37110	36222	37180	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	36	16	32.38	4.05	32.29	16.14	16.3	4.08	20.1	4.1	24.02	12.01	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR.	TEST	UNIT	Oct	-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ma	r-24	TEST METHOD
NO.	PARAMETE		SURFAC	вотто	SURFAC	вотто	SURFAC	вотто	SURFAC	вотто	SURFAC	вотто	SURFAC	вотто	
	RS		E	M	E	M	E	М	E	М	E	M	E	М	
Α								Phyto	plankton						
1.	Chlorophyll	mg/m³	3.15	3.56	3.02	2.88	3.12	3.04	3	2.56	3.21	3.11	2.98	2.69	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	2.31	2.47	2.63	1.96	2.41	2.33	2.22	2.09	2.01	2.44	2.09	2.06	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	108	127	142	102	125	127	120	132	100	125	95	147	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Thalassi othrix	Pinnulari a	Thalassi othrix	Pinnulari a	Dinophy sis	Pinnulari a	Navicula	Thalassi othrix	Surirella	Thalassi othrix	Surirella	Thalassi othrix	APHA (23rd Ed. 2017)10200 F
	Number and name		Surirella	Biddulph ia	Surirella	Biddulph ia	Surirella	Biddulph ia	Skeleton ema	Surirella	Pinnular ia	Surirella	Pinnulari a	Surirella	
	of group species of		Navicula	Navicula	Navicula	Navicula	Nitzschi a	Navicula	Rhizosol enia	Navicula	Rhizosol enia	Navicula	Melosira	Navicula	
	each group		Thallassi	Rhizosol	Cyclotell	Rhizosol	Cyclotell	Rhizosol	Dinophy	Thallassi	Dinophy	Thallassi	Dinophy	Thallassi	
			osira	enia	а	enia	а	enia	sis	osira	sis	osira	sis	osira	
			Skeleton	Skeleton	Skeleton	Thallassi	Skeleton	Thallassi	Thalassi	Skeleton	Thalassi	Skeleton	Thalassi	Skeleton	
			ema	ema	ema	osira	ema	osira	onema	ema	onema	ema	onema	ema	

В					Zoo	plankton			
1	Abudance(Population)	noX103 / 100 m3	44	57	38	41	52	47	APHA (23rd Ed. 2017)10200 G
2	Name of Group		Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Crustacean Larvae	Crustacean Larvae	Crustacean Larvae	
	Number and name		Copepods	Oikoplura	Nitzschia	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	
	of group		Copepods nauplii	Copepods nauplii	Copepods nauplii	Copepods	Copepods	Copepods	
	species of		Crustacean	Crustacean	Pinnularia	Crustacean	Crustacean	Copepods nauplii	
	each group		Bivalve Larvae						
3	Total Biomass	ml/100 m³	17.36	15.36	13.25	14.13	14.39	15.78	



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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR.	TEST	UNIT	Oct-23	3	Nov-23	[Dec-23	Jan-2	4	Feb-24	N	/lar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFAC	се воттом	SURFACE	воттом	
С							Microbiologi	cal					
1	Total Bacterial	CFU/ml											APHA 23 rd
	Count		200		188		200	222		144		120	Ed.2017,9215-
													С
2	Total Coliform	/100ml											APHA 23 rd
			42		30		36	40		36		30	Ed.2017,9222-
													В
3	E.coli	/100ml	20		24		21	22		18		12	IS :15185:2016
4	Enterococcus	/100ml	18		10		18	15		Absent	A	bsent	IS:15186:2002
5	Salmonella	/100ml	Absen	t	Absent		Absent	Absen	nt	Absent	A	bsent	IS:15187:2016
6	Shigella	/100ml											APHA 23 rd
			Absen	t	Absent		Absent	Absen	nt	Absent	A	bsent	Ed.2017,9260-
													E
7	Vibrio	/100ml	Absen		Absent		Absent	Absen	.+	Absent	,	bsent	IS: 5887 (Part
			Absen	•	Absent		ADJEIIL	Absell	IL	Absent		ibsellt	V):1976

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.46	0.43	0.48	0.46	0.42	0.44	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	μg/g	582.2	588.4	546.2	538.4	550.2	561.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	μg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.07	4.16	4.09	4.02	4.11	4.03	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	μg/g	162.4	156.8	148.2	142.2	134.5	142.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	μg/g	684.4	702.2	686.5	644.4	652.2	644.5	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.02	4.11	4.08	4.03	4.09	4.02	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	μg/g	40.39	40.88	41.05	42.12	42.84	42.52	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	μg/g	40.28	40.62	41.12	42.35	42.66	42.15	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	μg/g	144.8	148.9	152.24	148.6	150.24	149.62	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	μg/g	2.18	2.24	2.18	2.24	2.33	2.28	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	μg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007



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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D						Benthic Organisms	s		
1	Macrobenthos		Decapods Larvae	Polychates	Polychates	Foraminiferan	Foraminiferan	Foraminiferan	APHA (23rd Ed.
			Isopods	Isopods	Isopods	Gastropods	Gastropods	Gastropods	2017)10500 C
			Amphipods	Amphipods	Gastropods	Isopods	Isopods	Isopods	
			Sipunculids	Sipunculids	Sipunculids	Sipunculids	Amphipods	Amphipods	
2	MeioBenthos		Foraminiferan	Foraminiferan	Decapods Larvae	Herpectacoids	Sipunculids	Sipunculids	
			Herpectacoids	Herpectacoids	Herpectacoids	Polychates	Polychates	Polychates	
3	Population	no/m²	256	350	321	308	254	307	

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

			RESOLUTION MARKINE WATER [MS EAST OF BOCKMISERNOT BETECHED 1422 40350 E 003 41 030]												
SR.	TEST	UNIT	Oct			<i>ı</i> -23	Dec		Jan		Feb			r-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	TEST INIETHOD
1.	рН		8.12	8.02	8.18	8.04	8.24	8.11	8.16	7.98	8.12	7.89	8.16	7.99	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	111	84	118	92	126	98	130	104	136	110	144	120	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.2	BDL	3.1	BDL	2.9	BDL	3.1	BDL	3.3	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.18	6.08	5.98	5.88	5.92	5.72	5.97	5.77	5.92	5.72	6.05	5.85	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.78	36.35	36.24	36.68	36.68	37.16	36.74	37.22	36.77	37.28	36.84	37.32	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO₃	μmol/L	3.06	2.74	3.55	3.39	3.23	2.9	3.06	2.9	2.74	2.42	3.06	2.9	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.435	0.391	0.456	0.413	0.391	0.348	0.326	0.304	0.348	0.326	0.391	0.37	APHA 23 rd Ed.,2017,4500NO₂B
10.	Ammonical Nitrogen as NH₃	μmol/L	3.69	3.48	4.01	3.9	3.74	3.69	3.69	3.59	3.74	3.59	4.06	4.01	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	1.79	1.68	1.58	1.47	1.37	1.26	1.58	1.37	1.47	1.26	1.58	1.37	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.185	6.611	8.016	7.703	7.361	6.938	7.076	6.794	6.828	6.336	7.511	7.28	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35880	36744	35970	36790	36130	36860	36080	36780	36210	37050	36320	37180	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	32	8	28.34	16.19	28.25	16.14	12.03	4.08	16.1	8	20.02	12.01	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR.	TEST	UNIT	Oct	:-23	Nov	<i>i</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ma	r-24	TEST METHOD
NO.	PARAMETE RS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α									Phytopl	ankton					
1.	Chlorophyll	mg/m³	3.11	2.83	3.11	3.04	2.98	3.26	2.45	3.08	2.74	2.56	2.47	2.47	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	1.65	1.52	1.65	2.01	2.01	2.18	2.06	2.41	1.87	1.45	1.66	1.47	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	147	109	147	110	148	135	132	125	154	88	140	98	APHA (23rd Ed. 2017)10200 F
4	Name of		Pinnulari	Coscinod	Pinnulari	Coscinodi	Pinnulari	Coscinodi	Melosira	Cyclotell	Melosira	Cyclotell	Melosira	Cyclotell	APHA (23rd Ed.
	Group		а	iscus	а	scus	а	scus	ivieiosira	а	ivieiosira	а	ivieiosira	а	2017)10200 F
	Number		Biddulph	Pinnulari	Biddulph	Pinnulari	Biddulph	Pinnulari	Pinnulari	Pinnulari	Pinnulari	Pinnulari	Pinnulari	Pinnulari	
	and name		ia	а	ia	а	ia	а	а	а	а	а	а	а	
	of group		Navicula	Rhizosol	Navicula	Rhizosole	Navicula	Rhizosole	Skeleton	Skeleton	Rhizosol	Skeleton	Rhizosol	Skeleton	
	species of		Navicaia	enia	Navicaia	nia	Navicaia	nia	ета	ета	enia	ета	enia	ета	
	each group		Thallassi	Dinophys	Thallassi	Dinophys	Thallassi	Dinophys	Thallassi	Thallassi	Thallassi	Thallassi	Thallassi	Thallassi	
			osira	is	osira	is	osira	is	osira	osira	osira	osira	osira	osira	
			Skeleton	Thalassio	Skeleton	Thalassio	Skeleton	Thalassio	Thalassio	Thalassio	Thalassio	Thalassio	Thalassio	Thalassio	
			ema	nema	ema	nema	ema	nema	nema	nema	nema	пета	nema	nema	

В						Zooplankton			
1	Abudance(Population)	noX103 / 100 m3	63	55	50	38	30	65	APHA (23rd Ed. 2017)10200 G
2	Name of		Copepods	Copepods	Rhizosolenia	Crustacean	Crustacean	Crustacean	
	Group		Copepods nauplii	Copepods nauplii	Crustacean Larvae	Copepods nauplii	Copepods nauplii	Copepods nauplii	
	Number and name		Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Crustacean Larvae	Crustacean Larvae	Crustacean Larvae	
	of group species of		Crustacean	Pinnularia	Oikoplura	Crustacean	Crustacean	Egg(Fish and Shrimps)	
	each group		Bivalve Larvae	Bivalve Larvae	Thalassionema	Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	
3	Total Biomass	ml/100 m³	15.69	16.35	14.23	17.12	15.47	15.47	



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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR.	TEST	UNIT	Oct	-23	Nov-2	23	Dec-2	3	Jan-24		Feb-24	M	ar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	1 SURFACE	BOTT	OM SURFACE	воттом		
С									Microbiological					
1	Total Bacterial	CFU/ml	17	Q	164		188		198		132		128	APHA 23 rd
	Count		1,	8	104		100		130		132		120	Ed.2017,9215-C
2	Total Coliform	/100ml	33		28		30		42		24		26	APHA 23 rd
			3.	•	20		30		42		24		20	Ed.2017,9222-B
3	E.coli	/100ml	23	3	20		24		20		10		20	IS :15185:2016
4	Enterococcus	/100ml	1	7	12		20		19		Absent	Al	sent	IS:15186:2002
5	Salmonella	/100ml	Abs	ent	Abse	nt	Absen	t	Absent		Absent	Al	sent	IS:15187:2016
6	Shigella	/100ml	Abs		Abse		Absen		Absent		Absent	Λ.	sent	APHA 23 rd
			ADS	ent	Abse	nt	Absen	L	Absent		Absent	A	osent	Ed.2017,9260-E
7	Vibrio	/100ml	Abs	ont	Abse	nt	Absen		Absent		Absent	A.L	scont	IS: 5887 (Part
			ADS	ent	Abse	IIL	Absen	L	Absent		Ausent	Absent	sent	V):1976

Ceres

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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.43	0.47	0.46	0.41	0.44	0.45	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	μg/g	564.2	570.3	580.4	584.6	602.2	612.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	μg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.08	4.14	4.09	4.13	4.15	4.09	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	μg/g	124.6	121.2	125.4	132.2	142.2	138.6	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	μg/g	624.2	633.4	621.2	614.4	618.2	622.5	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.12	4.15	4.08	4.01	4.06	4.12	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	μg/g	44.28	48.2	46.4	44.8	42.9	42.5	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	μg/g	38.2	40.3	38.5	38.95	40.12	41.08	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	μg/g	117.4	120.2	118.4	120.2	124.5	132.1	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	μg/g	2.44	2.51	2.46	2.38	2.44	2.38	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	μg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007



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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D					Benthic Or	ganisms			
1	Macrobenthos		Polychates	Polychates	Amphipods	Gastropods	Gastropods	Decapods Larvae	APHA (23rd Ed.
			Gastropods	Gastropods	Gastropods	Isopods	Isopods	Isopods	2017)10500 C
			Isopods	Isopods	Isopods	Amphipods	Amphipods	Amphipods	·
			Sipunculids	Sipunculids	Sipunculids	Sipunculids	Sipunculids	Sipunculids	
2	MeioBenthos		Herpectacoids	Herpectacoids	Herpectacoids	Polychates	Polychates	Foraminiferan	
			Polychates	Polychates	Polychates	Herpectacoids	Herpectacoids	Herpectacoids	
3	Population	no/m²	284	303	247	268	287	296	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR.	TEST	UNIT	Oct	:-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ma	r-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	TEST METHOD
1.	рН		8.19	8.06	8.24	8.09	8.17	8.12	8.22	8.09	8.19	8.04	8.24	8.05	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.7	29.6	29.5	29.4	29.4	29.3	29.5	29.4	29.6	29.5	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	146	118	134	112	128	110	142	118	136	122	152	128	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.4	BDL	3.2	BDL	3.1	BDL	3	BDL	3.4	BDL	3.2	BDL	IS 3025(Part 4)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.18	5.98	5.88	5.68	6.22	6.12	6.27	6.18	6.22	6.12	6.35	6.25	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.27	36.83	36.54	37.02	36.74	37.19	36.66	37.34	36.84	37.32	38.88	37.34	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd.2
8.	Nitrate as NO₃	μmol/L	2.74	2.42	2.9	2.74	2.74	2.58	3.06	2.9	3.23	3.06	3.06	2.9	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO₂	μmol/L	0.478	0.435	0.5	0.478	0.478	0.435	0.391	0.37	0.522	0.478	0.478	0.456	APHA 23 rd Ed.,2017,4500NO₂B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.9	3.74	3.85	3.69	3.8	3.74	4.16	4.11	3.85	3.64	4.01	3.9	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	2.32	2.21	1.79	1.68	1.47	1.37	1.37	1.16	2.53	2.42	2.32	2.11	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.118	6.595	7.25	6.908	7.018	6.755	7.611	7.38	7.602	7.178	7.548	7.256	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36220	37120	36290	37140	36330	37210	36228	37120	36340	37150	36460	37240	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	32	20	12.14	4.05	32.29	20.18	20.38	4.08	24.1	8	28.03	12.01	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR.	TEST	UNIT	Oct	:-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	ı-24	Feb	-24	Ma	r-24	TEST METHOD
NO.	PARAMETE RS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α								Phytopl	ankton						
1.	Chlorophyll	mg/m³	3.42	3.55	3.22	2.86	3.08	2.56	2.88	3.04	2.9	3.14	2.36	3.14	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	1.36	1.35	1.58	1.87	2.33	1.88	1.98	1.56	2.03	1.65	2.69	2	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	109	188	110	142	125	139	99	126	108	145	154	88	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Coscinod iscus	Surirella	Surirella	Surirella	Coscinod iscus	Surirella	Thallassi osira	Coscinodi scus	Thallassi osira	Coscinodi scus	Thallassi osira	Coscinodi scus	APHA (23rd Ed. 2017)10200 F
	Number and name		Diploneis	Biddulph ia	Diploneis	Biddulph ia	Diploneis	Biddulph ia	Melosira	Diploneis	Melosira	Diploneis	Melosira	Diploneis	
	of group species of		Rhizosol enia	Navicula	Thalassio thrix	Coscinodi scus	Skeleton ema	Coscinodi scus	Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	
	each group		Dinophys is	Thallassi osira	Navicula	Thallassi osira	Navicula	Thallassi osira	Rhizosol enia	Dinophys is	Rhizosol enia	Dinophys is	Rhizosol enia	Dinophys is	
			Thalassio nema	Skeleton ema	Thalassio nema	Skeleton ema	Thalassio nema	Skeleton ema	Pleurosig ma	Thalassio nema	Pleurosig ma	Thalassio nema	Pleurosig ma	Thalassio nema	

В						Zooplankton			
1	Abudance(Population)	noX103 / 100 m3	48	63	49	50	36	40	APHA (23rd Ed. 2017)10200 G
2	Name of		Oikoplura	Oikoplura	Copepods nauplii	Copepods nauplii	Copepods nauplii	Copepods nauplii	
	Group Number		Copepods nauplii	Rhizosolenia	Rhizosolenia	Crustacean Larvae	Crustacean Larvae	Egg(Fish and Shrimps)	
	and name of group		Crustacean Larvae	Crustacean Larvae	Egg(Fish and Shrimps)	Oikoplura	Oikoplura	Oikoplura	
	species of		Crustacean	Crustacean	Crustacean	Bivalve Larvae	Bivalve Larvae	Copepods nauplii	
	each group		Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	Oikoplura	Oikoplura	Oikoplura	
3	Total Biomass	ml/100 m³	17.58	16.55	16.25	15.26	14.25	14.23	



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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR.	TEST	UNIT	Oct-	23	Nov-23		Dec-23		Jan-24		Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттог	M SURFACE	воттом	SURFACE	воттом	
С								N	/licrobiological				
1	Total Bacterial	CFU/ml	258	2	248		280		258		90	88	APHA 23 rd
	Count		250		240		200		230		J 0	00	Ed.2017,9215-C
2	Total Coliform	/100ml	44		46		62		56		30	42	APHA 23 rd
			44	'	40		02		30		30	42	Ed.2017,9222-B
3	E.coli	/100ml	24		32		35		29		14	18	IS :15185:2016
4	Enterococcus	/100ml	14	,	21		23		15		Absent	Absent	IS:15186:2002
5	Salmonella	/100ml	Abse	ent	Absent		Absent		Absent		Absent	Absent	IS:15187:2016
6	Shigella	/100ml	Abse	mt	Absent		Absent		Absent		Absent	Absent	APHA 23 rd
			Abse	:111	Absent		Absent		Absent		Absent	Absent	Ed.2017,9260-E
7	Vibrio	/100ml	Abse	n.t	Absent		Absent		Absent		Absent	Absent	IS: 5887 (Part
			Abse	:110	Absent		Absent		Ausent		Ansent	Absent	V):1976

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.52	0.49	0.44	0.48	0.52	0.49	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	μg/g	648.1	640.2	610.5	612.2	625.4	611.1	IS: 10158 :1982, RA.2009 Method B
3.	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	μg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.01	4.08	4.11	4.08	4.12	4.09	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	μg/g	142.7	146.4	138.5	132.5	135.2	141.3	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	μg/g	604.5	610.2	594.5	580.5	594.2	602.4	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.06	4.12	4.15	4.1	4.12	4.05	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	μg/g	52.37	54.36	55.08	49.38	50.12	49.54	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	μg/g	42.24	44.28	44.62	42.33	44.25	44.63	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	μg/g	122.3	126.4	124.2	122.4	136.4	130.1	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	μg/g	2.64	2.71	2.64	2.58	2.45	2.36	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	μg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007



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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D					Benth	ic Organisms			
1	Macrobenthos		Foraminiferan	Amphipods	Amphipods	Sipunculids	Sipunculids	Sipunculids	APHA (23rd Ed.
			Gastropods	Gastropods	Gastropods	Decapods Larvae	Decapods Larvae	Decapods Larvae	2017)10500 C
			Isopods	Isopods	Isopods	Polychates	Polychates	Polychates	•
			Sipunculids	Sipunculids	Turbellarians	Isopods	Isopods	Foraminiferan	
2	MeioBenthos		Herpectacoids	Herpectacoids	Herpectacoids	Turbellarians	Gastropods	Gastropods	
			Polychates	Turbellarians	Decapods Larvae	Herpectacoids	Herpectacoids	Herpectacoids	
3	Population	no/m²	322	341	288	304	308	300	

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT - N 22°46'041" E 069°47'296"]

SR.	TEST	UNIT	NIT Oct-23		Nov-23		Dec-23		Jan	-24	Feb-24		Mar-24		TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
1.	pН		8.15	8.01	8.12	8.05	8.18	8.08	8.18	8.01	8.24	8.06	8.15	8.01	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	104	82	124	98	142	122	134	108	138	112	126	108	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	3.1	BDL	3.5	BDL	3.4	BDL	3.2	BDL	2.9	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.08	5.88	6.18	5.78	6.22	6.02	6.27	6.07	6.22	6.02	6.35	6.15	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.18	36.71	36.46	37.12	36.65	37.33	36.84	37.28	36.74	37.25	36.79	37.31	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd.2
8.	Nitrate as NO₃	μmol/L	2.58	2.42	3.23	3.06	3.06	2.74	2.9	2.74	3.39	3.23	3.71	3.55	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.348	0.326	0.37	0.348	0.413	0.37	0.391	0.37	0.348	0.326	0.391	0.37	APHA 23 rd Ed.,2017,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.48	3.32	3.9	3.8	4.01	3.95	4.32	4.22	3.74	3.59	4.06	3.85	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	1.9	1.68	1.79	1.58	1.68	1.58	1.79	1.68	1.47	1.26	1.68	1.47	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	6.408	6.066	7.5	7.208	7.483	7.06	7.611	7.33	7.478	7.146	8.161	7.77	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36233	37080	36274	37112	36320	37140	36120	37060	36140	37100	36186	37260	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	40	28	20.24	8.1	24.22	20.18	20.38	8.15	24.1	12.1	28.03	16.02	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT - N 22°46'041" E 069°47'296"]

SR.	TEST	UNIT	Oct	:-23	Nov-23		Dec	Dec-23		Jan-24		Feb-24		r-24	TEST METHOD
NO.	PARAMETE RS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α									Phytopl	ankton					
1.	Chlorophyll	mg/m³	3.47	2.96	3.45	2.68	2.36	2.76	3.05	3.14	3.14	3.1	3.14	3.09	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	1.63	1.75	2.14	2.07	1.23	1.66	1.68	2.03	2.11	2.66	2.45	1.22	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	100	109	152	132	110	157	105	106	1422	141	110	109	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Diploneis	Navicula	Diploneis	Navicula	Navicula	Navicula	Navicula	Pinnulari a	Navicula	Pinnulari a	Navicula	Pinnulari a	APHA (23rd Ed. 2017)10200 F
	Number		Rhizosol	Skeleton	Rhizosol	Skeleton	Biddulph	Skeleton	Biddulph	Biddulph	Biddulph	Biddulph	Biddulph	Rhizosole	
	and name		enia	ema	enia	ema	ia	ema	ia	ia	ia	ia	ia	nia	
	of group species of		Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	Nitzschia	Navicula	Nitzschia	Navicula	Odentell a	Dinophys is	
	each group		Cyclotell	Dinophys	Cyclotell	Biddulph	Cyclotell	Biddulph	Cyclotell	Thallassi	Cyclotell	Thallassi	Cyclotell	Coscinodi	
			а	is	а	ia	а	ia	а	osira	а	osira	а	scus	
			Pleurosig	Thalassio	Pleurosig	Thalassio	Pleurosig	Thalassio	Pleurosig	Skeleton	Pleurosig	Skeleton	Pleurosig	Skeleton	
			ma	nema	ma	nema	ma	nema	ma	ema	ma	ema	ma	ema	

В		Zooplankton													
1	Abudance(Population)	noX103 / 100 m3	52	44	36	44	48	41	APHA (23rd Ed. 2017)10200 G						
2	Name of		Copepods nauplii	Nitzschia	Nitzschia	Crustacean Larvae	Crustacean Larvae	Crustacean Larvae							
	Group Number	Crustacean Larvae		Crustacean Larvae	Crustacean Larvae	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)							
	and name		Oikoplura	Oikoplura	Oikoplura	Copepods	Copepods	Copepods nauplii							
	of group		Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	Crustacean	Crustacean	Crustacean							
	species of each group		Oikoplura	Oikoplura	Oikoplura	Bivalve Larvae	Bivalve Larvae	Bivalve Larvae							
3	Total Biomass	ml/100 m³	14.6	13.52	14.23	14.52	15.36	14.68							



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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR.	TEST	UNIT Oct-23		23	Nov-23 Dec-23				Jan-24 Feb-24			Mar-24		TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом		
С							Microbiological							
1	Total Bacterial	CFU/ml	286		256		242		244		140		140	APHA 23 rd
	Count												140	Ed.2017,9215-C
2	Total Coliform	/100ml	50		38		33		42		28		28	APHA 23 rd
													20	Ed.2017,9222-B
3	E.coli	/100ml	28		25		26		31		15		16	IS :15185:2016
4	Enterococcus	/100ml	14		14		21		25		4		osent	IS:15186:2002
5	Salmonella	/100ml	Abse	Absent			Absent		Absent		Absent		osent	IS:15187:2016
6	Shigella	/100ml	Absort		Absont		Abcont		Absent		Absout		sent	APHA 23 rd
		Absent		:110	Absent		Absent		Absent		Absent		Sent	Ed.2017,9260-E
7	Vibrio	/100ml	Absent		A 1		Al		A I		Alterent			IS: 5887 (Part
			Abse	ent	Absent		Absent		Absent		Absent		osent	V):1976

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT - N 22°46'041" E 069°47'296"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.57	0.53	0.48	0.45	0.48	0.52	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	μg/g	562.4	570.5	765.2	738.6	744.1	721.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	μg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.04	4.13	4.11	4.04	4.08	4.11	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	μg/g	138.2	136.2	130.5	134.6	142.2	136.5	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	μg/g	627.8	633.2	624.4	621.5	626.4	618.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.09	4.12	4.08	3.98	4.12	3.96	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	μg/g	46.97	48.23	46.85	46.12	45.98	45.36	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	μg/g	42.38	44.28	45.21	45.58	45.96	45.82	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	μg/g	118.2	123.4	119.6	119	124.1	118.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	μg/g	2.41	2.46	2.35	2.27	2.24	2.11	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	μg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007



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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT - N 22°46'041" E 069°47'296"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D						Benthic Organisms	s		
1	Macrobenthos		Amphipods	Amphipods	Amphipods	Isopods	Isopods	Isopods	APHA (23rd Ed.
			Polychates	Sipunculids	Polychates	Polychates	Polychates	Gastropods	2017)10500 C
			Isopods	Isopods	Isopods	Sipunculids	Sipunculids	Sipunculids	
			Gastropods	Gastropods	Gastropods	Amphipods	Amphipods	Amphipods	
2	MeioBenthos		Decapods Larvae	Decapods Larvae	Foraminiferan	Polychates	Herpectacoids	Herpectacoids	
			Herpectacoids	Gastropods	Herpectacoids	Foraminiferan	Foraminiferan	Polychates	
3	Population	no/m²	336	247	256	264	298	302	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR.	TEST	UNIT	Oct	:-23	Nov		Dec		Jan			-24	Ma	r-24	
NO.	PARAMETERS		SURFACE	воттом	TEST METHOD										
1.	рН		8.17	7.99	8.21	7.96	8.24	8.12	8.19	8.02	8.14	7.88	8.09	7.91	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	112	88	128	104	110	94	124	110	130	114	124	98	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.3	BDL	3.5	BDL	3.4	BDL	3.2	BDL	3.1	BDL	3.3	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.98	5.78	6.08	5.78	6.12	5.92	6.07	5.97	6.02	5.92	6.15	6.05	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.29	36.64	36.41	36.98	36.52	37.17	36.44	37.25	36.35	37.18	36.41	37.22	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	IS 3025(Part39)1991, Amd. 2										
8.	Nitrate as NO₃	μmol/L	2.9	2.74	3.06	2.58	3.55	3.23	3.39	3.06	3.23	2.9	3.39	3.06	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.522	0.478	0.435	0.413	0.456	0.435	0.435	0.413	0.435	0.391	0.478	0.435	APHA 23 rd Ed.,2017,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.85	3.64	4.11	3.95	4.06	3.95	3.95	3.85	3.69	3.48	3.95	3.85	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	2.53	2.42	2.11	2	1.9	1.79	1.58	1.47	1.79	1.68	2.11	1.9	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.272	6.858	7.605	6.943	8.066	7.615	7.775	7.323	7.355	6.771	7.818	7.345	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	APHA 23 rd ED,2017,5520 F										
14.	Total Dissolved Solids	mg/L	36122	37148	36180	37180	36240	37210	36124	37180	36220	37090	36340	37230	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	28	8	36.43	16.19	36.32	24.22	16.3	4.08	20.1	8	24.02	12.01	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR.	TEST	UNIT	Oct	-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ма	r-24	TEST METHOD
NO.	PARAMETE RS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α									Phytopl	ankton					
1.	Chlorophyll	mg/m³	2.98	3.35	3.08	3.35	3.25	3.65	3.12	2.88	2.96	3	3.09	2.49	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	1.36	2.47	2	1.78	2.44	2.44	2.14	2.04	2.14	1.25	2.19	1.78	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	106	160	108	158	156	137	128	100	120	96	87	121	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Nitzschia	Thalassio thrix	Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	Diploneis	Coscinodi scus	Diploneis	Coscinodi scus	Diploneis	Coscinodi scus	APHA (23rd Ed. 2017)10200 F
	Number and name		Pinnulari a	Surirella	Pinnulari a	Surirella	Odentell a	Surirella	Rhizosol enia	Diploneis	Rhizosol enia	Diploneis	Rhizosol enia	Diploneis	
	of group species of		Odontell a	Navicula	Dinophys is	Navicula	Dinophys is	Navicula	Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	Nitzschia	Rhizosole nia	
	each group		Dinophys	Thallassi	Pleurosig	Thalassio	Pleurosig	Thalassio	Thalassio	Dinophys	Thalassio	Dinophys	Thalassio	Dinophys	
			is	osira	ma	nema	ma	nema	thrix	is	thrix	is	thrix	is	
			Surirella	Skeleton ema	Surirella	Skeleton ema	Cyclotell a	Skeleton ema	Pleurosig ma	Thalassio nema	Pleurosig ma	Thalassio nema	Cyclotell a	Thalassio nema	

В					Zoopla	nkton			
1	Abudance(Population)	noX103 / 100 m3	50	48	53	41	25	38	APHA (23rd Ed. 2017)10200 G
2	Name of Group		Nitzschia	Nitzschia	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	
	Number		Pinnularia	Pinnularia	Coscinodiscus	Oikoplura	Oikoplura	Oikoplura	
	and name		Odontella	Odontella	Odontella	Copepods nauplii	Copepods nauplii	Copepods nauplii	
	of group		Dinophysis	Dinophysis	Dinophysis	Crustacean	Crustacean	Crustacean	
	species of each group		Surirella	Surirella	Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	
3	Total Biomass	ml/100 m ³	16.33	16.25	17.35	16.23	13.56	16.58	



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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR.	TEST	UNIT	Oct-	23	Nov-23		Dec-23		Jan-24		Feb-24	М	ar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом		
С								Mic	robiological					
1	Total Bacterial	CFU/ml	180	6	200		202		260		86		96	APHA 23 rd
	Count		100		200		202		200				50	Ed.2017,9215-C
2	Total Coliform	/100ml	33		41		36		46		12		27	APHA 23 rd
			33	·	41		30		40		12		21	Ed.2017,9222-B
3	E.coli	/100ml	30)	31		24		36		5		14	IS :15185:2016
4	Enterococcus	/100ml	21		19		22		23		Absent	Al	sent	IS:15186:2002
5	Salmonella	/100ml	Abse	ent	Absent		Absent		Absent		Absent	Al	sent	IS:15187:2016
6	Shigella	/100ml	Abse	n+	Absent		Absent		Absent		Absent	Ab	sent	APHA 23 rd
			Abse	ill	Absent		Absent							Ed.2017,9260-E
7	Vibrio	/100ml	Abse	mt	Absent		Absent		Absent		Absent	Ab	sent	IS: 5887 (Part
			Abse	ent.	Absent		Absent							V):1976

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR.	TEST	UNIT	Oct	t-23	Nov	/-23	Dec	:-23	Jan	ı - 24	Feb	-24	Ma	r-24	TECT METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	TEST METHOD
1.	pН		8.21	8.04	8.18	8.08	8.16	8.06	8.09	7.96	7.99	7.86	8.06	7.88	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.4	29.3	29.5	29.4	29.6	29.5	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	102	78	112	84	98	84	106	88	112	90	122	98	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.4	BDL	3.1	BDL	3.4	BDL	3.1	BDL	3.3	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.98	5.88	5.88	5.68	6.02	5.82	6.07	5.87	6.02	5.82	6.15	5.95	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.02	36.76	36.27	36.88	36.44	37.09	36.38	37.24	36.22	37.14	36.38	37.09	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO₃	μmol/L	3.23	2.9	3.39	3.06	3.71	3.39	3.55	3.23	3.23	3.06	3.55	3.06	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.543	0.5	0.522	0.478	0.478	0.456	0.456	0.435	0.435	0.391	0.543	0.478	APHA 23 rd Ed.,2017,4500NO₂B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.95	3.8	4.16	4.01	4.11	4.06	3.74	3.64	3.85	3.64	4.06	3.95	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	2.32	2.11	2.21	2	2.11	1.9	2.21	2	2.53	2.32	2.32	2.21	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.723	7.2	8.072	7.548	8.298	7.906	7.746	7.305	7.515	7.091	8.153	7.488	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36268	37350	36302	37410	36380	34500	36410	37320	36540	37410	36610	37540	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	24	12	28.34	8.1	32.29	28.25	20.38	12.23	24.1	16.1	28.03	20.02	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR.	TEST	UNIT	Oct	-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ма	r-24	TEST METHOD
NO.	PARAMETE RS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α									Phytopl	ankton					
1.	Chlorophyll	mg/m³	2.68	2.47	2.36	2.85	2.3	2.88	2.95	3.04	2.36	3.01	3	3.01	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	0.99	2.03	1.06	1.88	2.03	1.78	2.36	1.55	1.88	1.63	1.88	1.36	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	78	156	86	145	97	148	100	85	123	96	106	106	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Odentell a	Cyclotell a	Odentell a	Cyclotell a	Odentell a	Cyclotell a	Nitzschia	Diploneis	Nitzschia	Diploneis	Nitzschia	Diploneis	APHA (23rd Ed. 2017)10200 F
	Number and name		Rhizosol enia	Pinnulari a	Rhizosol enia	Pinnulari a	Rhizosol enia	Pinnulari a	Gramma tophora	Rhizosole nia	Gramma tophora	Rhizosole nia	Gramma tophora	Rhizosole nia	·
	of group species of		Coscinod iscus	Skeleton ema	Coscinod iscus	Skeleton ema	Coscinod iscus	Skeleton ema	Diploneis	Nitzschia	Diploneis	Nitzschia	Diploneis	Nitzschia	
	each group		Gramma	Thallassi	Gramma	Thallassi	Gramma	Thallassi	Thalassio	Cyclotell	Thalassio	Cyclotell	Thalassio	Gramma	
			tophora	osira	tophora	osira	tophora	osira	thrix	а	thrix	а	thrix	tophora	
			Thallassi	Thalassio	Thallassi	Thalassio	Thallassi	Thalassio	Pleurosig	Pleurosig	Pleurosig	Pleurosig	Pleurosig	Pleurosig	
			osira	nema	osira	nema	osira	nema	ma	ma	ma	ma	ma	ma	

В					Zoopla	nkton			
1	Abudance(Population)	noX103 / 100 m3	41	52	60	49	49	49	APHA (23rd Ed. 2017)10200 G
2	Name of		Coscinodiscus	Coscinodiscus	Odontella	Oikoplura	Oikoplura	Oikoplura	
	Group Number		Diploneis	Egg(Fish and Shrimps)	Egg(Fish and Shrimps)	Copepods nauplii	Copepods nauplii	Egg(Fish and Shrimps)	
	and name		Rhizosolenia	Rhizosolenia	Rhizosolenia	Crustacean Larvae	Crustacean Larvae	Crustacean Larvae	
	of group		Dinophysis	Bivalve Larvae	Bivalve Larvae	Crustacean	Crustacean	Crustacean	
	species of each group		Thalassionema	Thalassionema	Thalassionema	Bivalve Larvae	Bivalve Larvae	Bivalve Larvae	
3	Total Biomass	ml/100 m³	16.45	15.44	17.68	15.44	15.44	14.78	



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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR.	TEST	UNIT	Oct-	23	Nov-23		Dec-23		Jan-24		Feb-24	N	lar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом		
С								Mic	crobiological					
1	Total Bacterial	CFU/ml	202	2	274		250		266		98		98	APHA 23 rd
	Count		20	2	2/4		250		200		30		30	Ed.2017,9215-C
2	Total Coliform	/100ml	30		39		35		32		20		14	APHA 23 rd
			30						32		20		14	Ed.2017,9222-B
3	E.coli	/100ml	22		30		26		27		14		10	IS :15185:2016
4	Enterococcus	/100ml	17	1	18		20		16		10		8	IS:15186:2002
5	Salmonella	/100ml	Abse	ent	Absent		Absent		Absent		Absent	А	bsent	IS:15187:2016
6	Shigella	/100ml	Abse		Absent		Absent		Absent		Absent	Al	bsent	APHA 23 rd
			Abse	ent	Absent									Ed.2017,9260-E
7	Vibrio	/100ml	Abso	mt	Absent		Absent		Absent		Absent	A	bsent	IS: 5887 (Part
			Abse	erit.	Absent									V):1976

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

	05 15 115 1								
SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.43	0.42	0.46	0.41	0.42	0.43	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	μg/g	580.4	594.2	580.3	582.8	580.5	574.2	IS: 10158 :1982, RA.2009 Method B
3.	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	μg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.11	4.16	4.11	4.15	4.16	4.12	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	μg/g	134.1	128.5	122.6	121.2	120.4	116.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	μg/g	621.2	630.4	624.2	618.4	620.5	624.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.14	4.12	4.08	4.02	4.11	4.02	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	μg/g	46.92	42.85	42.22	41.23	42.35	41.86	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	μg/g	47.79	46.57	45.88	45.27	45.39	45.21	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	μg/g	122.2	114.2	119.4	112.2	114.5	110.6	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	μg/g	2.41	2.32	2.18	2.1	2.3	2.41	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	μg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007



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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR.	TEST	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
NO.	PARAMETERS		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D						Benthic Organisms	3		
1	Macrobenthos		Polychates	Gastropods	Gastropods	Polychates	Polychates	Polychates	APHA (23rd Ed.
			Decapods Larvae	Decapods Larvae	Decapods Larvae	Amphipods	Amphipods	Amphipods	2017)10500 C
			Isopods	Isopods	Isopods	Isopods	Isopods	Sipunculids	,
			Sipunculids	Sipunculids	Sipunculids	Sipunculids	Herpectacoids	Herpectacoids	
2	MeioBenthos		Herpectacoids	Herpectacoids	Herpectacoids	Foraminiferan	Foraminiferan	Foraminiferan	
			Turbellarians	Turbellarians	Turbellarians	Turbellarians	Turbellarians	Turbellarians	
3	Population	no/m²	240	307	335	333	300	366	

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<u>RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]</u>

SR.	TEST	UNIT	Oct	:-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ma	r-24	
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	TEST METHOD
1.	pН		8.16	8.02	8.19	8.06	8.22	8.1	8.14	7.99	8.12	7.86	8.18	8.02	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.7	29.6	29.6	29.5	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	134	106	126	114	122	110	118	106	124	108	138	112	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.2	BDL	2.9	BDL	2.6	BDL	2.8	BDL	2.9	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.88	5.68	6.18	6.08	6.02	5.92	6.07	5.97	6.02	5.92	6.15	6.05	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.89	37.06	36.21	37.14	36.39	37.31	36.44	37.38	36.33	37.32	36.31	37.18	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO₃	μmol/L	3.39	3.23	3.55	3.23	3.39	3.06	3.55	3.23	2.74	2.42	2.9	2.58	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.435	0.391	0.413	0.391	0.5	0.478	0.522	0.478	0.609	0.543	0.609	0.522	APHA 23 rd Ed.,2017,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.85	3.64	4.22	4.06	4.27	4.22	4.43	4.32	3.74	3.53	4.27	4.16	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	2.53	2.32	2.32	2.21	2.21	2.11	2	1.79	2.11	1.9	2.32	2.11	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.675	7.261	8.183	7.681	8.16	7.758	8.502	8.028	7.089	6.493	7.779	7.262	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36210	37132	36340	37150	36400	37210	36104	36940	36220	37124	36310	37220	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	28	8	20.24	8.1	28.25	24.22	16.3	8.15	20.1	12.1	24.02	16.02	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR.	TEST	UNIT	Oct	:-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	p-24	Ma	r-24	TEST METHOD
NO.	PARAMETE		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
	RS														
Α									Phytopl	ankton					
1.	Chlorophyll	mg/m³	3.05	3.07	2.36	2.85	3.68	3.54	3.06	3.11	3.09	2.63	2.98	2.5	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	1.11	1.88	1.06	1.88	2.57	2.67	2.47	2.44	2.55	1.45	1.55	1.87	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	109	134	86	145	187	174	148	64	122	117	122	114	APHA (23rd Ed. 2017)10200 F
4	Name of		Dinophys	Navicula	Odentell	Cyclotell	Cyclotell	Surirella	Odentell	Nitzschia	Odentell	Nitzschia	Odentell	Nitzschia	APHA (23rd Ed.
	Group		is	Maricala	а	а	а	Junicha	а	MICESCINA	а	Terezacina	а	MILESCHIA	2017)10200 F
	Number		Pinnulari	Skeleton	Rhizosol	Pinnulari	Pinnulari	Skeleton	Rhizosol	Pinnulari	Rhizosol	Pinnulari	Rhizosol	Pinnulari	
	and name		а	ema	enia	а	а	ema	enia	а	enia	а	enia	а	
	of group		Thalassio	Rhizosole	Coscinod	Skeleton	Thalassio	Rhizosole	Coscinod	Odontell	Coscinod	Odontell	Coscinod	Odontell	
	species of		thrix	nia	iscus	ema	thrix	nia	iscus	а	iscus	а	iscus	а	
	each group		Gramma	Dinophys	Gramma	Thallassi	Rhizosol	Cyclotell	Gramma	Dinophys	Gramma	Dinophys	Pleurosig	Dinophys	
			tophora	is	tophora	osira	enia	a	tophora	is	tophora	is	ma	is	
			Ceratium	Thalassio nema	Thallassi osira	Thalassio nema	Ceratium	Thalassio nema	Thallassi osira	Surirella	Thallassi osira	Surirella	Thallassi osira	Surirella	

В					Zoopla	nkton			
1	Abudance(Population)	noX103 / 100 m3	40	60	42	51	51	43	APHA (23rd Ed. 2017)10200 G
2	Name of		Diploneis	Diploneis	Diploneis	Decapoda	Decapoda	Decapoda	
	Group		Rhizosolenia	Rhizosolenia	Rhizosolenia	Copepods	Copepods	Oikoplura	
	Number		Nitzschia	Nitzschia	Nitzschia	Crustacean Larvae	Crustacean Larvae	Crustacean Larvae	
	and name of group		Thalassiothrix	Coscinodiscus	Coscinodiscus	Crustacean	Crustacean	Bivalve Larvae	
	species of each group		Pleurosigma	Pleurosigma	Pleurosigma	Oikoplura	Oikoplura	Oikoplura	
3	Total Biomass	ml/100 m ³	15.47	17.45	15.24	16.02	16.02	15.23	



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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR.	TEST	UNIT	Oct-	23	Nov-23		Dec-23		Jan-24		Feb-24	N	1ar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом	SURFACE	BOTTOM	1 SURFACE	воттом	SURFACE	воттом		
С								Mi	icrobiological					
1	Total Bacterial	CFU/ml	222	2	221		222		212		212		222	APHA 23 rd
	Count		22.	2	221		222		212		212		222	Ed.2017,9215-C
2	Total Coliform	/100ml	40		39		28		33		33		40	APHA 23 rd
			40				20						40	Ed.2017,9222-B
3	E.coli	/100ml	33		30		26		28		28		30	IS :15185:2016
4	Enterococcus	/100ml	24	,	16		14		21		21		18	IS:15186:2002
5	Salmonella	/100ml	Abse	ent	Absent		Absent		Absent		Absent	А	bsent	IS:15187:2016
6	Shigella	/100ml	Abse	mt	Absent		Absent		Absent		Absent	А	bsent	APHA 23 rd
			Abse	ent	Absent									Ed.2017,9260-E
7	Vibrio	/100ml	Abso	mt	Absent		Absent		Absent		Absent	А	bsent	IS: 5887 (Part
			Abse	ent.	Absent									V):1976

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

CD	TECT	UNIT	Oct	. 22	Nov			:-23		-24	F-1-	<u> </u>	0.40	. 24	
SR.	TEST	UNII		_	_	-		-						r-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	воттом									
1.	pН		8.16	7.94	8.12	7.88	8.19	7.98	8.24	8.08	8.19	8.04	8.14	7.98	IS 3025 (Part11)1983
2.	Temperature	۰C	29.8	29.7	29.7	29.6	29.6	29.5	29.4	29.2	29.5	29.3	29.6	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	118	98	132	110	124	108	116	102	112	108	134	120	APHA 23 rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.7	BDL	3.4	BDL	2.8	BDL	3.1	BDL	3.4	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.18	5.78	6.18	5.98	5.92	5.82	5.97	5.87	5.92	5.82	6.05	5.95	APHA 23 rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.08	36.74	36.22	36.97	36.34	37.11	36.48	37.38	36.44	37.32	36.48	37.35	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2								
8.	Nitrate as NO₃	μmol/L	3.23	2.9	3.39	3.06	3.23	3.06	3.39	3.06	2.9	2.74	3.23	2.9	APHA 23 rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO ₂	μmol/L	0.609	0.543	0.565	0.522	0.522	0.5	0.5	0.456	0.522	0.478	0.565	0.543	APHA 23 rd Ed.,2017,4500NO₂B
10.	Ammonical Nitrogen as NH ₃	μmol/L	3.74	3.53	4.27	4.16	4.01	3.95	4.22	4.06	3.85	3.64	4.32	4.22	APHA 23 rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO ₄	μmol/L	2.11	1.9	2	1.79	2.32	2.21	1.68	1.58	2.53	2.42	2.32	2.11	APHA 23 rd Ed.,2017,4500-P, D
12.	Total Nitrogen	μmol/L	7.579	6.973	8.225	7.742	7.762	7.51	8.11	7.576	7.272	6.858	8.115	7.663	APHA 23 rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	APHA 23 rd ED,2017,5520 F								
14.	Total Dissolved Solids	mg/L	36138	37122	36210	37140	36270	37180	36120	37090	36324	37210	36410	37390	APHA 23 rd Ed.,2017, 2540- C
15.	COD	mg/L	24	12	36.43	16.19	24.22	20.18	8.15	4.08	12.1	8	16.02	12.01	APHA 23 rd Ed.,2017, 5220-B



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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR.	TEST	UNIT	Oct	-23	Nov	<i>ı</i> -23	Dec	:-23	Jan	-24	Feb	-24	Ма	r-24	TEST METHOD
NO.	PARAMETE RS		SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
Α									Phytopl	ankton					
1.	Chlorophyll	mg/m³	2.22	3.26	2.35	3	2.58	2.98	2.58	3.07	2.64	3.07	2.58	2.87	APHA (23rd Ed. 2017)10200 H
2.	Phaeophyti n	mg/m³	0.85	1.63	1.05	1.77	1.44	2.06	2	2.63	1.74	2.4	1.09	1.44	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	90	145	101	123	129	152	162	111	135	102	74	124	APHA (23rd Ed. 2017)10200 F
4	Name of Group		Ceratium	Melosira	Ceratium	Rhizosole nia	Surirella	Rhizosole nia	Skeleton ema	Odentell a	Skeleton ema	Odentell a	Skeleton ema	Odentell a	APHA (23rd Ed. 2017)10200 F
	Number		Pinnulari	Dinophys	Pinnulari	Dinophys	Pinnulari	Dinophys	Gramma	Rhizosole	Gramma	Rhizosole	Gramma	Rhizosole	
	and name		а	is	а	is	а	is	tophora	nia	tophora	nia	tophora	nia	
	of group species of		Odontell a	Skeleton ema	Odontell a	Skeleton ema	Gramma tophora	Skeleton ema	Nitzschia	Coscinodi scus	Nitzschia	Coscinodi scus	Nitzschia	Coscinodi scus	
	each group		Thalassio	Thallassi	Thalassio	Thallassi	Thalassio	Thallassi	Thalassio	Gramma	Thalassio	Gramma	Coscinod	Pinnulari	
			thrix	osira	thrix	osira	thrix	osira	thrix	tophora	thrix	tophora	iscus	а	
			Thallassi	Thalassio	Thallassi	Melosira	Rhizosol	Melosira	Pleurosig	Thallassi	Pleurosig	Thallassi	Pleurosig	Thallassi	
			osira	nema	osira	ivieiosira	enia	ivieiosira	ma	osira	ma	osira	ma	osira	

В						Zooplankton			
1	Abudance(Population)	noX103 / 100 m3	39	41	55	49	49	32	APHA (23rd Ed. 2017)10200 G
2	Name of		Nitzschia	Nitzschia	Nitzschia	Copepods	Copepods	Copepods	
	Group		Grammatophora	Grammatophora	Grammatophora	Oikoplura	Oikoplura	Oikoplura	
	Number and name of group		Diploneis	Diploneis	Egg(Fish and Shrimps)	Crustacean Larvae	Crustacean Larvae	Crustacean Larvae	
	species of		Thalassiothrix	Thalassiothrix	Thalassiothrix	Crustacean	Crustacean	Crustacean	
	each group		Pleurosigma	Pleurosigma	Pleurosigma	Bivalve Larvae	Bivalve Larvae	Egg(Fish and Shrimps)	
3	Total Biomass	ml/100 m³	14.56	15.15	16.23	15.23	15.23	14.56	



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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR.	TEST	UNIT	Oct-	23	Nov-23		Dec-23		Jan-24		Feb-24	М	ar-24	TEST METHOD
NO.	PARAMETERS		SURFACE	воттом	SURFACE	BOTTOM	1 SURFACE	BOTTON	1 SURFACE	воттом	SURFACE	воттом		
С								Mi	icrobiological					
1	Total Bacterial	CFU/ml	202	,	240		256		288		288		248	APHA 23 rd
	Count		202	-	240		250		200		200		L-10	Ed.2017,9215-C
2	Total Coliform	/100ml	50		50		44		43		43		52	APHA 23 rd
			50	'	50		44		45		43		52	Ed.2017,9222-B
3	E.coli	/100ml	42		33		32		36		36		41	IS :15185:2016
4	Enterococcus	/100ml	19		21		17		26		26		31	IS:15186:2002
5	Salmonella	/100ml	Abse	ent	Absent		Absent		Absent		Absent	Al	osent	IS:15187:2016
6	Shigella	/100ml	Abse		Absort		Absont		Absent		Absent			APHA 23 rd
			Abse	ent	Absent	•	Absent		Absent		Absent	A	osent	Ed.2017,9260-E
7	Vibrio	/100ml	Abse	mt	Absent		Absent		Absent		Absent	Λ.	osent	IS: 5887 (Part
			Abse	:IIL	Absent		Absent		Ausent		Ansent	A	JSEIIL	V):1976

Quel

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Mr. Nitin Tandel Technical Manager



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RESULTS OF ETP OUTLET WATER

						ERMINAL				
SR.NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	GPCB	TEST METHOD
			21-04-2023	29-05-2023	29-06-2023	25-07-2023	25-08-2023	14-09-2023	Limit	
1.	Colour	Pt. Co. Scale	50	40	50	40	50	50	100	IS 3025(Part 4)
2.	рН @ 27°C		7.41	6.74	7.26	7.36	7.44	7.52	6.5 to 8.5	APHA 23 rd Ed.,2017,4500- H ⁺ B
3.	Temperature	٥C	30	31	30.5	30	30	30	40	IS 3025(Part 9)1984
4.	Total Suspended Solid	mg/L	22	24	26	24	18	32	100	APHA 23 rd Ed.,2017,2540 -D
5.	Total Dissolved Solids	mg/L	1106	732	804	810	822	840	2100	APHA 23 rd Ed.,2017,2540- C
6.	COD	mg/L	72.6	76.2	74.3	89.4	80.9	83.6	100	IS 3025(Part 58)2006
7.	BOD (3 days at 27 °C)	mg/L	20	23	25	27	24	23	30	IS 3025(Part 44)1993Amd.01
8.	Chloride (as Cl) -	mg/L	480.9	332.5	420.1	411.5	391	337.3	600	IS 3025(PART 32) 1988
9.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	10	IS 3025(Part39)1991, Amd. 2
10.	Sulphate (as SO ₄)	mg/L	102	43.3	40.2	36.6	42.2	46.4	1000	IS 3025(Part 24)1986
11.	Ammonical Nitrogen	mg/L	22.2	28.4	24.2	22.8	20.6	28.8	50	IS 3025(Part 34)1988,
12.	Phenolic Compound	mg/L	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	1	IS 3025(Part 43)1992, Amd.2
13.	Copper as Cu	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	3	IS 3025(Part 42)1992amd.01,
14.	Lead as Pb	mg/L	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	0.1	APHA 23 rd Ed.,2017,3111-B



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					LIQUID T	ERMINAL			GPCB Limit	TEST METHOD
SR.NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24		
			21-04-2023	29-05-2023	29-06-2023	25-07-2023	25-08-2023	14-09-2023		
15.	Sulphide as S	mg/L	0.62	BDL	BDL	BDL	BDL	BDL	2	APHA 23 rd Ed.,2017,4500 S ⁻² F
16.	Cadmium as Cd	mg/L	BDL(MDL:0.003)	BDL(MDL:0.003)	BDL(MDL:0.003)	BDL(MDL:0.003)	BDL(MDL:0.003)	BDL(MDL:0.003)	2	APHA 23 rd Ed.,2017,3111-B
17.	Fluoride as F	mg/L	1.03	0.82	0.94	0.86	0.74	0.66	2	APHA 23 rd Ed.,2017,4500 F, D
18.	Residual Chlorine	mg/L	0.74	0.88	0.78	0.64	0.94	0.82	0.5 Min.	APHA 23 rd Ed.,2017,4500-Cl- B
19.	Percent Sodium	%	48.51	48.05	46.74	45.72	46.93	46.94	60	By Calculation
20.	Sodium Absorption ratio		3.51	3.09	2.67	2.86	2.64	2.61	26	By Calculation

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			Results of A	<mark>mbient Air Qua</mark>	lity Monitoring			
Name	e of Location	CT3 RMU-2						
	Date of				rameter with Res			
Sr. No.	Monitoring	PM ₁₀ μg/m³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³
1.	02-10-2023	84.39	36.85	28.57	32.39	0.92		NOT DETECTED
2.	05-10-2023	80.25	35.79	31.12	34.85	1.06	4.74	NOT DETECTED
3.	09-10-2023	85.20	37.85	32.02	35.76	0.97	4.29	NOT DETECTED
4.	12-10-2023	79.36	35.13	29.41	33.64	1.00	4.57	NOT DETECTED
5.	16-10-2023	83.56	38.10	31.54	36.83	1.05	4.87	NOT DETECTED
6.	19-10-2023	84.84	34.37	28.59	32.16	0.95	4.74	NOT DETECTED
7.	23-10-2023	80.93	36.73	30.16	35.74	1.00	4.98	NOT DETECTED
8.	26-10-2023	83.79	33.91	26.84	31.83	0.94	4.52	NOT DETECTED
9.	30-10-2023	85.47	36.94	27.89	31.25	1.00	4.23	NOT DETECTED
10.	02-11-2023	80.12	34.23	26.96	31.28	1.00	5.13	NOT DETECTED
11.	06-11-2023	83.51	36.58	28.42	33.88	1.05	5.25	NOT DETECTED
12.	09-11-2023	81.33	35.05	26.13	30.97	1.02	4.86	NOT DETECTED
13.	13-11-2023	78.49	33.64	24.85	29.60	0.97	4.53	NOT DETECTED
14.	16-11-2023	80.94	35.26	26.62	31.78	1.00	4.76	NOT DETECTED
15.	20-11-2023	84.63	37.89	28.76	33.52	1.04	5.29	NOT DETECTED



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Nam	e of Location	CT3 RMU-2						
	Date of			Pa	rameter with Resi	ults		
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m ³	NO₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³
16.	23-11-2023	81.76	35.25	27.10	31.49	1.00	4.88	NOT DETECTED
17.	27-11-2023	74.68	32.09	24.95	29.18	0.95	4.49	NOT DETECTED
18.	30-11-2023	76.29	34.41	26.37	32.51	0.98	4.64	NOT DETECTED
19.	02-12-2023	78.36	32.19	25.75	30.21	1.11	5.10	NOT DETECTED
20.	06-12-2023	80.96	34.52	27.13	31.98	1.14	5.26	NOT DETECTED
21.	09-12-2023	83.56	36.91	30.6	34.69	1.16	5.59	NOT DETECTED
22.	13-12-2023	81.10	34.31	28.74	32.58	1.13	5.42	NOT DETECTED
23.	16-12-2023	83.92	36.42	29.59	32.05	1.15	5.79	NOT DETECTED
24.	20-12-2023	80.46	33.87	26.43	30.91	1.12	5.62	NOT DETECTED
25.	23-12-2023	82.63	35.29	27.55	32.4	1.14	5.92	NOT DETECTED
26.	27-12-2023	84.10	37.33	29.15	34.62	1.16	6.12	NOT DETECTED
27.	01-01-2024	80.74	37.29	30.74	35.62	1.17		NOT DETECTED
28.	04-01-2024	83.15	35.61	27.42	31.81	1.14	5.35	NOT DETECTED
29.	08-01-2024	81.49	32.27	26.12	30.11	1.12	5.2	NOT DETECTED
30.	11-01-2024	84.56	34.2	28.62	32.54	1.15	5.26	NOT DETECTED
31.	15-01-2024	80.77	31.63	25.91	30.73	1.12	4.97	NOT DETECTED



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Name	e of Location	CT3 RMU-2						
	Date of			Pa	rameter with Res	ults		
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO₂ μg/m³	NO ₂ μg/m ³	CO mg/m ³	HC μg/m³	Benzene μg/m³
32.	18-01-2024	84.26	35.27	30.46	35.67	1.18	5.42	NOT DETECTED
33.	22-01-2024	82.52	32.84	28.71	33.41	1.16	5.36	NOT DETECTED
34.	25-01-2024	83.79	36.41	31.11	36.07	1.20	5.74	NOT DETECTED
35.	29-01-2024	84.57	34.62	29.88	34.28	1.17	5.52	NOT DETECTED
36.	01-02-2024	83.55	35.07	32.23	36.14	1.20	5.94	NOT DETECTED
37.	05-02-2024	80.49	33.84	29.87	34.52	1.16	5.62	NOT DETECTED
38.	08-02-2024	82.62	31.29	31.41	35.86	1.15	5.77	NOT DETECTED
39.	12-02-2024	77.21	29.74	28.95	32.72	1.12	5.41	NOT DETECTED
40.	15-02-2024	80.73	31.82	29.38	33.64	1.16	5.59	NOT DETECTED
41.	19-02-2024	84.65	34.83	31.26	36.10	1.22	5.88	NOT DETECTED
42.	22-02-2024	79.19	32.5	27.89	32.76	1.19	5.34	NOT DETECTED
43.	26-02-2024	76.53	30.48	27.15	32.91	1.13	5.13	NOT DETECTED
44.	29-02-2024	81.92	33.46	29.21	33.89	1.17	5.47	NOT DETECTED
45.	04-03-2024	83.38	33.56	29.13	34.82	1.16	5.27	NOT DETECTED
46.	07-03-2024	80.63	29.86	27.67	31.90	1.15	4.96	NOT DETECTED
47.	11-03-2024	73.85	28.76	24.91	29.74	1.12	4.83	NOT DETECTED



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Name	e of Location	CT3 RMU-2							
	Date of		Parameter with Results						
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m³	HC μg/m³	Benzene μg/m³	
48.	14-03-2024	83.47	32.25	28.83	32.38	1.17	5.31	NOT DETECTED	
49.	18-03-2024	76.58	30.13	26.48	30.65	1.14	5.10	NOT DETECTED	
50.	21-03-2024	79.62	33.78	28.85	33.27	1.11	5.25	NOT DETECTED	
51.	25-03-2024	74.38	29.42	25.56	30.17	1.10	4.89	NOT DETECTED	
52.	28-03-2024	77.81	32.39	28.12	31.84	1.15	5.13	NOT DETECTED	
	ble Value as per	100.0	60.0	80.0	80.0	2.0		5.0	
Tes	st Method	IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10	Gas analyzer	IS – 5182, Part – 11	

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Results of Ambient Air Quality Monitoring										
Name	e of Location	Near Fire Station	1							
	Date of			Pai	rameter with Resu	ults				
Sr. No.	Monitoring	PM ₁₀ μg/m³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO₂ μg/m³	CO mg/m³	HC μg/m³	Benzene μg/m³		
1.	02-10-2023	79.31	32.15	27.81	30.99	0.91		NOT DETECTED		
2.	05-10-2023	83.28	33.51	26.94	32.54	0.87	3.46	NOT DETECTED		
3.	09-10-2023	85.10	32.56	30.12	35.47	0.95	3.25	NOT DETECTED		
4.	12-10-2023	78.14	35.73	28.15	33.37	1.00	3.34	NOT DETECTED		
5.	16-10-2023	75.84	37.47	30.23	34.92	1.00	3.16	NOT DETECTED		
6.	19-10-2023	79.62	34.59	28.53	32.57	1.04	3.47	NOT DETECTED		
7.	23-10-2023	74.22	36.64	26.99	35.98	1.05	3.48	NOT DETECTED		
8.	26-10-2023	81.26	33.38	28.85	33.47	0.93	3.26	NOT DETECTED		
9.	30-10-2023	84.79	31.72	26.43	31.85	0.90	3.10	NOT DETECTED		
10.	02-11-2023	80.53	34.36	26.58	33.63	0.95	3.58	NOT DETECTED		
11.	06-11-2023	84.92	37.26	28.92	35.26	1.00	3.70	NOT DETECTED		
12.	09-11-2023	83.46	36.52	27.86	34.10	0.97	3.64	NOT DETECTED		
13.	13-11-2023	81.82	34.40	26.31	32.55	0.95	3.42	NOT DETECTED		
14.	16-11-2023	78.63	33.16	25.47	30.41	0.90	3.30	NOT DETECTED		
15.	20-11-2023	75.41	31.73	24.75	29.99	0.86	3.26	NOT DETECTED		



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Nam	e of Location	Near Fire Station	n					
	Date of			Pa	rameter with Res	ults		
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO₂ μg/m³	NO ₂ μg/m ³	CO mg/m ³	HC μg/m³	Benzene μg/m³
16.	23-11-2023	77.35	34.62	27.32	32.76	0.92	3.49	NOT DETECTED
17.	27-11-2023	72.86	30.91	24.59	29.74	0.85	3.15	NOT DETECTED
18.	30-11-2023	75.63	32.5	26.35	30.52	0.91	3.37	NOT DETECTED
19.	02-12-2023	75.36	30.59	25.12	30.94	0.84	3.51	NOT DETECTED
20.	06-12-2023	73.69	29.46	24.62	28.65	0.80	3.28	NOT DETECTED
21.	09-12-2023	78.25	31.62	26.35	31.26	0.88	3.60	NOT DETECTED
22.	13-12-2023	80.42	33.56	28.64	32.49	0.91	3.64	NOT DETECTED
23.	16-12-2023	84.30	34.89	29.44	34.71	0.94	3.70	NOT DETECTED
24.	20-12-2023	83.02	34.81	29.02	33.86	0.89	3.66	NOT DETECTED
25.	23-12-2023	80.15	32.41	27.52	32.48	0.80	3.47	NOT DETECTED
26.	27-12-2023	78.63	30.96	25.48	30.26	0.78	3.30	NOT DETECTED
27.	01-01-2024	76.51	29.18	25.69	29.37	0.81		NOT DETECTED
28.	04-01-2024	79.62	31.43	27.50	31.86	0.86	3.76	NOT DETECTED
29.	08-01-2024	81.59	33.52	28.97	32.06	0.89	3.89	NOT DETECTED
30.	11-01-2024	75.92	28.45	25.26	28.42	0.76	3.52	NOT DETECTED
31.	15-01-2024	77.57	30.91	26.48	30.29	0.78	3.67	NOT DETECTED



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Nam	e of Location	Near Fire Station	า					
	Date of			Pai	rameter with Resi	ults		
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m³	HC μg/m³	Benzene μg/m³
32.	18-01-2024	79.65	32.46	28.54	32.11	0.85	3.76	NOT DETECTED
33.	22-01-2024	82.73	33.47	29.26	33.56	0.90	3.85	NOT DETECTED
34.	25-01-2024	78.26	30.55	26.42	30.64	0.82	3.71	NOT DETECTED
35.	29-01-2024	75.37	29.93	24.35	28.63	0.77	3.39	NOT DETECTED
36.	01-02-2024	78.32	28.61	26.35	28.94	0.75	3.53	NOT DETECTED
37.	05-02-2024	81.56	32.11	29.54	32.29	0.83	3.86	NOT DETECTED
38.	08-02-2024	79.48	30.26	28.09	31.74	0.78	3.47	NOT DETECTED
39.	12-02-2024	75.73	28.91	26.62	30.11	0.74	3.38	NOT DETECTED
40.	15-02-2024	72.58	27.73	25.42	29.59	0.7	3.24	NOT DETECTED
41.	19-02-2024	75.16	29.1	26.85	29.13	0.76	3.40	NOT DETECTED
42.	22-02-2024	80.29	32.46	30.13	33.40	0.81	3.81	NOT DETECTED
43.	26-02-2024	73.84	28.38	26.91	31.42	0.72	3.42	NOT DETECTED
44.	29-02-2024	76.52	30.21	28.79	32.47	0.79	3.68	NOT DETECTED
45.	04-03-2024	71.94	27.79	25.37	29.52	0.69	3.07	NOT DETECTED
46.	07-03-2024	74.35	29.84	28.12	32.57	0.73	3.15	NOT DETECTED
47.	11-03-2024	70.54	27.27	25.94	28.77	0.67	3.24	NOT DETECTED



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Continue...

Name	e of Location	Near Fire Station	1						
	Date of		Parameter with Results						
Sr. No.	Monitoring	PM ₁₀ μg/m³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m ³	CO mg/m³	HC μg/m³	Benzene μg/m³	
48.	14-03-2024	72.95	30.71	27.47	32.81	0.70	3.42	NOT DETECTED	
49.	18-03-2024	79.13	32.47	24.81	28.67	0.75	3.68	NOT DETECTED	
50.	21-03-2024	75.46	30.68	28.45	33.13	0.78	3.52	NOT DETECTED	
51.	25-03-2024	77.93	32.57	25.89	29.93	0.72	3.40	NOT DETECTED	
52.	28-03-2024	81.24	27.83	27.64	32.28	0.79	3.57	NOT DETECTED	
	ble Value as per	100.0	60.0	80.0	80.0	2.0		5.0	
Tes	st Method	IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10	Gas analyzer	IS – 5182, Part – 11	

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Nikunj D. Patel (Chemist)



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	Results of Ambient Air Quality Monitoring										
Name	of Location	ADANI PORT – T	UG Berth 600 KL	Pupm House							
	Date of		Parameter with Results								
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m³	HC μg/m³	Benzene μg/m³			
1.	02-10-2023	84.63	34.59	26.58	30.15	1.00		NOT DETECTED			
2.	05-10-2023	82.39	32.65	25.97	29.76	0.97	3.86	NOT DETECTED			
3.	09-10-2023	80.98	36.74	28.47	31.83	1.00	4.37	NOT DETECTED			
4.	12-10-2023	76.84	34.10	30.26	33.94	1.05	4.50	NOT DETECTED			
5.	16-10-2023	78.63	34.90	28.57	32.69	1.09	4.56	NOT DETECTED			
6.	19-10-2023	85.70	36.85	29.98	32.46	1.10	4.10	NOT DETECTED			
7.	23-10-2023	80.25	34.75	27.68	30.05	1.07	4.63	NOT DETECTED			
8.	26-10-2023	84.64	32.39	26.14	29.65	1.03	4.21	NOT DETECTED			
9.	30-10-2023	85.36	34.52	25.45	27.86	1.00	3.86	NOT DETECTED			
10.	02-11-2023	82.26	35.65	28.27	32.18	0.99	4.13	NOT DETECTED			
11.	06-11-2023	79.65	33.42	26.19	30.48	0.95	3.89	NOT DETECTED			
12.	09-11-2023	83.16	36.48	29.62	33.55	1.02	4.35	NOT DETECTED			
13.	13-11-2023	80.75	32.10	25.47	29.73	1.00	3.76	NOT DETECTED			
14.	16-11-2023	82.92	36.83	28.24	31.92	1.05	4.50	NOT DETECTED			
15.	20-11-2023	78.85	31.93	26.82	30.13	0.98	4.19	NOT DETECTED			



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Nam	e of Location	ADANI PORT – TUG Berth 600 KL Pupm House							
	Date of			Pa	rameter with Resi	ults			
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO₂ μg/m³	NO ₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³	
16.	23-11-2023	80.20	33.52	28.76	33.38	1.00	4.36	NOT DETECTED	
17.	27-11-2023	73.86	31.49	24.84	28.40	0.92	3.76	NOT DETECTED	
18.	30-11-2023	78.58	32.73	26.13	29.62	0.95	3.97	NOT DETECTED	
19.	02-12-2023	76.35	31.84	25.13	30.58	0.95	3.95	NOT DETECTED	
20.	06-12-2023	81.63	33.29	27.86	31.96	1.00	4.32	NOT DETECTED	
21.	09-12-2023	78.91	32.10	25.32	31.42	0.98	4.12	NOT DETECTED	
22.	13-12-2023	80.53	33.75	27.43	31.77	1.00	4.36	NOT DETECTED	
23.	16-12-2023	83.62	35.46	29.31	33.72	1.03	4.59	NOT DETECTED	
24.	20-12-2023	81.96	32.79	28.16	32.63	1.00	4.37	NOT DETECTED	
25.	23-12-2023	83.67	34.99	29.92	34.59	1.06	4.46	NOT DETECTED	
26.	27-12-2023	80.49	31.26	27.51	31.25	1.00	4.25	NOT DETECTED	
27.	01-01-2024	82.22	34.59	29.14	34.49	1.08		NOT DETECTED	
28.	04-01-2024	79.62	32.18	26.54	31.52	1.05	3.87	NOT DETECTED	
29.	08-01-2024	84.61	35.62	30.43	34.72	1.10	4.06	NOT DETECTED	
30.	11-01-2024	80.74	32.14	28.69	32.87	1.06	3.91	NOT DETECTED	
31.	15-01-2024	82.90	34.82	29.31	34.09	1.09	3.98	NOT DETECTED	



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Name	e of Location	ADANI PORT – TUG Berth 600 KL Pupm House							
	Date of			Pa	rameter with Res	ults			
Sr. No.	Monitoring	PM ₁₀ μg/m³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³	
32.	18-01-2024	77.29	31.71	26.84	31.27	1.00	3.74	NOT DETECTED	
33.	22-01-2024	80.25	33.06	28.42	33.72	1.05	3.87	NOT DETECTED	
34.	25-01-2024	84.36	35.13	30.21	34.43	1.11	4.26	NOT DETECTED	
35.	29-01-2024	81.73	33.59	28.94	34.67	1.08	4.12	NOT DETECTED	
36.	01-02-2024	80.96	33.31	28.42	33.21	1.12	4.25	NOT DETECTED	
37.	05-02-2024	77.64	30.72	26.84	31.43	1.07	3.86	NOT DETECTED	
38.	08-02-2024	81.29	32.88	29.13	34.57	1.15	4.12	NOT DETECTED	
39.	12-02-2024	84.38	35.62	31.46	36.91	1.18	4.39	NOT DETECTED	
40.	15-02-2024	82.05	33.73	29.85	34.56	1.12	4.30	NOT DETECTED	
41.	19-02-2024	79.63	32.47	28.38	33.17	1.10	3.87	NOT DETECTED	
42.	22-02-2024	75.15	30.26	26.92	31.60	1.06	3.75	NOT DETECTED	
43.	26-02-2024	80.31	33.59	30.64	35.73	1.11	4.18	NOT DETECTED	
44.	29-02-2024	77.39	31.47	28.73	33.42	1.08	3.91	NOT DETECTED	
45.	04-03-2024	80.63	31.36	30.11	35.47	1.10	4.46	NOT DETECTED	
46.	07-03-2024	76.27	29.84	28.35	32.73	1.04	4.15	NOT DETECTED	
47.	11-03-2024	81.73	33.11	29.74	34.12	1.07	4.63	NOT DETECTED	



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Name	e of Location	ADANI PORT – T	UG Berth 600 KL F	Pupm House				
	Date of			Pa	rameter with Resu	ults		
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m ³	NO₂ μg/m³	CO mg/m³	HC μg/m³	Benzene µg/m³
48.	14-03-2024	84.12	35.62	32.17	37.65	1.14	4.76	NOT DETECTED
49.	18-03-2024	80.93	32.19	30.42	35.34	1.10	4.32	NOT DETECTED
50.	21-03-2024	84.31	33.65	33.47	38.54	1.13	4.19	NOT DETECTED
51.	25-03-2024	82.17	31.74	30.85	38.42	1.08	4.35	NOT DETECTED
52.	28-03-2024	86.42	34.17	32.75	36.13	1.12	4.64	NOT DETECTED
	ble Value as per IAAQMS	100.0	60.0	80.0	80.0	2.0		5.0
Tes	st Method	IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10	Gas analyzer	IS – 5182, Part – 11

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Results of Ambient Air Quality Monitoring										
Name	e of Location	PUB / Adani Hou	ise							
	Date of			Pa	rameter with Res	ults				
Sr. No.	Monitoring	PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³		
1.	02-10-2023	71.26	28.95	21.30	24.58	0.75		NOT DETECTED		
2.	05-10-2023	68.79	26.35	20.57	23.97	0.70	2.56	NOT DETECTED		
3.	09-10-2023	73.24	26.36	20.75	25.62	0.68	2.87	NOT DETECTED		
4.	12-10-2023	76.48	29.60	22.42	27.25	0.70	2.74	NOT DETECTED		
5.	16-10-2023	81.63	30.12	21.87	25.64	0.80	2.97	NOT DETECTED		
6.	19-10-2023	78.42	28.79	23.55	28.10	0.77	2.87	NOT DETECTED		
7.	23-10-2023	75.11	25.38	20.32	25.86	0.71	2.58	NOT DETECTED		
8.	26-10-2023	80.65	29.81	22.58	26.84	0.78	3.10	NOT DETECTED		
9.	30-10-2023	77.26	27.44	22.93	26.76	0.75	2.89	NOT DETECTED		
10.	02-11-2023	74.17	29.55	23.31	28.29	0.78	2.60	NOT DETECTED		
11.	06-11-2023	72.35	27.42	22.50	26.95	0.72	2.45	NOT DETECTED		
12.	09-11-2023	75.67	29.93	24.82	28.43	0.80	2.76	NOT DETECTED		
13.	13-11-2023	78.15	31.48	25.63	30.15	0.85	2.85	NOT DETECTED		
14.	16-11-2023	74.51	29.20	23.26	28.73	0.81	2.65	NOT DETECTED		
15.	20-11-2023	72.88	27.41	21.85	26.38	0.76	2.46	NOT DETECTED		



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Nam	e of Location	PUB / Adani Hou	use					
	Date of			Pa	rameter with Res	ults		
Sr. No.	Monitoring	PM ₁₀ μg/m³	PM _{2.5} μg/m ³	SO₂ μg/m³	NO ₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³
16.	23-11-2023	75.63	30.19	24.48	29.83	0.80	2.71	NOT DETECTED
17.	27-11-2023	70.11	26.54	21.10	26.55	0.72	2.40	NOT DETECTED
18.	30-11-2023	73.26	28.79	23.92	28.37	0.76	2.53	NOT DETECTED
19.	04-12-2023	72.47	27.91	21.82	25.73	0.70	2.39	NOT DETECTED
20.	07-12-2023	76.29	30.31	23.58	28.19	0.75	2.45	NOT DETECTED
21.	11-12-2023	80.53	30.95	24.04	28.97	0.81	2.61	NOT DETECTED
22.	14-12-2023	82.65	31.10	25.31	30.26	0.82	2.78	NOT DETECTED
23.	18-12-2023	78.71	28.27	23.98	28.21	0.79	2.65	NOT DETECTED
24.	21-12-2023	75.20	27.52	21.93	25.67	0.72	2.58	NOT DETECTED
25.	25-12-2023	68.93	26.69	20.86	24.79	0.69	2.36	NOT DETECTED
26.	28-12-2023	71.38	28.61	23.13	28.45	0.73	2.51	NOT DETECTED
27.	01-01-2024	74.54	30.13	22.46	26.21	0.79		NOT DETECTED
28.	04-01-2024	77.37	32.59	25.03	29.17	0.84	3.12	NOT DETECTED
29.	08-01-2024	75.19	31.63	23.84	26.96	0.80	2.94	NOT DETECTED
30.	11-01-2024	72.84	28.16	21.69	25.32	0.74	2.8	NOT DETECTED
31.	15-01-2024	76.25	30.54	24.98	28.73	0.83	2.89	NOT DETECTED



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Name of Location		PUB / Adani Ho	use						
	Date of Monitoring	Parameter with Results							
Sr. No.		PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO ₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³	
32.	18-01-2024	69.98	28.63	21.00	25.37	0.73	2.76	NOT DETECTED	
33.	22-01-2024	67.37	27.57	20.69	24.15	0.70	2.62	NOT DETECTED	
34.	25-01-2024	71.83	30.49	21.76	26.33	0.74	2.78	NOT DETECTED	
35.	29-01-2024	73.24	32.73	23.54	28.16	0.77	2.82	NOT DETECTED	
36.	01-02-2024	76.57	32.81	23.12	27.37	0.79	2.98	NOT DETECTED	
37.	05-02-2024	73.16	30.26	21.68	25.42	0.74	2.86	NOT DETECTED	
38.	08-02-2024	70.62	28.96	20.21	24.38	0.69	2.71	NOT DETECTED	
39.	12-02-2024	75.84	30.42	22.38	26.71	0.77	2.88	NOT DETECTED	
40.	15-02-2024	72.68	29.82	21.45	24.60	0.69	2.64	NOT DETECTED	
41.	19-02-2024	66.43	27.19	19.87	22.59	0.68	2.51	NOT DETECTED	
42.	22-02-2024	69.15	28.79	20.62	23.10	0.70	2.69	NOT DETECTED	
43.	26-02-2024	73.54	31.56	22.84	26.62	0.79	2.82	NOT DETECTED	
44.	29-02-2024	70.69	30.11	20.03	24.27	0.72	2.73	NOT DETECTED	
45.	04-03-2024	67.50	28.42	20.84	24.15	0.60	2.69	NOT DETECTED	
46.	07-03-2024	65.84	25.73	19.87	22.58	0.68	2.45	NOT DETECTED	
47.	11-03-2024	63.95	26.45	22.27	26.42	0.60	2.41	NOT DETECTED	



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Name of Location		PUB / Adani House								
Sr. No.	Date of Monitoring	Parameter with Results								
		PM ₁₀ μg/m ³	PM _{2.5} μg/m³	SO ₂ μg/m³	NO ₂ μg/m ³	CO mg/m³	HC μg/m³	Benzene μg/m³		
48.	14-03-2024	67.35	29.13	20.57	24.48	0.65	2.68	NOT DETECTED		
49.	18-03-2024	69.54	30.26	22.85	25.92	0.59	2.74	NOT DETECTED		
50.	21-03-2024	74.13	27.41	23.36	26.10	0.70	2.85	NOT DETECTED		
51.	25-03-2024	70.54	25.95	22.48	24.65	0.67	2.53	NOT DETECTED		
52.	28-03-2024	65.48	27.30	19.84	23.39	0.61	2.49	NOT DETECTED		
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0		5.0		
Test Method		IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10	Gas analyzer	IS – 5182, Part – 11		

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Results of Ambient Air Quality Monitoring									
Name of Location		CT-4 RMU-1							
	Date of Monitoring	Parameter with Results							
Sr. No.		PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO₂ μg/m³	CO mg/m³	HC μg/m³	Benzene μg/m³	
1.	02-11-2023	76.42	28.27	23.65	28.37	0.90	4.26	NOT DETECTED	
2.	06-11-2023	72.59	26.92	21.37	26.55	0.84	4.05	NOT DETECTED	
3.	09-11-2023	67.73	30.76	24.68	29.81	1.00	4.38	NOT DETECTED	
4.	13-11-2023	74.25	33.13	26.72	31.64	1.05	4.76	NOT DETECTED	
5.	16-11-2023	87.13	28.64	23.13	28.72	0.95	4.52	NOT DETECTED	
6.	20-11-2023	84.25	26.49	22.51	26.94	0.88	4.36	NOT DETECTED	
7.	23-11-2023	82.64	25.20	21.35	25.46	0.85	4.14	NOT DETECTED	
8.	27-11-2023	76.37	23.58	18.96	23.89	0.76	3.96	NOT DETECTED	
9.	04-12-2023	82.75	30.41	25.13	29.85	0.94	4.62	NOT DETECTED	
10.	07-12-2023	78.38	27.53	22.96	25.27	0.82	4.41	NOT DETECTED	
11.	11-12-2023	80.16	29.37	25.12	28.76	0.86	4.73	NOT DETECTED	
12.	14-12-2023	84.48	33.81	27.64	32.49	0.98	4.89	NOT DETECTED	
13.	18-12-2023	82.31	31.26	24.94	28.51	0.90	4.75	NOT DETECTED	
14.	21-12-2023	76.47	27.83	23.46	27.25	0.81	4.52	NOT DETECTED	



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Name of Location		CT-4 RMU-1							
	Date of Monitoring	Parameter with Results							
Sr. No.		PM ₁₀ μg/m ³	PM _{2.5} μg/m ³	SO ₂ μg/m³	NO₂ μg/m³	CO mg/m ³	HC μg/m³	Benzene μg/m³	
15.	25-12-2023	73.59	24.57	20.13	24.81	0.74	4.36	NOT DETECTED	
16.	28-12-2023	79.11	29.32	22.53	26.76	0.79	4.48	NOT DETECTED	
17.	01-01-2024	81.42	31.86	24.28	28.17	0.97		NOT DETECTED	
18.	04-01-2024	84.26	34.48	26.84	31.46	1.00	4.82	NOT DETECTED	
19.	08-01-2024	79.82	28.91	22.86	27.52	0.92	4.53	NOT DETECTED	
20.	11-01-2024	82.57	31.49	25.22	29.35	1.00	4.68	NOT DETECTED	
21.	15-01-2024	78.84	27.59	22.12	26.89	0.87	4.41	NOT DETECTED	
22.	18-01-2024	80.64	29.17	23.79	27.42	0.91	4.65	NOT DETECTED	
23.	22-01-2024	83.49	32.72	26.31	30.58	1.05	4.73	NOT DETECTED	
24.	25-01-2024	85.27	35.49	29.32	33.24	1.10	4.82	NOT DETECTED	
25.	29-01-2024	80.65	30.16	24.05	29.13	0.95	4.70	NOT DETECTED	
26.	01-02-2024	78.62	28.96	22.10	26.93	0.82	4.45	NOT DETECTED	
27.	05-02-2024	82.36	30.19	24.56	29.31	0.93	4.62	NOT DETECTED	
28.	08-02-2024	84.16	32.46	27.84	33.46	0.97	4.87	NOT DETECTED	
29.	12-02-2024	80.43	31.46	25.63	29.70	0.89	4.70	NOT DETECTED	
30.	15-02-2024	77.29	29.66	22.38	27.62	0.76	4.62	NOT DETECTED	



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Nam	e of Location	CT-4 RMU-1									
	Date of	Parameter with Results									
Sr. No.	Sr. No. Monitoring	PM ₁₀ μg/m³	PM _{2.5} μg/m ³	SO ₂ μg/m ³	NO ₂ μg/m³	CO mg/m³	HC μg/m³	Benzene μg/m³			
31.	19-02-2024	75.73	27.43	20.96	25.17	0.70	4.39	NOT DETECTED			
32.	22-02-2024	79.37	30.11	22.16	26.93	0.78	4.53	NOT DETECTED			
33.	26-02-2024	82.64	32.83	25.31	29.62	0.86	4.81	NOT DETECTED			
34.	29-02-2024	79.55	29.89	23.72	27.53	0.77	4.68	NOT DETECTED			
35.	04-03-2024	85.13	34.25	25.81	28.47	0.79	4.85	NOT DETECTED			
36.	07-03-2024	80.74	31.48	22.57	26.35	0.64	4.71	NOT DETECTED			
37.	11-03-2024	78.93	28.52	21.76	26.11	0.57	4.52	NOT DETECTED			
38.	14-03-2024	75.38	30.86	23.29	27.46	0.52	4.68	NOT DETECTED			
39.	18-03-2024	81.52	33.47	24.92	29.53	0.76	4.82	NOT DETECTED			
40.	21-03-2024	86.14	37.35	27.11	32.42	0.82	4.97	NOT DETECTED			
41.	25-03-2024	83.74	34.68	25.24	30.48	0.73	4.72	NOT DETECTED			
42.	28-03-2024	86.85	31.57	26.86	29.62	0.87	4.82	NOT DETECTED			
	ible Value as per NAAQMS	100.0	60.0	80.0	80.0	2.0		5.0			
Te	st Method	IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10	Gas analyzer	IS - 5182, Part - 11			



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			Results of No	oise Level Monitoring						
L	ocation Name	CT3 RMU-2								
Sr. No.	Sampling Date and		Noise Level Leq. dB(A) - Day Time							
511 1101	Time	12-10-2023	13-11-2023	14-12-2023	11-01-2024	12-02-2024	14-03-2024			
1	06:00 to 07:00	64.8	64.5	65.5	66.3	65.6	65.8			
2	07:00 to 08:00	69.2	66.9	63.5	62.4	63.6	63.7			
3	08:00 to 09:00	65.4	65.2	67.3	66.6	65.7	67.5			
4	09:00 to 10:00	66.8	69.6	64.3	65.2	63.8	64.7			
5	10:00 to 11:00	64.1	61.2	63.8	62.6	64.1	66.8			
6	11:00 to 12:00	68.9	65.7	66.7	64.9	65.8	64.3			
7	12:00 to 13:00	65.3	68.8	66.5	66.5	66.1	62.3			
8	13:00 to 14:00	68.3	67.5	64.7	64.7	65.3	66.7			
9	14:00 to 15:00	61.8	65.2	66.4	65.3	66.9	63.5			
10	15:00 to 16:00	64.3	68.6	65.4	65.4	66.3	64.9			
11	16:00 to 17:00	69.4	65.2	68.1	68.5	67.5	65.8			
12	17:00 to 18:00	63.9	68.2	65.8	65.8	64.2	65.6			
13	18:00 to 19:00	67.5	67.4	64.8	63.8	64.8	62.3			
14	19:00 to 20:00	66.4	63.9	62.8	64.3	66.1	65.4			
15	20:00 to 21:00	63.4	60.7	63.4	62.8	62.8	63.8			
16	21:00 to 22:00	65.1	63.8	61.7	60.7	61.3	63.2			
	Day Time			<75 dE	B (A)					



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Lo	ocation Name	CT3 RMU-2								
Sr. No.	Sampling Date and	Noise Level Leq. dB(A) – Night Time								
31.140.	Time	12-10-2023	13-11-2023	14-12-2023	11-01-2024	12-02-2024	14-03-2024			
1	22:00 to 23:00	59.6	63.7	64.1	64.3	63.8	63.5			
2	23:00 to 24:00	61.6	61.8	63.9	63.9	62.5	62.6			
3	24:00 to 01:00	60.6	59.4	62.4	62.6	64.1	63.1			
4	01:00 to 02:00	57.9	60.3	62.8	63.4	62.9	63.9			
5	02:00 to 03:00	55.8	62.7	63.9	63.9	64.1	64.7			
6	03:00 to 04:00	61.3	60.9	61.8	61.8	63.2	63.2			
7	04:00 to 05:00	60.3	57.5	59.2	59.2	61.8	60.1			
8	05:00 to 06:00	61.1	59.9	58.3	59.7	60.3	61.3			
Night Time <70 dB (A)										

Test Method	IS: 9989 : 1981
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	Results of Noise Level Monitoring								
Lo	ocation Name	Near Fire Station							
Sr. No.	Sampling Date and			Noise Level Leq. d					
3111101	Time	05-10-2023	06-11-2023	07-12-2023	04-01-2024	05-02-2024	07-03-2024		
1	06:00 to 07:00	63.4	64.4	62.7	64.3	65.1	64.1		
2	07:00 to 08:00	66.4	67.3	64.8	64.8	63.2	65.3		
3	08:00 to 09:00	69.3	65.7	66.4	65.8	66.2	65.8		
4	09:00 to 10:00	61.3	62.8	63.7	64.8	65.3	67.1		
5	10:00 to 11:00	63.1	65.5	67.1	65.2	67.2	65.4		
6	11:00 to 12:00	68.3	63.6	65.7	66.7	65.3	63.8		
7	12:00 to 13:00	65.7	64.2	66.4	65.1	64.8	65.2		
8	13:00 to 14:00	66.7	67.4	68.3	68.3	67.3	66.5		
9	14:00 to 15:00	60.4	61.2	65.2	66.3	65.5	66.9		
10	15:00 to 16:00	67.5	64.8	63.8	62.9	63.8	65.2		
11	16:00 to 17:00	64.7	62.8	61.3	61.3	63.6	64.4		
12	17:00 to 18:00	67.1	60.1	63.5	64.7	65.2	63.7		
13	18:00 to 19:00	63.2	64.9	66.4	66.4	65.7	62.8		
14	19:00 to 20:00	66.8	61.3	63.8	64.6	63.6	64.6		
15	20:00 to 21:00	64.2	64.5	62.4	63.8	64.1	63.6		
16	21:00 to 22:00	61.3	60.7	62.1	63.1	63.6	62.4		
	Day Time			<75 dE	3 (A)				



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Lo	ocation Name	Near Fire Station								
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Night Time								
31.140.		05-10-2023	06-11-2023	07-12-2023	04-01-2024	05-02-2024	07-03-2024			
1	22:00 to 23:00	59.9	58.8	60.2	59.9	61.4	62.7			
2	23:00 to 24:00	58.4	61.6	63.8	62.6	63.6	61.8			
3	24:00 to 01:00	62.4	62.3	64.6	64.6	62.5	62.3			
4	01:00 to 02:00	57.5	58.4	62.3	62.3	63.1	64.4			
5	02:00 to 03:00	61.7	61.3	61.3	62.8	61.6	62.3			
6	03:00 to 04:00	60.1	60.6	59.1	59.1	58.9	60.8			
7	04:00 to 05:00	61.3	59.3	58.5	58.5	58.5	61.5			
8	05:00 to 06:00	58.2	57.6	58.1	59.6	57.8	60.4			
	Night Time			<70 di	B (A)					

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	Results of Noise Level Monitoring								
Lo	ocation Name	ADANI PORT – TUG	Berth 600 KL Pump Ho	use					
Sr. No.	Sampling Date and	Noise Level Leq. dB(A) - Day Time							
31.140.	Time	09-10-2023	09-11-2023	11-12-2023	08-01-2024	08-02-2024	11-03-2024		
1	06:00 to 07:00	60.5	63.8	64.2	63.1	62.8	63.4		
2	07:00 to 08:00	65.4	65.4	66.1	65.3	64.8	63.8		
3	08:00 to 09:00	68.9	62.6	64.8	63.7	64.9	65.2		
4	09:00 to 10:00	65.3	67.4	66.4	66.4	65.3	66.5		
5	10:00 to 11:00	67.3	63.3	66.3	64.9	65.6	65.2		
6	11:00 to 12:00	65.3	68.4	67.4	65.2	66.2	67.4		
7	12:00 to 13:00	67.4	67.2	64.8	63.7	63.9	65.7		
8	13:00 to 14:00	69.2	63.8	62.5	61.9	63.1	64.2		
9	14:00 to 15:00	67.3	66.3	68.2	68	67	66.7		
10	15:00 to 16:00	69.8	60.4	63.5	64.5	65.3	63.5		
11	16:00 to 17:00	68.2	63.5	65.7	65.7	63.8	64.1		
12	17:00 to 18:00	64.3	67.9	65.9	64.6	63.4	62.4		
13	18:00 to 19:00	65.4	68.1	62.6	62.6	63.8	64.5		
14	19:00 to 20:00	63.6	65.2	64.1	62.5	64.2	65.1		
15	20:00 to 21:00	66.1	64.1	61.7	61.7	60.8	64.5		
16	21:00 to 22:00	62.8	62.3	63.5	62.5	61.8	61.9		
	Day Time			<75 d	В (А)				



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Lo	ocation Name	ADANI PORT – TUG	ADANI PORT – TUG Berth 600 KL Pump House								
Sr. No.	Sampling Date and	Noise Level Leq. dB(A) - Night Time									
31. 140.	Time	09-10-2023	09-11-2023	11-12-2023	08-01-2024	08-02-2024	11-03-2024				
1	22:00 to 23:00	62.7	61.4	62.3	63.1	62.5	61.2				
2	23:00 to 24:00	62.3	63.5	60.5	61.3	60.7	60.7				
3	24:00 to 01:00	56.8	64.1	62.3	63.7	63.5	62.7				
4	01:00 to 02:00	60.1	62.7	64.6	64.6	63.6	63.4				
5	02:00 to 03:00	56.5	60.6	63.2	63.2	64.5	63.8				
6	03:00 to 04:00	57.5	59.4	61.7	62.5	63.1	62.6				
7	04:00 to 05:00	60.7	58.7	60.3	60.3	59.6	61.3				
8	05:00 to 06:00	59.5	56.4	57.4	57.9	59.2	58.7				
	Day Time			<70 (dB (A)						

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	Results of Noise Level Monitoring								
Lo	ocation Name	PUB/Adani House							
Sr. No.	Sampling Date and			T	dB(A) - Day Time	<u> </u>			
5111101	Time	02-10-2023	02-11-2023	04-12-2023	01-01-2024	01-02-2024	04-03-2024		
1	06:00 to 07:00	64.2	62.5	63.1	62.5	63.5	61.9		
2	07:00 to 08:00	62.8	65.1	66.3	65.7	65.4	63.2		
3	08:00 to 09:00	58.7	68.2	64.8	64.8	64.7	65.7		
4	09:00 to 10:00	61.8	63.9	65.3	66.1	65.9	64.3		
5	10:00 to 11:00	68.7	67.8	68.2	67.2	66.5	65.7		
6	11:00 to 12:00	63.4	65.2	66.5	66.5	67.2	66.3		
7	12:00 to 13:00	68.3	61.3	63.7	64.3	65.3	63.7		
8	13:00 to 14:00	63.9	65.9	67.4	67.4	66.8	64.2		
9	14:00 to 15:00	62.5	62.6	64.6	65.9	66.1	64.8		
10	15:00 to 16:00	62.9	63.7	65.1	65.1	66.9	65.7		
11	16:00 to 17:00	65.5	65.4	66.4	67.1	67.5	67.9		
12	17:00 to 18:00	63.3	65.3	67.3	65.7	64.3	66.2		
13	18:00 to 19:00	61.8	69.1	65.9	64.2	63.8	64.6		
14	19:00 to 20:00	68.3	65.2	63.2	63.2	62.7	63.8		
15	20:00 to 21:00	64.2	63.8	62.6	62.6	63.9	62.3		
16	21:00 to 22:00	63.6	61.2	60.8	61.2	62.3	60.8		
	Day Time			<75 c	IB (A)				



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Lo	ocation Name	PUB/Adani House					
Sr. No.	Sampling Date and			Noise Level Leq. (dB(A) - Night Time		
31. NO.	Time	02-10-2023	02-11-2023	04-12-2023	01-01-2024	01-02-2024	04-03-2024
1	22:00 to 23:00	57.4	60.5	59.7	58.6	59.2	60.7
2	23:00 to 24:00	55.8	63.2	61.3	61.7	60.3	58.4
3	24:00 to 01:00	53.9	61.4	62.3	63.3	62.9	60.7
4	01:00 to 02:00	58.6	64.8	61.9	61.9	60.3	62.1
5	02:00 to 03:00	59.3	60.1	59.7	59.5	57.8	60.5
6	03:00 to 04:00	53.8	58.2	57.6	57.4	56.3	61.3
7	04:00 to 05:00	56.3	57.5	56.3	56.3	56.8	58.6
8	05:00 to 06:00	55.6	59.3	57.5	58.1	57.3	58.1
	Day Time			<70 (dB (A)		

Test Method	IS: 9989 : 1981
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	Results of Noise Level Monitoring							
L	ocation Name	CT-4 RMU-1						
Sr. No.	Sampling Date and	Noise Level Leq. dB(A)			I	I		
	Time	22-11-2023	18-12-2023	15-01-2024	15-02-2024	18-03-2024		
1	06:00 to 07:00	62.2	63.7	62.8	64.2	63.3		
2	07:00 to 08:00	65.2	66.4	65.3	64.9	65.2		
3	08:00 to 09:00	63.8	68.9	68.9	67.8	66.3		
4	09:00 to 10:00	66.8	65.4	64.1	65.3	67.2		
5	10:00 to 11:00	64.1	66.3	65.8	63.8	65.4		
6	11:00 to 12:00	63.4	65.6	66.7	65.2	66.8		
7	12:00 to 13:00	65.3	64.3	65.3	62.3	65.1		
8	13:00 to 14:00	68.1	67.2	67.5	66.8	65.4		
9	14:00 to 15:00	64.9	65.2	64.2	63.8	64.3		
10	15:00 to 16:00	66.3	67.8	66.8	64.9	66.1		
11	16:00 to 17:00	64.8	65.1	66.2	66.3	64.8		
12	17:00 to 18:00	65.3	64.5	64.5	65.1	63.7		
13	18:00 to 19:00	66.2	67.4	67.4	66.7	65.2		
14	19:00 to 20:00	64.8	65.3	64.37	65.2	64.8		
15	20:00 to 21:00	63.2	64.7	64.7	63.7	61.7		
16	21:00 to 22:00	60.6	62.5	62.4	63.1	62.7		
	Day Time			<75 dB (A)				



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L	ocation Name	CT-4 RMU-1				
Sr. No.	Sampling Date and		Nois	Time		
31.110.	Time	22-11-2023	18-12-2023	15-01-2024	15-02-2024	18-03-2024
1	22:00 to 23:00	60.4	62.8	63.6	62.9	61.8
2	23:00 to 24:00	63.2	60.5	61.4	63.2	64.3
3	24:00 to 01:00	60.1	64.3	64.3	63.4	62.7
4	01:00 to 02:00	58.4	61.6	62.8	64.3	64.3
5	02:00 to 03:00	60.2	62.4	62.4	63.8	62.4
6	03:00 to 04:00	57.4	64.1	63.8	64.6	64.1
7	04:00 to 05:00	56.2	62.6	63.7	62.4	63.4
8	05:00 to 06:00	57.3	60.1	60.3	58.6	60.2
	Day Time <70 dB (A)					

Test Method	IS: 9989 : 1981
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	Results of Stack Monitoring								
Sr. No.	Parameter	Unit	Hot Water System-1 (Liquid Terminal)	Hot Water System-2 (Liquid Terminal)	Thermic Fluid Heater (Bitumin-1)	Thermic Fluid Heater (Bitumin-2)	GPCB LIMIT	Method of Test	
				Oct-23					
1	Particulate Matter	mg/Nm³	20.16	20.53	23.28	22.45	150	IS 11255 (Part - 1)	
2	Sulphur Dioxide as SO ₂	ppm	7.41	6.74	8.32	9.75	100	IS 11255 (Part - 2)	
3	Oxides of Nitrogen as NOx	ppm	23.68	20.38	20.61	23.18	50	IS 11255 (Part - 7)	
				Nav-23					
1	Particulate Matter	mg/Nm³	21.45	19.86	22.51	20.69	150	IS 11255 (Part - 1)	
2	Sulphur Dioxide as SO2	ppm	7.86	6.13	7.89	8.92	100	IS 11255 (Part - 2)	
3	Oxides of Nitrogen as NOX	ppm	24.15	19.87	19.60	21.45	50	IS 11255 (Part - 7)	
				Dec-23					
1	Particulate Matter	mg/Nm³	21.87	20.31	22.98	21.47	150	IS 11255 (Part - 1)	
2	Sulphur Dioxide as SO ₂	ppm	7.91	6.80	8.03	9.28	100	IS 11255 (Part - 2)	
3	Oxides of Nitrogen as NOx	ppm	24.43	20.12	20.50	22.13	50	IS 11255 (Part - 7)	
				Jan-24					
1	Particulate Matter	mg/Nm³	22.11	20.74	23.11	22.17	150	IS 11255 (Part - 1)	
2	Sulphur Dioxide as SO ₂	ppm	8.12	6.96	8.27	9.49	100	IS 11255 (Part - 2)	
3	Oxides of Nitrogen as NO _x	ppm	24.73	20.62	21.06	22.86	50	IS 11255 (Part - 7)	



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Sr. No.	Parameter	Unit	Hot Water System-1 (Liquid Terminal)	Hot Water System-2 (Liquid Terminal)	Thermic Fluid Heater (Bitumin-1)	Thermic Fluid Heater (Bitumin-2)	GPCB LIMIT	Method of Test
				Feb-24				
1	Particulate Matter	mg/Nm³	21.87	20.52	23.84	21.96	150	IS 11255 (Part - 1)
2	Sulphur Dioxide as SO ₂	ppm	7.78	7.10	8.11	9.17	100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _X	ppm	24.10	21.11	20.89	22.49	50	IS 11255 (Part - 7)
				Mar-24				
1	Particulate Matter	mg/Nm³	22.43	21.19	22.95	23.41	150	IS 11255 (Part - 1)
2	Sulphur Dioxide as SO ₂	ppm	8.12	6.74	8.34	8.57	100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NOx	ppm	22.97	20.13	21.37	21.15	50	IS 11255 (Part - 7)

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	Results of Stack Monitoring								
Sr.	Parameter	Unit	D.G. Set-6, 7 & 8 (1250 KVA - CT2) Common Stack	D.G. Set-9 (1500 KVA - CT3)	D.G. Set-10 (1500 KVA - CT3)	D.G. Set-11 (1500 KVA - CT3)	GPCB LIMIT	Method of Test	
IVO.			Mar-24		Mar-24		LIIVIII		
			23-03-2024	21-02-2024	21-02-2024	21-02-2024			
1	Particulate Matter	mg/Nm³	22.46	16.27	19.72	17.11	150	IS 11255 (Part - 1)	
2	Sulphur Dioxide as SO ₂	ppm	8.18	12.86	15.49	14.53	100	IS 11255 (Part - 2)	
3	Oxides of Nitrogen as NO _x	ppm	16.92	25.43	27.64	20.39	50	IS 11255 (Part - 7)	
4	Carbon Monoxide	mg/Nm3	1.7	1.64	1.26	0.95		UERL/AIR/SOP/18	
5	Non Methyl Hydro Carbon	ppm	Not Detected	Not Detected	Not Detected	Not Detected		UERL/AIR/SOP/27	
Sr. No.	Parameter	Parameter Unit		D.G. Set-13 (1500 KVA) - CT4	D.G. Set-14 (1500 KVA) - CT4	D.G. Set-1 (500 KVA) - DG House - MPT	GPCB LIMIT	Method of Test	
NO.				Feb-24			LIIVIII		
			24-02-2024	24-02-2024	24-02-2024	25-02-2024			
1	Particulate Matter	mg/Nm³	22.65	25.29	19.98	20.43	150	IS 11255 (Part - 1)	
2	Sulphur Dioxide as SO ₂	ppm	8.12	8.91	8.56	7.28	100	IS 11255 (Part - 2)	
3	Oxides of Nitrogen as NO _X	ppm	20.37	22.13	18.11	26.86	50	IS 11255 (Part - 7)	
4	Carbon Monoxide	mg/Nm3	1.12	1.87	1.51	1.13		UERL/AIR/SOP/18	
5	Non Methyl Hydro Carbon	ppm	Not Detected	Not Detected	Not Detected	Not Detected		UERL/AIR/SOP/27	



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Sr. No.	Parameter	Unit	D.G. Set-2 (500 KVA) - DG House - MPT	D.G. Set-3 (500 KVA) - DG House - MPT	D.G. Set-4 (500 KVA) - DG House - MPT	D.G. Set-5 (500 KVA) - DG House - MPT	GPCB LIMIT	Method of Test
			25-02-2024	25-02-2024	25-02-2024	25-02-2024		
1	Particulate Matter	mg/Nm³	24.69	22.36	27.11	22.1	150	IS 11255 (Part - 1)
2	Sulphur Dioxide as SO ₂	ppm	7.00	9.24	8.96	8.87	100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _X	ppm	28.37	28.39	27.88	27.26	50	IS 11255 (Part - 7)
4	Carbon Monoxide	mg/Nm3	1.53	1.72	1.97	1.45		UERL/AIR/SOP/18
5	Non Methyl Hydro Carbon	ppm	Not Detected	Not Detected	Not Detected	Not Detected		UERL/AIR/SOP/27

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RESULTS OF BORE HOLE WATER

			Pump House-1	Pump House-2	Pump House-3	Near Unloading bays	Near ETP	
SR.NO.	NO. TEST PARAMETERS	UNIT	12-02-2024	12-02-2024	12-02-2024	12-02-2024	12-02-2024	TEST METHOD
1.	pH @ 25 ° C		7.81	7.45	8.03	8.32	8.23	IS 3025(Part 11)1983
2.	Salinity	ppt	1.07	0.99	1.76	3.44	3	APHA 23 rd Ed.,2017,2520 B
3.	Oil & Grease	mg/L	BDL(MDL:5.0)	BDL(MDL:5.0)	BDL(MDL:5.0)	BDL(MDL:5.0)	BDL(MDL:5.0)	IS 3025(Part39)1991, Amd. 2
4.	Hydrocarbon	mg/L	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	GC/GCMS
5.	Lead as Pb	mg/L	BDL(MDL:0.01)	0.022	BDL(MDL:0.01)	0.109	BDL(MDL:0.01)	IS 3025 (PART 47) 1994
6.	Arsenic as As	mg/L	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	APHA 23 rd Ed.,2017,3114-C
7.	Nickel as Ni	mg/L	BDL(MDL:0.02)	BDL(MDL:0.02)	BDL(MDL:0.02)	BDL(MDL:0.02)	BDL(MDL:0.02)	IS 3025 (PART 54) 2003
8.	Total Chromium as Cr	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	IS 3025 (PART 52) 2003
9.	Cadmium as Cd	mg/L	BDL(MDL:0.003)	BDL(MDL:0.003)	BDL(MDL:0.003)	0.015	0.008	IS 3025(PART 41) 1992
10.	Mercury as Hg	mg/L	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	APHA 23 rd Ed.,2017, 3112-B
11.	Zinc as Zn	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	IS 3025(PART 49) 1994
12.	Copper as Cu	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	IS 3025 (PART 42) 1992
13.	Iron as Fe	mg/L	1.236	1.776	BDL(MDL:0.1)	0.114	0.115	IS 3025(PART 53) 2003
14.	Insecticides/Pesticides	μg/L	Absent	Absent	Absent	Absent	Absent	USEPA 8081 B
15.	Depth of Water Level from Ground Level	meter	1.9	2.1	1.95	2.2	2.1	

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	Minimum Detection Limit								
	Ambient Air Quality Monitoring								
Sr. No.	Test Parameter	Unit	MDL						
1	Particulate Matter (PM10)	μg/m3	5 μg/m3						
2	Particulate Matter (PM2.5)	μg/m3	5 μg/m3						
3	Sulphur Dioxide (SO2)	μg/m3	4 μg/m3						
4	Nitrogen Dioxide (NO2)	μg/m3	5 μg/m3						
5	Carbon Monoxide (CO)	mg/m3	0.01 mg/m3						
6	Ammonia (NH3)	μg/m3	5 μg/m3						
7	Ozone (O3)	μg/m3	5 μg/m3						
8	Lead (Pb)	μg/m3	0.5 μg/m3						
9	Nickle (Ni)	ng/m3	1 ng/m3						
10	Arsenic (As)	ng/m3	1 ng/m3						
11	Benzene	μg/m3	1μg/m3						
12	Benzo(o)Pyrene	ng/m3	0.1 ng/m3						
14	Hydro Carbon	μg/m3	1 μg/m3						
	Stack Emission Monitoring								
Sr. No.	Test Parameter	Unit	MDL						
1	Suspended particulate matter	mg/Nm3	2 mg/Nm3						
2	Sulphur Dioxide SOX	mg/Nm3	4 mg/Nm3						
3	Oxides of Nitrogen NOX	mg/Nm3	5 mg/Nm3						



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	ETP Water						
Sr. No.	Test Parameter	Unit	MDL				
1	Colour	Pt. Co. Scale	5				
2	pH @ 27 ° C		2				
3	Temperature	OC	5				
4	Total Suspended Solids	mg/L	4				
5	Total Dissolved Solids	mg/L	4				
6	COD	mg/L	2				
7	BOD (3 days at 27 0C)	mg/L	1				
8	Chloride (as Cl) -	mg/L	1				
9	Oil & Grease	mg/L	2				
10	Sulphate (as SO4)	mg/L	1				
11	Ammonical Nitrogen	mg/L	2				
12	Phenolic Compound	mg/L	0.1				
13	Copper as Cu	mg/L	0.05				
14	Lead as Pb	mg/L	0.01				
15	Sulphide as S	mg/L	0.05				
16	Cadmium as Cd	mg/L	0.003				
17	Fluoride as F	mg/L	0.2				
18	Residual Chlorine	mg/L	0.1				
19	Percent Sodium	%					
20	Sodium Absorption ratio						



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	MARINE WATER								
Sr. No.	Test Parameter	Unit	MDL						
1	рН		5						
2	Temperature	оС	5						
3	Total Suspended Solids	mg/L	4						
4	BOD (3 Days @ 27oC)	mg/L	1						
5	Dissolved Oxygen	mg/L	0.2						
6	Salinity	ppt	0.01						
7	Oil & Grease	mg/L	2						
8	Nitrate as NO ₃	μmol/L	0.4						
9	Nitrite as NO ₂	μmol/L	0.04						
10	Ammonical Nitrogen as NH ₃	μmol/L	0.8						
11	Phosphates as PO ₄	μmol/L	0.4						
12	Total Nitrogen	μmol/L	2.2						
13	Petroleum Hydrocarbon	μg/L	0.1						
14	Total Dissolved Solids	mg/L	4						
15	COD	mg/L	2						



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	Sea SEDIMENT		
Sr. No.	Test Parameter	Unit	MDL
1	Organic Matter	%	0.5
2	Phosphorus as P	μg/g	1
3	Texture		
4	Petroleum Hydrocarbon	μg/g	0.1
5	Aluminum as Al	%	0.1
6	Total Chromium as Cr+3	μg/g	2
7	Manganese as Mn	μg/g	1
8	Iron as Fe	%	0.1
9	Nickel as Ni	μg/g	1
10	Copper as Cu	μg/g	1
11	Zinc as Zn	μg/g	1
12	Lead as Pb	μg/g	1
13	Mercury as Hg	μg/g	0.05



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	BORE HOLE WATER		
Sr. No.	Test Parameter	Unit	MDL
1	pH @ 25 ° C		5
2	Salinity	ppt	
3	Oil & Grease	mg/L	2
4	Hydrocarbon	mg/L	0.1
5	Lead as Pb	mg/L	0.01
6	Arsenic as As	mg/L	0.01
7	Nickel as Ni	mg/L	0.02
8	Total Chromium as Cr	mg/L	0.05
9	Cadmium as Cd	mg/L	0.003
10	Mercury as Hg	mg/L	0.001
11	Zinc as Zn	mg/L	0.05
12	Copper as Cu	mg/L	0.05
13	Iron as Fe	mg/L	0.1
14	Insecticides/Pesticides	μg/L	0.1
15	Depth of Water Level from Ground Level	meter	

Annexure – 5



Cost of Environmental Protection Measures

Sr.	Activity	Cost	incurred (INR	in Lacs)	Budgeted Cost (INR in Lacs)
No.		2021 - 22	2022 - 23	2023 - 24	2023 - 24
1.	Environmental Study / Audit and Consultancy	6.82	7.32	22.67	27
2.	Legal & Statutory Expenses	10.52	12.32	8.60	13
3.	Environmental Monitoring Services	14.31	15.32	13.37	19.20
4.	Hazardous / Non-Hazardous Waste Management & Disposal	107.09	104.035	130.11	148.68
5.	Environment Days Celebration and Advertisement / Business development	4.04	2.53	3.42	11.50
6.	Treatment and Disposal of Bio- Medical Waste	2.14	2.29	2.28	2.28
7.	Mangrove Plantation, Monitoring & Conservation	53.6	35.0	15	15.0
8.	Other Horticulture Expenses	921	956	904	904
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	252.27	141.33	186.94	212.9
10.	Expenditure of Environment Dept. (Apart from above head)	149.8	90.14	80.39	182.92
	Total	1371.79	1366.28	1366.78	1536.48

Annexure – 6



Compliance Report of CIA Study Environment Management Plan

vironmenta nd social pacts for e fully veloped enario ear 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
s predicted at the built land in the al areas uld crease by order 50% m the seline 15. W stlements ar the SEZ a might eate slums. organized can velopment ding to or nitation	Level - 1	APSEZ has developed two townships (Shantivan and Samudra) presently accommodating 1668 households. Necessary permissions from concerned authorities were already obtained for the development of townships and Associated infrastructure facilities.	The existing townships will be expanded to accommodate about 4 lakh people when the APSEZ is fully developed.	APSEZ	As and when Required	APSEZ has developed two townships (Shantivan and Samudra) accommodating 2302 households and associated infrastructure facilities. Accommodation is made available for all interested employees working within Adani group & SEZ industries. Out of which 95.57% Occupancies are accommodated within the townships and rest are available for employees working within APSEZ. At present 60 nos. of industries (processing & non-processing) are present within the SEZ (46 nos. are in operation). Township facilities are also made by some of SEZ industries within Mundra town for their employees with basic infrastructure facilities and requirements. Most of the employees working in SEZ industries are residing in Mundra township having all basic requirements and associated facilities. The existing social infrastructure facilities are adequate for present development at APSEZ. The
n p v v e e e e e e e e e e e e e e e e e	d social acts for fully eloped nario or 2030) d Use Chang predicted the built and in the all areas ald ease by order 50% n the eline 5. v clements or the SEZ a might ate slums. organized an elopment ling to r itation	d Social acts for fully eloped nario ar 2030) d Use Change predicted the built and in the all areas all ease by order 50% on the eline 5. Vellements or the SEZ or might ate slums. Impact & Magnitud e1 Level - 1 Level - 1	ironmenta di social acts for fully eloped nario ar 2030) d Use Change predicted the built and in the all ease by order 50% on the eline sets. Ilements or the SEZ or might ate slums. Impact & Magnitud e1 Impact & Magnitud or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc. APSEZ has developed two townships (Shantivan and Samudra) presently accommodati ng 1668 households. Necessary permissions from concerned authorities were already obtained for the development of townships and Associated infrastructure facilities.	ironmenta di social acts for fully eloped nario or 2030) d Use Change predicted the built and in the elose by order 50% on the eleine est. Il areas of the built and in the eleine est of the built and samudra) presently accommodate and Samudra) presently accommodate about 4 lakh people when the APSEZ is fully developed. Necessary permissions from concerned authorities were already obtained for the development of townships and Associated infrastructure facilities.	ironmenta d social acts for fully eloped nario in 2030) Impact 8 Magnitud e1 Impact 8 Magnitud or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc. In areas of the built and in the il areas bees by order 50% in the eline 55. Islements or the SEZ a might are set sums. Impact 8 Magnitud or being adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc. In areas by order 50% in the eline bill accommodate about 4 lakh people when the APSEZ is fully developed. In the set slums. Impact 8 Magnitud or being adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc. In the built accommodate about 4 lakh people when the APSEZ is fully developed. In the set slums. Impact 8 Magnitud or being adopted or being adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc. In the existing townships will be expanded to accommodate about 4 lakh people when the APSEZ is fully developed. In the set slums. Impact 8 Magnitud or being adopted or being adopted by APSEZ has developed two townships and accommodate about 4 lakh people when the APSEZ is fully developed.	impact & Magnitud acts for fully eloped nario and social acts for fully eloped nario are social acts for fully eloped nario acts for fully eloped nar



S. No.	Identified environmenta I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
	of vectors and disease.						expanded as per requirement. APSEZ has also been granted permission for receiving domestic sewage @ 2.5 MLD from Mundra village (which was earlier discharged into open area within Mundra region) into wastewater treatment plant for treatment and disposal. APSEZ has already started receiving of domestic sewage from Mundra, which abates the poor sanitation and unhygienic condition within Mundra region. Total project cost for laying domestic sewage underground pipeline with other associated facilities from Mundra to APSEZ is 362 Lacs.
1.2	Once the project is fully developed, due to increase in built up land in the APSEZ area, there will be an increase in the storm water runoff from the facility.	Level-1	The study area experiences scanty rainfall less than 400 mm/year. Considering the natural gradient, ASPEZ have designed and implemented storm water	Technical feasibility study can be carried out to explore the possibility of developing storm water collection ponds to utilize maximum possible storm water runoff for dust suppression in the coal yard areas during non-rainy days.	APSEZ	Technical Study - one time, Implementation - Continual process	Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies, At present all existing coal yards are designed with drain, for collection of water during water sprinkling and rainfall, which is carried away to dump pond. Supernatant water from dump pond is being collected and used for dust suppression activities or after sedimentation, discharged to sea. Details of drain and dump pond has been submitted in along with EC compliance report (Oct 19 to March 20). Analysis of said water discharging into sea during monsoon season is being carried out (twice in a year during monsoon) through NABL / MoEF&CC accredited laboratory. Analysis report of the same shows there is



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			drains in the existing facility to meet the peak daily rainfall of 440 mm/hr. Hence flooding of water in the neighboring areas is not envisaged.				no any contamination. The report of the same were submitted during the last compliance period Apr'23 to Sep'23. During compliance period FY 2023-24 total recorded rain fall was 844 mm observed, which was much less than the design capacity of existing storm water drainage system. So our existing storm water management facility is adequate to handle the storm water runoff from the area. Hence flooding of water in the neighboring areas is not envisaged.
			As per the directions given in the environment al clearance issued for the proposed Multi-Product SEZ and CRZ clearance for Desalination, sea water intake, outfall	The channel depth in all the natural streams shall be maintained to accommodate peak flood flow during the monsoon and periodical desilting activities in the natural steams passing through the APSEZ area	APSEZ, District Administratio n* and Irrigation department	As and When Required	Presently there is no Desalination plant, sea water intake and outfall facility developed as part of EC & CRZ clearance of Multiproduct SEZ. The project will be designed and implemented as per requirement without disturbing the natural flow of rainwater in all the seasonal streams.



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1. 3	Due to conservation and protection of mangroves in the designated conservation area, it has been predicted	Positive Impact with ecologi cal benefits	facility and pipeline project, the master plan of the project was designed and being implemented without disturbing the natural flow of rainwater in all the seasonal streams. In addition to conservation of the identified 1254 ha mangrove areas around Mundra port and SEZ, APSEZ has taken up large scale	APSEZ will continue mangrove afforestation as per the commitment made with concerned regulatory authority	APSEZ	Short Term	APSEZ has carried out mangrove afforestation in 4140 ha. area across the coast of Gujarat till date. Total expenditure for the same till date is INR 1592.8 lakh. No further mangrove afforestation is pending w.r.t. commitment made with concerned regulatory authority for APSEZ, Mundra project. As per study conducted by NCSCM, Chennai in 2017, mangrove cover in and around APSEZ, Mundra has increased from 2094 Ha to 2340 ha (as compared between 2011 to 2017). The analysis has shown an overall growth of 246 ha. The cost for said study was



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	that the current mangrove footprint area would marginally increase in next 15 years due to natural growth. This will enhance the overall biodiversity in the local coastal ecosystem.		mangrove afforestation activities in an area of more than 2800 ha at various locations across the coast of Gujarat state in consultation with various organizations				Last on to betwo 2019 which reveals the control of	that there is an veen March 2017 with an extent of veen 10.94 als that the mang as remained undisting the conversion of scatter of GCZMA	ween categories indicated that in dense mangroves along with tered into sparse, that shows the in a progressive direction. recommendations and NCSCM ion action plan, APSEZ has		



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							1.	Mangrove mapping and monitoring in and around APSEZ	 APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%. This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of



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								mangroves in a progressive direction. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. According to GUIDE Mangrove monitoring study report November 2023 (report was submitted during the last compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%)



S. No.	Identified environmenta I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. • Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). • The cost of the said study was INR 23.60 Lacs incurred by APSEZ. Summary of Mangrove mapping and monitoring (from 2011 to 2021): Mangro ve mapping cover total Area (Ha.) C. 2011 2094



S. No.	Identified environmenta I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Comp	oliance				
									2011 to 2016-17	2340	24 6	11.7 5%
									2017 to 2019 till March	2596	25 6	10.9 4%
									2019 to 2021 till March	2723	12 7	4.8 9
									Total	2723	62 9	
									To compl recommer mangrove 2 years, p process to for Monit Distributio around AF to 2023.	ndations monitori resently / o carry ou coring of on of cre	regang at APSEZ the Man eks in from	every is in study grove a and 2021
							2.	Tidal observation in creeks in and around APSEZ	similar Baradim and Kha	carried ou tions at to 2017 lata, Nav ari creeks e of NCS	loca in inal, E unde	ations Kotdi, Bocha



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							3.	Removal of Algal and Prosopis growth from mangrove areas	 The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. The cost of the said activity was INR 1.0 Lacs. Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 during the FY 2023-24. The report of algal removal is attached as Annexure - 3.
							4.	Awareness of mangroves importance in surrounding communities	Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattels



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							/ 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg. • Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land development with strong Community Contribution and Mobilization. • Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas.



S. Identified S. I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
						APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23. Since PhD scholars and students frequently visit this area for study, we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist. Refer CSR report attached as Annexure – 2.



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							To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked. After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work is 23.60 Lacs (Including Taxes), which was paid by APSEZ. GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted during the last EC compliance report submission Apr'23 to Sep'23 According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradi Mata, Navinal, Bocha and Khari creeks and also



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							in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019. According to GUIDE Mangrove monitoring study report November 2023 (Report was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi Mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total



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							mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023. Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE, These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem.



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1. 4	Developmen t activities along the coast might cause certain changes in hydrodynamic characterist ics along the shoreline. Shoreline of any area also can be influenced by storm surges and other natural processes.		Detailed hydro- dynamic modelling and shoreline change prediction for a fully developed APSEZ facility has been studied. The study reveals that the erosion and accretion in the study area at the end of 15th year will be within the designated criteria of ±	It is recommended to map the coastal morphology (Shoreline) at least once in three years	APSEZ	Continual Process	Shore line change aspect has been studied in detail as part of following two studies; • Bathymetry & Topography study, preparation of plan for protection of creeks/ mangrove area including buffer zone, mapping of co-ordinates, running length, HTL, CRZ boundary. • A Regional Impact Assessment study to identify impacts of all the existing as well as proposed project activities in Mundra region. As per the outcome of these studies, no erosion is observed on the coast of the project area. As part of the Regional Impact Assessment study, the possible changes in shoreline that may occur due to the proposed developments in 10 km area on either side of the waterfront development project have been predicted. It has been inferred from the modelling study that the shift in the shoreline will be less than 0.5 m/year, which reconfirms that the APSEZ facility would pose insignificant impact on the Mundra shoreline. Accretion is observed at South port and at West port due to approved reclamation activities. Based on the study outcome, it is recommended to map the coastal morphology (shoreline change) at least once in three years.



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			0.5 m/year. which reconfirms that the waterfront development activities of APSEZ would pose insignificant impact on the Mundra shoreline.				APSEZ has already awarded work to the agency namely M/s. Gujarat Institute of Desert Ecology, Bhuj for carrying out Shoreline Change Assessment Study for Mundra region vide P.O. No. 4802013270 dated 30.03.2022. The cost of said study was INR 17.39 Lacs. The said study is under progress. Shoreline change study was carried out by M/s. Gujarat Institute of Desert Ecology, Bhuj in 2022 as a part of the Environmental Management Plan (EMP) compliance with the CIA study. The cost of said study was INR 17.39 Lacs. In the present study, the rate of shoreline changes statistics on a time series of multiple shoreline positions of a totally 43 km coastline stretches (16 km on the west side and 27 km on the east side of Adani main port) on either side of Adani Ports and Special Economic Zone Ltd (APSEZL) has been taken into account for the calculation by using satellite images. As a part of the NGT direction, the shoreline change analysis has been carried out for the years 2015-2022 to study the immediate changes after the commissioning of the port and initiation of the activities (September 2015) for short-term variation for the year 2015-2022 using EPR method has been carried out.



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							interval t		of shoreline char from 2015 to le.	
							Period	Name of the block	Average Shoreline Change(M/Year)	Shoreline
										Maximum Accretion
							2015- 2022	West Port Eastern side	-11.43 -26.60	39.86 191.32
							GUIDE w compliance Shoreline of MS, Chenry part of Wa EIA study. To estimal approved shoreline using the 2018. In outher shore	eline Change A as submitted e report for the change study v ai (NABET acc elerfront Devel The summary c te the shorelin waterfront de change assess satellite image rder to avoid a line, the sate	Assessment Studialong with significant period Oct'22 to was carried out by credited consultar opment Projection of the said study and the change due to velopment plan, coment has been ery for a period eny major errors in allite data for sured for 2008,	x monthly Mar'23. M/s. Chola at) also as a Expansion re as below. the earlier a historical undertaken of 2008 to estimating imilar tidal



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							2018. AMBUR Methodology was used to study the historical analysis. 10 km radius stretch of shoreline on either side of the APSEZ project boundary has been considered for assessing the historical shoreline change scenario. The baseline shoreline change assessment depicts the influence of both natural causes and also possible changes in the shore due to various development activities in the study area during the designated period. For the purpose of this study, shoreline on left side of APSEZ is termed as West Side Shoreline and that of the right side as East Side Shoreline for ease of recognition. The maximum accretion and erosion rate of the west side shoreline over a period of 10 years during the year 2008 – 2018 are observed to be 4.78 m/yr and 1.93 m/yr respectively. The maximum accretion and erosion rate of the east side shoreline over a period of 10 years during the year 2008 – 2018 are observed to be 05 m/yr and 0.82 m/yr respectively.
2	Regional Traffic	c Manageme Level-1	As per the	Additional road	APSEZ	As and When	Presently, ~ 51.7 % of the total SEZ is developed. Based
1	projected traffic data		master plan of APSEZ,	as per master plan will be built		Required	on technical studies,



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	as per the EIA Report of Multi-Product Special Economic Zone, the peak vehicular traffic from the port and SEZ operations (including supporting facilities and colony) could be in the order of 18,300 and 10,400 vehicles per day respectively . There could		eight artillery roads will be connected to either state highway or national highway for evacuating the goods from APSEZ. None of these roads are passing through settlements, thereby avoiding traffic Congestions in the respective villages. The carrying capacity of the eight artillery roads connecting	in future based on the overall progress of the project. Currently about 25% of cargo from APSEZ is transported by Rail and the same will be enhanced to 40% when the facility is fully developed in future. This will further reduce the traffic volumes on the regional road network.			Existing road/rail/conveyer infrastructure facilities are adequate to evacuate the existing cargo. Further, APSEZ's cargo evacuation through rail / conveyer / pipeline has ~23.87%,Additional road facilities will be built as per master plan considering future development. The facilities for transportation of cargo other than road will be enhanced considering future development, which will reduce the traffic volumes on the regional road Network.



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	be a possible increase in traffic congestions on village-highway intersection s and road accidents.		APSEZ is estimated to be about 16,000 PCU/hr as against the envisaged peak traffic volume of 4,500 PCU/hr. Out of eight artillery roads considered in APSEZ master plan, seven roads were already developed and functional. APSEZ has been imparting	APSEZ can undertake technical	APSEZ & GSRDC*	Long Term	APSEZ is being imparting the regular in-house training awareness program in different mode i.e., classroom, on-job training, virtual platform & Assessment by
			Driver Training	feasibility of implementing			internal & external trainer to all drivers and employees on below topics:



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			Programs to all their contractors to enhance awareness on road safety.	Intelligent Transport System (ITS) for the freight carriers associated with their development activities.			 ✓ Basic induction Training for drivers ✓ ITV Driver Training ✓ ITV Driver Induction for Supervisor ✓ Defensive Driving for LMV & HMV ✓ Defensive Driving & BBS ✓ Driver Assessment ✓ Road accident & rescue ✓ Traffic Management & Road Signage ✓ Driving safety training ✓ RORO Driver training ✓ Road Safety ✓ Defensive Driving & Emergency Action Plan ✓ Drivers Responsibilities & Safe driving ✓ Emergency Rescue (Vehicle) Training Approx. 7530 Participants (On roll and contractual manpower) were benefitted from above trainings in compliance period Oct'23 to Mar'24. The same will be continued in future also. APSEZ has also implemented the Remote traffic management system (RTMS) to manage the traffic movements and capturing the violations to further improve the system. Following steps were taken by APSEZ to reduce the accidents.



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							 ✓ Handling and escorting of the ODC for ensuring the smooth movement on the roads. ✓ Traffic Awareness programs for the drivers and regular briefing of the drivers in the parking areas. ✓ Incident handling and root cause analysis for taking necessary action in order to avoid such incidents. ✓ BAC checks for the drivers in order to identify the intoxicated drivers and necessary action is being taken against them. ✓ Water spray drive at gates are being conducted on regular basis during night hours to avoid doziness by the driver while driving. ✓ RTMS devices are being installed at 08 critical locations in order to capture speed violations and enforcing road safety regulations. ✓ Display of traffic signages and lane markings on road in coordination with the Civil team for ensuring road safety rules are being followed by the road users. ✓ We have approx. 100+ cameras which are being utilized for monitoring of traffic movement through CCTV and timely response in order to avoid any congestion and during traffic incidents. ✓ Regular traffic checks by Traffic Marshalls in order to ensure road safety rules (Wearing seat belt/Wearing helmet/Carrying driving license/Speed checks/Documents) is being followed by the drivers.



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							 ✓ Installation of Road furniture's (Cones/Water filled barriers/Cats eye/Spring Posts/Jersey Barriers) for lane segregation, Channelizing the traffic, at Junctions and indicating Caution for the road users. ✓ In case on any Vehicle found breakdown in main roads, we arrange the security crane / lifting machines to remove /relocated the vehicle. Which help for smooth passage to other vehicles. ✓ Ensuring Drivers must wear near necessary PPEs, for that we have arranged a PPE's Stall at APMS parking area (issued on chargeable basis). ✓ Night Patrolling and PA announcement by Traffic DSO to manage traffic condition. ✓ Safety briefing via PA system at Security Gate.
3		s Manageme	ent and sewage tr	eatment & disposal P	lan		
3.	For a fully developed APSEZ facility, water demand will be in the	No- Impact	APSEZ is meeting the current water demand through	As per the master plan and permissions granted under EC, APSEZ will be developing progressively	APSE Z	As and When Required	Presently there are two fresh water sources available with APSEZ. Desalination Plant – 47 MLD Narmada water through GWIL – 9 MLD (sanctioned capacity).
	order of 4,30,000 m3/day (430 MLD). APSEZ will be sourcing		water supply scheme and 47 MLD captive desalination plant at site.	4,50,000 m3/day (450 MLD) of desalination plants to meet the future demand. Hence			Current water demand for APSEZ along with SEZ industries including Adani Power Plant is an avg. of 31.49 MLD. So presently, these sources are adequate to fulfill the current freshwater requirement of entire APSEZ



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	majority of the water from the captive desalination plants, which will be developed in progressive manner.		Necessary water allocation from concerned authorities was obtained and the same will be renewed from time to time as per the directions of state government.	stress on regional water resources due to these developmental projects will be less significant.			including member units. The desalination plant of additional capacities will be installed on modular basis considering future requirement of APSEZ.
3.2	Existing water demand in the Mundra taluk is estimated as 8500 m3/day (@55 lpcd) and the potable and sanitation	Level-2	Adani Foundation has been contributing to various watershed development projects in the Mundra region to enhance ground	Adani Foundation is planning to implement the various water resource conservation programs in next ten years under various schemes.	APSEZ and CGWB*	Long Term	Water needs of APSEZ is being met through existing Desalination Plant of APSEZ and GWIL which may be further enhanced on modular basis. At present Ground water is not utilized for any activities within APSEZ. However various works are being carried out by Adani Foundation continuously under Water Conservation Work to achieve water security in Mundra region by Adani Foundation. Following works are carried out as a part of water conservation work since April – 2018. Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well



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water needs would increase to 37,000 m3/day (@125 lpcd) in future when the area is fully grown into larger municipality due to induced economic growth. Water demand of the local communitie s is met through Narmada water supply system to some extent, but		water resources in the area. Adani Foundation has contributed about Rs. 300 Lakhs so far for the development of 18 check dams.				Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up. To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch project "Sanrakshan" in coordination with GUIDE and Sahjeevan. Since, 10 years considerable Water Conservation Work carried out in Mundra Taluka. Due to satisfactory rain in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures. WORK COMPLETED: Below tabulated Water Conservation Projects completed during Compliance period: Water Conservation Projects: Swajal Project: Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district. Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological



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	largely										demand, water ne Seven villages	security plan has
	depending on the							ocen pr	charec	. 101 (1		
	ground						_	nck me	Wa	ter	Total no.	Total Capacity Created (CUM)
	water in the						140			cture	Structure	Created (COM)
	study area.						Mun	idra	Check	Dam	23	6,07,332.80
	Mundra								Pond		66	1,89,121.08
	block is								Deepe RRWH		275	2750
	reported to								Rechai		209	-
	be a safe							_	Borew			
	ground block as on								Percola Well	ation	24	-
	date. Due to							1	****		l.	
	influx of							ier Comp	•		ties/Projects:	
	people and							Project		Unit	Outcome	Impact
	rapid						No.					
	urbanizatio						1	Check	dam	1	Water Storage	60 + farmer's
	n due to the							Restren			Capacity	120+Acre Area of
	economic							n ing-				Agri land can be
	developmen							Kapaya			48000 Cum	Irrigated
	t, there							D '		24	Dadasa	150.
	could be some stress							Recharg Borewe	-		Reduce Salinity	150+ farmer's 260+ Acre Area
	on the							Dorewe	:11		ingress, and	of Agri land for
	ground										preventing	Irrigated
	water										water run	
	resources in											
	future.											



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							Pipe Culvert at runoff into seaside. Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. Ground recharge activities (pond deepening work for 66 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar.



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							 Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. With the objective of to preserve the rainwater to reduce the impact of salinity and recharge the ground water (the main source of water) to facilitate the Agricultural activities as well as for drinking water. Adani foundation has spent approx. INR 8515.06 lakhs from April – 2018 to March– 2024 for CSR activities which also includes water conservation projects as mentioned above.
3. 3	It is estimated that about 60,000 m3/day (60 MLD) of sewage will be generated from the APSEZ facility when the	No Impact	Seven sewage treatment plants with an aggregate capacity of 3.1 MLD have already built at APSEZ. Treated sewage is utilized for greenbelt	APSEZ is permitted to develop decentralized sewage treatment plants of total 62 MLD capacities. Existing sewage treatment facilities will be augmented progressively	APSEZ	As and When Required	Current installed capacity of wastewater treatment plants is 6.255 MLD (ETP, STPs & CETP) for treatment of effluent & sewage generated at various locations of APSEZ excluding wastewater treatment plants installed within induvial member units. Out of 46 only 4 operational industries within the SEZ are sending their partially treated industrial as well as domestic effluent to the CETP confirming to CETP inlet norms for further treatment and final disposal. Other SEZ industries have their own STPs / ETPs for treatment of wastewater generated from their industrial operation and discharging the treated water on land for horticulture purpose within their premises



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	project is fully developed.		development and sewage is not discharged into either seasonal natural streams or marine environment.	based on the development at APSEZ in future. Similar to existing practices, treated sewage will be utilized for greenbelt development.			as per specific permission granted by SPCB. APSEZ also granted permission to treat 2.5 MLD of sewage generated from Mundra village through CETP and STP. Presently avg. 2.26 MLD of wastewater (in to ETP, STPs & CETP) is treated and being utilized on land for horticulture purpose within APSEZ premises during Oct'23 to Mar'24. Existing wastewater treatment plants are adequate to treat and handle the total effluent / sewage load considering current development. Existing wastewater treatment facilities will be augmented, or new plants will be developed on modular basis considering future requirement.
4	Air quality man	agement Pla		I au	1.0057		
4.	Although all the regulated activities in the study area will be adopting promulgate d emission norms, total	Level-2	APSEZ and other thermal power plants have obtained valid consent to operate and have been	All existing and new industrial establishments will obtain requisite consents from GPCB and adhere to the stipulated emission norms regulations and	APSEZ And Other Industries	Continual Process	APSEZ has been granted requisite permissions from the concerned authorities with stipulated norms for air emission (flue gas as well as ambient air). Ambient Air Quality monitoring is being carried out by NABL accredited and MoEF&CC authorized agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi for APL as per NAAQ standards, 2009. Stack emission monitoring is also being carried out on regular basis. Reports of the same are being submitted



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	air emission mass discharge from the study area would increase.		operating the facilities as per the emission norms stipulated in respective consent orders. APSEZ and other two power plants are	guidelines issued by authorities from time to time.			Adani power and air qual Directive an power plant The AAQM Mar'24) are a	to the concerned authorities on regular basis. Adani power plant has installed continuous emis and air quality monitoring instruments as per C Directive and submitting the reports also. And power plant of CGPL is outside APSEZ area. The AAQM summary for last six months (Oct'2 Mar'24) are as below. Locations: 18 Nos. (APSEZ – 15 + APL – 3 includity villages)						
			monitoring the ambient				Parameter	Unit	Min	Max	Average	Perm. Limit ^{\$}		
			air quality on regular				PM ₁₀	µg/m³	40.8 0	87.32	74.45	100		
			intervals as				PM _{2.5}	µg/m³	14.49	43.22	30.97	60		
			per GPCB/CPCB				SO ₂	µg/m³	8.35	38.91	22.12	80		
			guidelines				NO ₂	µg/m³	11.21	44.25	26.73	80		
			and the data is analyzed and				Values	recorded				rds, 2009 standards.		
			presented to GPCB on monthly basis. Both				Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.							



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			the thermal power plants located within the study area have installed continuous emission and air quality monitoring instruments as per CPCB directive.				Other industries located within the SEZ have obtained requisite permissions from the competent authorities for their respective plant and they also carried out environmental monitoring within their premises to comply with the permission granted. The same has been ensured by APSEZ as well as SPCB during their regular visits. APSEZ carries out regular visits/inspections of member industries within SEZ and last visit was conducted during March, 2024 for EMS & compliance verification. During compliance verification, it was verified that monitoring of air emission was well within the permissible standards based on analysis reports. Same will be continued in future also. The monitoring reports of industries within SEZ are also being submitted to the regulatory authorities as a part of half yearly Compliance report of EC for Multi-Product SEZ.
				A common air quality management committee may be framed under the guidance of the State Pollution Control	APSEZ and Other Industries, Stakeholders, District Administratio n and GPCB*	Long Term And Continual	APSEZ will co-operate and comply with the directions from concerned regulatory authorities for air quality management within APSEZ area. However, at present, APSEZ has formed Internal Environment Monitoring Committee, involving officials from APSEZ, Adani Power Limited and other SEZ member units with following role and responsibilities:



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				Board and district administration to manage regional level emission inventory data that can help to manage regional level air quality management goals.			 Identification of sources of air & noise emission and its dispersion in surrounding villages Remedial measures to eliminate, control, reduce or capture air & noise emission. Identify available resource to abate the air and noise emission. Required additional resources for control of air and noise emission. Drinking water and its testing of all the available fresh water sources in surrounding villages Identify any surrounding villages affected by organization's improper waste disposal mechanism. Last committee meeting was conducted on dated 19/04/2024 and below was the point of discussion for way forward. Brief introduction about the Environment Management Plan (EMP) All members conveyed his environment management practices, issue & suggestions. Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. Discussed about the proper management of the canteen waste. Discussed about the cleaning of outside of the SEZ units.



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							 Discussed about the management of rain water & proper cleaning of the common storm water drainage system. Discussed about proper segregation & disposal of solid waste material. Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor. APSEZ and all the industries within SEZ are complying to NAAQS and same is being ensured by APSEZ. The monitoring reports of industries within SEZ are being submitted to the regulatory authorities as part of half yearly Compliance report of EC for Multi-Product SEZ.
4. 2	Release of particulate emissions from handling and storage of coal at the port and power plants would influence PM10 and	Health Impact	APSEZ has been implementin g the following management plan to control emissions as per the applicable regulations and similar	All industries located in the APSEZ shall adhere to the emissions norms and minimum stack height guidelines issued by CPCB and consent to operate issued by Gujarat	APSEZ and Other Industries	Continual Process	 Following safeguard measures are taken by APSEZ for abatement of dust emissions. Adequate stack heights to the Boilers, D.G. Sets, TFHs & HWGs for proper dispersion of pollutants within APSEZ Using of liquid & Gaseous fuels instead of solid fuels in Boilers, Thermic fluid heaters and hot water generators. Regular sprinkling on road and other open area Regular cleaning of roads Dry fog Dust Suppression System (DSS) in hopper,



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	PM2.5		practices will	Pollution Control			transfer			•	lts	
	concentrati		be adopted	Board from time			 Use of w 	ater m	ist canor	1		
	on in the		in future:	to time.			 Closed tr 		•			
	background		Entire bulk				 Regular 	•	-	•		
	air. This could pose		material handling				 Covering 	-		•	-	aps
	some health		facilities are				• Installat			-		
	impacts		mechanized.				Development of greenbelt along the periphery of the storage yards/back up area					iphery of
	such as		Regular									
	asthma and		water						indling s	ystem fo	or coal a	nd other
	COPD etc.		sprinkling on				dry bulk	_				اممممام ط
	among the		road and				• vvagon i silo	oading	and tru	ск тоаатг	ig throug	h closed
	local		other open				SIIO					
	communitie		areas,				Adequate ai	c collu	tion oor	strol mo	acuroc li	ko ESDc
	S.		regular				FGDs, Bag F					
			cleaning of				_			•		-
			roads, dry				plant.	provisions are implemented within the thermal power				
			fog dust suppression									
			systems				The stack n	nonitor	ing sum	mary for	last six	months
			(DSS) in				(Oct'23 to M	ar'24) a	are as be	low.		
			hoppers,									
			transfer				Total Nos. of					
			towers and				Frequency: Monthly / Half Yearly					
			conveyor				Parameter	Unit	GPCB Limit	Min	Max	Avrg.
			belts, use of				PM	mg/				
			water mist					Nm³	150	16.27	27.23	21.61
			canon,				SO ₂	Ppm	100	6.13	15.49	8.96



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			covered conveyor belts, regular sprinkling on coal heaps,				NO _x ppm 50 16.92 32.62 23.06 Values recorded confirms to the stipulated standards. Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra. All other industries located within SEZ are adhere to provide adequate stack height and pollution control measures for proper dispersion of pollutants as per respective permissions granted by the board. The same is being inspected and ensured by APSEZ as well as SPCB officials on regular basis.
			covering of other types of dry bulk cargo heaps by protective materials, installation of wind breaking wall, development of greenbelt along the	An internal Coal Dust Management Working Group shall be formed by APSEZ to effectively coordinate the approach to coal dust management and	APSEZ and Other Industries, Concerned Stake holders, District Administratio n*	Long Term	As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, with specific role and responsibilities as defined above. The dry cargo is being handled by mechanized system and transported by covered conveyer system, trucks and rail wagons. Wind breaking wall is provided around the coal storage yards of APSEZ as well as Adani Power Plant. Adequate air pollution control measures like ESPs, FGDs, Bag Filters, etc. and adequate stack heights



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			periphery of the storage yards/back up area and mechanized handling system for coal and other dry bulk cargo and Wagon loading and truck loading through closed silo. Both thermal power plants in the study area have installed electrostatic precipitators on the boilers and are meeting the emission norms as per the	monitoring			provisions within the thermal power plant for proper dispersion of pollutants. Green belt / plantation is provided around the periphery of dry cargo storage area and regular water sprinkling is also being done to abate the dust emission from coal hips. Last committee meeting was conducted on dated 19/04/2024 and below were the points of discussion for way forward. • Brief introduction about the Environment Management Plan (EMP) • All members conveyed his environment management practices, issue & suggestions. • Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. • Discussed about the proper management of the canteen waste. • Discussed about the cleaning of outside of the SEZ units. • Discussed about the management of rain water & proper cleaning of the common storm water drainage system. • Discussed about proper segregation & disposal of solid waste material.



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			respective ECs granted. Due to installation of tall stacks as per CPCB guidelines and EC conditions, the relative air pollution impacts due to release of emissions from two power plants is insignificant.					 Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor.
4.	Ships are one of the significant sources of SO2 and NOX emissions in the study area. Marine diesel	Level-2	A Standard Operating Procedure (SOP) has been developed to	The current global limit for Sulphur content of ships fuel oil is 3.5 % m/m (mass by mass). According to MARPOL, the new global cap	APSEZ and Owners	Ship	Long Term	The ships coming to the APSEZ is complying with MARPOL and other shipping rules and regulations. APSEZ has already started providing shore power supply to the tugs (11 Nos.), dredgers (2 Nos.) and barges (1 No.). The feasibility of shore power will be explored and implemented on large scale for the visiting vessels to reduce idling stage ship emissions.



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	engines on the ships often utilize fuel oils that might contain higher sulphur content. As per the internationa I best practices, these marine diesel engines are designed to meet MARPOL regulations with NOX emissions less than 14.4 gram/Kwhr of engine. Due to		be included as a part of APSEZ environment management plan to verify that all ships anchored at the port are adopting the MARPOL4 regulations.	on sulphur in the marine vessel fuels will be 0.50% m/m by the 1st January 2025. APSEZ should explore the possibility of providing shore power to the ships at the port to reduce idling stage ship emissions.			



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	lower stack						
	heights of						
	the marine						
	diesel						
	engine, ship						
	emissions						
	often gets						
	dispersed in						
	the local						
	environmen						
	t and might pose risk of						
	fumigation						
	during the						
	early						
	morning and						
	evening						
	hours due to						
	atmospheric						
	inversion						
	break-up						
	periods.						
				Due to			Presently, cargo evacuation through rail / conveyer /
				implementation			pipeline is ~23.87 % of overall cargo evacuation.
				of Bharat VI fuels			Vehicles having valid DLIC portificate ass salv hairs
	Darad			(MoEF&CC) in			Vehicles having valid PUC certificate are only being allowed to enter within APSEZ area.
	Road		Not	near future the	ADCE7		allowed to effect within APSEZ died.
	vehicle		Not	vehicular and	APSEZ		



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4.	emissions will be other major contributors to the air pollution in the region when the facility is fully developed.	Level-2	Applicable	diesel engine emissions will be reduced by about 50% from the current national levels. APSEZ should develop a robust contractor environmental policy to ensure that Bharat Stage VI emission norms are adopted by all their contractors and sub-contractors.	and All Industries	Short Term	APSEZ, has procured 217 nos. of Electrical Vehicle for internal cargo movement and 183 nos. E-ITV's are in operation. As well as procured 10 nos. LMV E-Vehicles for manpower movement and all are in operation. Electrification of Rail Corridor from Dhrub Railway Station to Adipur Railway Station has completed and movement started by electric locomotive. It will leads to reduce the gaseous emission and increase efficiency of transportation by rail.
5	Noise emissions						
	Noise emissions are envisaged from port operations,		Due to adoption of various mechanized operations at the waterfront development	APSEZ, all the tenant industries and facilities within APSEZ are required to undertake noise monitoring at their facilities to	APSEZ	Continual Process	 Below Safeguard measures are already taken for abatement of noise emissions. Development of greenbelt along the periphery of the operational area. D.G. Sets having Acoustic enclosures. Maintenance of plant machineries and equipment's on regular frequency.



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5. 1	industrial operations and power plants in the study area. Any increase in noise levels beyond three decibels from the background levels would be perceived as noise nuisance (USEPA)7.	Level-1	emissions from the port cargo handling will be minimal. An adequate greenbelt is being developed by APSEZ to further reduce any residual impacts due to noise emissions from the facility. Periodic noise level monitoring programs were adopted by APSEZ.	demonstrate the compliance with the Noise level standards. Continuous noise recording units can be installed by APSEZ at facility boundary to address the community grievances, when ever required. To assess the overall site wide compliance and also to address any community grievances related to noise issues due to operation of APSEZ facilities.			accredited M/s. Unist Vapi as pe submitted basis. The noise (Oct'23 to Locations: Frequency Noise Day Time Night Time Approx. In environme 2023-24, monitoring	and Moles and Moles and Moles and Moles and Moles and Moles and Environments to the community of the communi	eF8CC au nment an ion grant concerned ng summ re as belo a month of Leq Min 57.4 53.8 Lakhs hitoring as so included APSEZ	thorized d Resear and red authorized and red authorized authorized with the content of the conte	l agencich Labs eports a rities or last six y) Leq Avr. 64.7 60.5 er GPCB by AF during ient ai	y namely Pvt. Ltd., are being regular months Leq Perm. Limit\$ 75 70 standards PSEZ for the FY r quality
	and power plants in the study area. Any increase in noise levels beyond three decibels from the background levels would be perceived as noise nuisance	Level-1	, the noise emissions from the port cargo handling will be minimal. An adequate greenbelt is being developed by APSEZ to further reduce any residual impacts due to noise emissions from the facility. Periodic noise level monitoring programs were adopted by	the Noise level standards. Continuous noise recording units can be installed by APSEZ at facility boundary to address the community grievances, when ever required. To assess the overall site wide compliance and also to address any community grievances related to noise issues due to operation of APSEZ			M/s. Unist Vapi as pe submitted basis. The noise (Oct'23 to Locations: Frequency Noise Day Time Night Time Approx. In environme 2023-24,	and Molar and Molar Environ repermiss to the ormalization for the ormalization of the	EF8CC au nment an ion grant concerned a month of the second and the second a month of the second a month of the second and the second a	the star	l agencich Labs eports a rities or last six y) Leq Avr. 64.7 60.5 er GPCB by AF during ient ai last six	



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			were found to be well within the designated noise standards for Industrial facilities.				surrounding community. All other industries located in the APSEZ are adhere to monitor and control the ambient noise level as per permission granted by SPCB and same is being confirmed by APSEZ as well as SPCB on regular basis. Further, till date APSEZ has not received any grievances/notice for noise issues from any of the stakeholders.
				In order to address the public grievances related to noise from the facility, an internal Noise Management Committee can be formed by APSEZ to investigate the root cause and to develop and implement noise mitigation plans in the specific	APSEZ	Continual Process	As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, having role and responsibilities as defined above. Last committee meeting was conducted on dated 19/04.2024 and below were the point of discussion for way forward. Brief introduction about the Environment Management Plan (EMP) All members conveyed his environment management practices, issue & suggestions. Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. Discussed about the proper management of the canteen waste.



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				zones.			 Discussed about the cleaning of outside of the SEZ units. Discussed about the management of rain water & proper cleaning of the common storm water drainage system. Discussed about proper segregation & disposal of solid waste material. Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor. No grievance received for noise related issues, and it is observed that ambient noise level are well within the permissible standards.
6	Surface water of	quality (Terr	estrial and Marine	e)		1	permissione scomodius.
6.	In general, release of untreated wastewater from industrial facilities would pose threat to water	Level -1	As per the master plan of APSEZ, 67 MLD of wastewater is expected to be generated from the fully developed project	As per the master plan of APSEZ, the existing CETP shall be augmented to 67 MLD in progressive manner based on the future demand. The facility should	APSEZ	As and When Required	APSEZ has installed Common Effluent Treatment Plant (CETP) having 2.5 MLD capacities for treatment of partially treated effluent and sewage generated from industries within SEZ. Currently, CETP receives 940.21 KLD (Avg.) hydraulic load and considering the current development scenario, existing CETP is adequate to treat and handle the total effluent load coming from industries within SEZ.



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	streams, estuaries and marine water bodies.		which necessary permissions to set up decentralize d CETPs of various capacities are already obtained. Presently a CETP capacity of 2.5 MLD is in place. Presently member units treat their effluents to meet the CETP inlet norms and then send it to CETP. Treated wastewater from CETP	discharge of treated industrial wastewater to 16 MLD as per the permits. Remaining treated wastewater shall be utilized for horticulture purpose.			SEZ are sending their partially treated industrial as well as domestic effluent to the CETP confirming CETP inlet norms for further treatment and final disposal. Other industries within SEZ have their own STPs / ETPs for treatment of wastewater generated from their industrial operation and discharging the treated water on land for horticulture purpose within their premises as per permission granted by SPCB. The capacities of CETP will be enhanced on modular basis as per future requirement. Presently avg. 2.26 MLD (from CETP, ETP & STPs) of treated water is being utilized on land for horticulture purpose within APSEZ premises during period Oct'23 to Mar'24 and no discharge is made to any other source.



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			meets the stipulated discharge norms for utilization for greenbelt development within the APSEZ areas.				
			Online wastewater quality monitoring systems are installed at CETP to ensure quality of treated effluent meets the requisite discharge norms. No wastewater from CETP is discharged into natural	Efforts shall be made to recycle complete treated wastewater for port operations and industrial operations of APSEZ in future based on a detailed technoeconomic feasibility study.	APSEZ	Based on outcome Technofeasibility Study	Online continuous effluent monitoring system (CEQMS) installed at the discharge point of CETP to track any deviation from discharge norms. CEQMS is connected with CPCB/GPCB server & data is continuous transferring in both servers. Presently entire quantity of treated water from CETP is used for gardening / horticulture purpose within APSEZ premises.



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			date											
			Runoff during monsoon from coal storage yards is collected in sedimentatio n ponds (dump pond) to remove any residual dust particulates for further disposal into	Storm water runoff from the facility during the first rain shall be sampled and analyzed for the presence of heavy metals or other criteria pollutants to adopt corrective and preventive actions to protect the marine water quality. All red and	APSEZ	Continual	There are provision of drains around coal stack yar carry to runoff water to dump ponds. This water either used for dust suppression or after sedimental (to remove residual dust), is allowed disposal to see the presently Marine monitoring is being carried out of in a month by NABL and MoEF&CC accredited again namely M/s. Unistar Environment and Research Levt. Ltd., Vapi for APSEZ & APL both. The anareports of the same are being submitted to concerned authorities on regular basis. The marine water quality monitoring summary for six months (Oct'23 to Mar'24) is as per below. Locations: 14 Nos. (APSEZ – 9 + APL – 5) Frequency: Once in a Month / Half Yearly					rater is ntation sea. It once agency th Labs nalysis to the		
				hazard category industry within			TEST PARAM UNIT Cumulative Surface Cumulative Bottom ETERS					ottom		
				APSEZ shall adopt spill					Min	Ma x	Aver age	Min	Ma x	Aver age
				prevention and			рН		7.9	8.2	8.0	7.86	8.2	8.04
				control program and no effluents shall be discharged into			BOD	mg/L	2.2	5.1	3.84	0	5.2	4.82



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				storm water- drains.			TSS	mg/L	76	152	107. 45	78	128	107. 46
							DO	mg/L	5.3	6.5	5.98	4.2	6.2 5	5.41
							Salinity	ppt	35.24	39	36.9 4	36.1 5	40	37.8 2
							TDS	mg/L	35864	366 10	362 25	345 00	375 40	3707 7
							Temper ature	оС	24.7	29. 8	27.3 8	24.2	29. 7	26.9 2
							Approx. environm 2023-24, monitorii	nental whicl	monitor h also	ikhs i ing a includ	s spe ictivitii des ar	nt by es du nbient	APS	the FY
			Detailed marine hydrodynami c modelling studies revealed that	Good dredging practices shall be adopted by APSEZ: (i).Improving the dredging	APSEZ	Long Term	No capit Dredged dredging within de	mate is bei ep sea Mana	rial ge ing disp as iden gement	nerate oosed tified plan is	ed du at de by NIC	ring i signat). ted for	maint ed lo	enance cations ring out
			the current and proposed dredged soil disposal practices,	accuracy (ii).Improving onboard automation and monitoring, (iii). Reduce spill and loss, (iv).			dredging Presently Trailer s dredging Marine m	there uction	are 3 no) of dr	s. (2 N edger	los. Cu s are	tter su in o	oction perati	+1No. ion for



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			sea water intake and outfall facilities and desalination plant outfall etc have shown insignificant impact on the marine eco-system. As part of the comprehensi ve environment al monitoring program, APSEZ has been adopting marine water and sediment quality monitoring on monthly	evaluating the need for installing silt screens near mangrove areas during the dredging phase operations, (v). Environment friendly dredging activities can be undertaken in such a way that the overall turbidity levels near the mangrove and ecologically sensitive zones shall not exceed 100 NTU or 200 mg/l of TSS (10% lethal level of fish) Existing marine monitoring program shall be continued as per the directions			by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. The analysis reports of the same are being submitted to the concerned authorities on regular basis. Summary of marine water for the last six months is as mentioned above. The same practice will be continued in future also as per direction by MoEF&CC as well as GPCB. Monitoring will be focused near ecological sensitive area in case of need to carryout capital dragging near such areas.



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			basis.	of MoEF&CC and GPCB.			
7	Groundwater q	uality and sa	linity ingress				
7.	While Mundra block is enjoying safe ground water status as on date (based on the data published by CGWB), due to induced economic and population growth, use of ground water resources by the local people might increase in	Level-2	APSEZ is not utilizing ground water for any type of use. APSEZ is meeting the current water demand through Narmada water supply scheme and 47 MLD captive desalination plant at site.	A dedicated desalination plant of capacity 4,50,000 m3/day (450 MLD) will be developed in progressive manner to meet the APSEZ requirements.	APSEZ	As and When Required	Present source of water for various project activities is desalination plant of APSEZ and/or through Gujarat Water Infrastructure Limited (GWIL) and same is sufficient to meet the present water demand. APSEZ does not draw any ground water. The desalination plant of additional capacities will be installed on modular basis considering future development and requirement.



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	region. This might increase the TDS and chloride levels in the ground water in future.						
7. 2	Due to induced growth in the region, pressure on the available ground water source would increase and this could pose some threat to salinity ingress.	Level-2	Ground water is not drawn by APSEZ for its operations. Natural streams (seasonal rivers) passing through the APSEZ area will not be disturbed, the micro- watershed in the area will not be disturbed.	The Govt. of Gujarat, Narmada, Water Resources, Water Supply & Kalpsar Dept.,(WRD)12 has been implementing various salinity ingress prevention projects	District Administratio n*	Long Term	APSEZ will co-operate and comply with the directions from concerned regulatory authorities. APSEZ does not draw any ground water for the fresh water requirement. However, Adani Foundation – CSR arm of Adani Group has carried out rainwater harvesting activities in the nearby villages for benefit of the locals. Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up. To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch



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			Due to the above reasons, the possibility of salinity ingress due to APSEZ development is not envisaged. Mundra and Anjar blocks fall under fresh water to medium salinity zones. It can be observed that little variation was observed in the ground water salinity levels from year				Sahjeevan. Since, 10 y carried out in current as per inc Governmen WORK COM Below tabu during Com Water Cons Swaja > Aim: SWAJ, of groo in vari > Water the K securi weath condit	rears considera t in Mundra Ta year 1.11 mtr g creased in coa nt Figures. PLETED: Ilated Water Cor pliance period: ervation Projects I Project: The Foundation's AL, is aimed at ad undwater levels ous parts of Kuto Security Plan: D utch region, it is ty drinking and lii er condition, rain circle and water de prepared for the Water conservation	ble Water Coluka. Due to round water stal belt of stal belt of servation Processing the aland reductions district. We to arid clim is essential to velihood purp fall character emand, water Seven village.	with GUIDE and onservation Work satisfactory rain table increased Mundra as per ojects completed ervation program, larming depletion in water sources latic characters of o plan for water oses. Considering s, geohydrological security plan has s. Total Capacity Created (CUM)
			2013 to 2016				Mundra	Structure Check Dam	Structure 23	6,07,332.80
			across the Mundra and					Pond Deepening	66	1,89,121.08



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			Anjar blocks.						RRWHS		275	2750
			This aspect						Recharg	е	209	-
			confirms						Borewel			
			that the						Percolat Well	ion	24	-
			overall				<u> </u>		vven			
			salinity				Ea	rlier C	ompleted Ac	tivitie	s/Projects:	
			ingress from					-	1		1	1
			the shore					Sr.	Project	Unit	Outcome	Impact
			into the land					No.				
			due to					1	Check dam	1	Water	60 + farmer's
			existing						Restrength	ľ	Storage	120+Acre Area of
			APSEZ						en ing-		Capacity	Agri land can be
			facilities and						Nana		increased by	Irrigated
			power plant						Kapaya		48000 Cum	
			outfalls are					2	Doobosoo	21	Dadwaa	150+ farmer's
			less					2	Recharge Borewell	21	Reduce Salinity	260+ Acre Area
			significant.						Boreweii		ingress, and	of Agri land for
											preventing	Irrigated
											water run	
								3	Pipe Culvert at	Ĩ1	prevent water runoff into	35 farmers' 120+Acr
									Checkdam		seaside.	e Area of Agri
									at Bhujpur		5005100.	land can be
												Irrigated



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							 Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar. Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. With the objective of to preserve the rainwater to



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							reduce the impact of salinity and recharge the ground water (the main source of water) to facilitate the Agricultural activities as well as for drinking water. Narmada Water Resources, Water Supply & Kalpsar Dept., (WRD)1 has been implementing various salinity ingress prevention projects. Under Sardar Sarovar canal project, Govt. of Gujarat has proposed to implement about 8200 Km stretch of water canal and the project is at various stages of implementation. Under this project about 112,000 ha of land in about 180 villages will be benefitted with irrigation needs. This will significantly reduce the pressure on the ground water resources in the region.
				While the individual industries in the study area will continue to undertake ground water quality monitoring as per the	All Concerned Stakeholders, District Administratio n and CGWB*	Continual Process	APSEZ (9 Locations – half yearly) & Adani Power Ltd. (5 Locations – quarterly) is carrying out ground water sampling and reports of the same are being submitted to the regulatory authorities on regular basis. The summary of APSEZ ground water quality monitoring for last six months (Oct'23 to Mar'24) are as below. Nos. of Location: 09



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				environmental			Parameters	Unit	Min	Max	Average
				clearances			pH @ 25 ° C		7.11	8.32	7.77
				issued for the			Salinity	ppt	0.99	21.11	5.86
				respective			Oil & Grease	mg/L	BDL(MD L:5.0)	BDL(MD L:5.0)	BDL(MDL: 5.0)
				projects, a regional level ground water			Hydrocarbon	mg/L	Not Detecte d	Not Detecte d	Not Detected
				conservation action			Lead as Pb	mg/L	BDL(MD L:0.01)	0.11	0.01
				committee can			Arsenic as As	mg/L	BDL(MD L:0.01)	BDL(MD L:0.01)	BDL(MDL: 0.01)
				the guidance of			Nickel as Ni	mg/L	BDL(MD L:0.02)	0.10	0.01
				state ground water board and district			Total Chromium as Cr	mg/L	BDL(MD L:0.05)	BDL(MD L:0.01)	BDL(MDL: 0.01)
				Administration.			Cadmium as Cd	mg/L	BDL(MD L:0.003)	0.14	0.02
							Mercury as Hg	mg/L	BDL(MD L:0.001)	BDL(MD L:0.001)	BDL(MDL: 0.001)
							Zinc as Zn	mg/L	BDL(MDL :0.05)	0.14	0.02
							Copper as Cu	mg/L	BDL(MD L:0.05)	BDL(MD L:0.05)	BDL(MDL: 0.05)
							Iron as Fe	mg/L	BDL(MD L:0.1)	1.78	0.43
							Insecticides/ Pesticides	µg/L	Absent	Absent	Absent
							Depth of Water Level	mete r	1.90	2.20	2.07



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							from Ground Level
							BDL – Below Detection Limit MDL – Minimum Detection Limit
							Approx. INR 13.37 Lakhs is spent by APSEZ for
							environmental monitoring activities during the FY
							2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.
							The freshwater requirement of all the industries within SEZ is being satisfied through APSEZ. All the industries are encouraged to monitor ground water quality as per the permissions granted by competent authorities.
							As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited and other member units, having role and responsibilities as defined above.
							APSEZ will co-operate and comply with the directions from concerned regulatory authorities for ground water management.
8	Waste Manage	ment			_		
	Solid waste will be generated from		APSEZ has been adopting Zero waste	APSEZ will continue to adopt Zero Waste Initiative			Presently APSEZ has implemented Zero waste Initiatives as per 5R (Reduce, Reuse, Recycle, Recover & Reprocess) principles of waste management. At present, APSEZ has developed material recovery
8.	industrial	Level-2	Initiatives	and wastes will	APSEZ	Continual	facility for 6.0 TPD capacities. A well-established



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1	activities of APSEZ and other permitted facilities in the study area including Mundra town. These wastes would contain recyclable material, constructio n debris, organic waste, inert material and e-waste etc. In the absence of any organized source segregation programs		and the entire waste generated from existing operations is segregated and disposed to recycling vendors, thereby APSEZ has achieved zero landfill status as on date.	be segregated at source and disposed to various recycling vendors, co-processing in cement plants. This initiative helps not only to reduce the waste to landfill significantly, but also to recycle the materials there by avoiding ecological impacts.		Process	system for segregation of dry & wet waste is in place. All wet waste (Organic waste) is being segregated & utilized for compost manufacturing and/or biogas generation for cooking purpose. The compost is further used by in house horticulture team for greenbelt development. Whereas dry recyclable waste is being sorted in various categories. Presently manual sorting is being done for sorting of different types of solid waste. Segregated recyclable materials such as Paper, Plastic, Cardboard, PET Bottles, Glass etc. are then sent to respective recycling units, whereas remaining non-recyclable waste is bailed and sent to cement plants for Co-processing as RDF (Refused Derived Fuel). The same practice will be continued in future also. APSEZ has also been recognized for Zero Waste to Landfill certification from reputed organization. APSEZ, Mundra is certified for Zero Waste to Landfill management system (ZWTL MS 2020) by TUVRheinland India Pvt. Ltd. (valid up to 31.05.2024). Details of the same were submitted as part of compliance report submission for the duration of Apr'21 to Sep'21. APSEZ is being done proper solid waste management in his operational area with 5R principle as per Waste Management Plan.



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	and material recycling strategies and infrastructu re facilities, these wastes will enter into environmen t and would pose long term health impacts.						
8.2	Considering an average solid waste generation of 0.25 Kg/person/d ay, the estimated solid waste from facilities within	Level-2	APSEZ has made a provision for central waste management facilities within the existing site based on the future needs. As part of the Zero Waste	The existing waste segregation and material recycling facilities will be augmented to dispose safely the wastes generated from APSEZ areas. Solid Waste Management Program shall be	APSEZ	Continual Process	Industries located within the SEZ area are also complying with the waste management rules stipulated by statutory authorities and same is also being confirmed by APSEZ as well SPCB on regular basis.



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	APSEZ will be in the order of 100 TPD (36,500 TPA).		Initiatives, no landfill facilities will be installed at APSEZ.	adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016			
8.3	About 35 TPD (13,000 TPA) of solid waste would be generated from the proposed industrial areas located outside the APSEZ area.	Level-2	As per the MSW Rules 2016 all the industrial facilities and SEZs are required to adopt waste segregation facilities at the respective properties and non-recyclable waste shall be disposed	Solid Waste Management Program shall be adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016	All Industries	Continual Process	



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			to landfill sites.				
9	Ecological aspe	ects (terrestr	ial and marine)				
9.	About 1576 ha of shrub forest land contiguous to APSEZ area is applied for land diversion for various developmen tal activities. This might have certain level of changes in the biodiversity	Level -1	It is noted that the designated forest land is free from any native vegetation and comprises of Prosopis juliflora. It is also noted that no endangered species are present at the shrub forests that are applied for land	APSEZ has approached concerned authorities for diversion of designated forest land. Suitable compensatory afforestation plan shall be adopted based on the recommendation s and directions of the concerned authorities. Due to adoption of compensatory afforestation program through a scientific manner, the	APSEZ/State Forest Department*	Long Term	Stage – 1 Forest clearance granted for diversion of 1576.81 Ha Forest land. APSEZ has applied for getting EC & CRZ clearance for SEZ / Industrial Park in 1576.81 Ha Forest land. ToR accorded by MoEF&CC on 30.11.2021 and draft EIA is being carried out through NABET accredited consultant.



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	in the study area.		diversion. It is also noted that no forest produce is reported from this designated forest land parcel due to lack of economic importance of plant species reported in the shrub forest. It is also noted that no tribal lands are located in the designated forest land parcel. Hence there	overall ecological footprint in the district will be increased. Due to plantation of native tree species as part of greenbelt development, the overall biodiversity of the region will increase considerably when the project is fully developed.			



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			will not be any change in biodiversity due to the proposed diversion.				
9. 2	Mangrove conservation areas are located adjacent to the APSEZ area. Accidental discharges of industrial effluents into the marine environment would pose certain ecological risk.	Level -1	No development activities will be undertaken within mangrove conservation areas. APSEZ has taken up large scale mangrove afforestation activities in an area of more than 2800 ha at various locations across the	Mangrove footprint and health status shall be monitored annually	APSEZ	Continual Process	As per study conducted by NCSCM in 2017, mangrove cover in and around APSEZ, Mundra has increased from 2094 Ha to 2340 ha (as compared between 2011 to 2017). The analysis has shown an overall growth of 246 ha. The cost for said study was INR 3.15 Cr. Last study was carried out in the year 2019 and based on that there is an increase of mangrove cover between March 2017 (Total 2340) and September 2019 with an extent of 256 Ha (Total 2596 Ha Area) which is about 10.94% rise in growth rate, also It reveals that the mangrove and the tidal system in the creeks remained undisturbed over this period. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. Analysis of data between categories indicated that there was an increase in dense mangroves along with the conversion of scattered into sparse, that shows the



S. en No. I a im the de	dentified nvironmenta and social npacts for ne fully eveloped cenario vear 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Com	pliance	
			coast of Gujarat state in consultation with various organization s The Adani Foundation introduced 'Mangrove Nursery Developmen t and Plantation' scheme in the area as an alternative income generating activity for the people of the region.				As a	part of GCZMA	recommendations and NCSCM cion action plan, APSEZ has activities. Compliance APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%.



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								 This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of mangroves in a progressive direction. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. According to GUIDE Mangrove monitoring study report November 2023 (The report was submitted during the last compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi



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							mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. • Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). • The cost of the said study was INR 23.60 Lacs incurred by APSEZ.



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								Summary mapping (from 201	and	moni	grove toring
								Mangro ve mappin g Year	Mangro ve cover total	cove	grove r area eased
									Area (Ha.)	Ha c.	%
								2011	2094	-	-
								2011 to 2016-17	2340	24 6	11.7 5%
								2017 to 2019 till March	2596	25 6	10.9 4%
								2019 to 2021 till March	2723	12 7	4.8 9
								Total	2723	62 9	
								To compl recommen mangrove	ndations	rega	erding



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							2.	Tidal observation in creeks in and around APSEZ	2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023. • APSEZ carried out the tidal observations at locations similar to 2017 in Kotdi, Baradimata, Navinal, Bocha and Khari creeks under the guidance of NCSCM. • The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. • The cost of the said activity was INR 1.0 Lacs.
							3.	Removal of Algal and Prosopis growth from mangrove areas	 Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 Lacs during the FY 2022-232023-24.



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								Awaranaa af	The report of algal removal is attached as Annexure – 3 .
							4.	Awareness of mangroves importance in surrounding communities	Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattels / 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg. • Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land



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							development with strong Community Contribution and Mobilization. Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas. APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23 Refer CSR report attached as Annexure – 2.



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							To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked. After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work was 23.60 Lacs (Including Taxes), which was paid by APSEZ. GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted during the last EC compliance report submission Apr'23 to Sep'23.



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							According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradi Mata, Navinal, Bocha and Khari creeks and also in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019. Now, according to GUIDE Mangrove monitoring study report November 2023 (The Report was submitted during last EC compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi Mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ



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							showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023. Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE,



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							continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem. Mangrove plantation done at Luni Sea coast with school students on "International Day for the Conservation of the Mangrove Ecosystem" on 26th July-2023 and Bhareswar sea coast area with fisher folk community on "World Nature Conservation Day" on 28th July-2023. Web talk show was organized on the occasion of "International Mangrove days On Multi species Mangrove biodiversity with Joint effort of GUIDE and Adani Foundation, Mundra. 8th June is celebrated as world ocean day. Adani foundation had celebrated the world ocean day by coastal cleaning activity at Mandvi Beach.
9.3	Outfall from the thermal power plants desalination and CETP would pose	Level-1	A detailed marine hydro-dynamic and dispersion modelling of the study area indicates that the	All approved marine outfalls shall be monitored for salinity, temperature and other designated parameters as per consent to	APSEZ and Concerne d Industry	Continual Process	Presently marine monitoring is being carried out by the Adani power plant at the marine outfall locations and reports are being submitted to the concerned authorities on regular basis. APSEZ is carrying out Marine monitoring once in a month at 9 locations in deep sea by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. The analysis reports of the same are being submitted to the



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	certain level of impact on the marine environmen t.		background temperature and salinity at mangrove conservation area will not increase from the prevailing background levels as the outfalls are located far away. APSEZ and respective power plants in the study area have been monitoring the marine water quality status on monthly basis for the stipulated environment	establish issued by GPCB. Existing marine enviro nmental monitoring program shall be continued.			Adani power 5 locations (2 by NABL and Unistar Envir analysis report concerned at of marine wa The comparis and current in Parameter Temp. Salinity As per above major deviatiand thus indi	plant is location when the plant is location of the plant is location in the plant is location i	s also dons at CC account & Rome samiles on allity is smarine ring dal 29.8 40	oing marin outfall loc credited ag esearch La e are being regular ba shown abo water res ta are as b Max Present 30 36.7 an be seen	e water ation) in pency name by Pvt graphs is the ve. ults be elow. CIA 24.2 35.2 4 that ton of p	m deep sea amely M/s. Ltd. The tted to the esummary tween CIA Min Present 30 7 here is no arameters



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			al and ecological parameters.				
9. 4	Terrestrial Ecology: Study area doesn't have any notified national parks or ecological sanctuaries. Since the area falls under dry deciduous shrubs. Due to scanty rains in the area, the overall natural green- cover/vegetat ion in the area is very small.	Level-1	APSEZ has developed greenbelt in an area of 550ha as against the committed area of 430ha. A dedicatenurs ery is set up to promote plantation. APSEZ have undertaken a plantation with about 9.6 Lakh fully grown trees.	The compensatory afforestation area to be monitored annually to check the survival rate of the plantation.	APSEZ	Continual Process	APSEZ has developed its own "Dept. of Horticulture" which is taking measures/ steps for terrestrial plantation/greenbelt development. APSEZ, Individual SEZ Industries and Adani Power Plant has developed approx. 700 Ha. area as greenbelt within the APSEZ area including SEZ industries & Adani Power Plant. Dedicated horticulture department is maintaining and monitoring the terrestrial green belt development on regular basis to check the survival rate of plantation. Total expenditures of the horticulture dept. of APSEZ during the FY 2023-24 within APSEZ is INR 904 lakhs.



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10	Socio- economic aspects						
10.1	Population growth in the Mundra region was reported to be in the order of 85% during the past decade (2001-2011). Further expansion of the urban area could be possible due to induced economic growth in the region. Increase in population will have a additional need for public infrastructure in the region.	Level-1	Dedicated townships are developed within APSEZ area with necessary community infrastructure s such as hospital, school, recreational facilities, sewage treatment and waste collection facilities. Adani Foundation has been undertaking various CSR programs under the principal themes such	The existing townships will be expanded to accommodate about 4lakh people when the project activity is fully developed.	APSEZ	As and When Required	APSEZ has developed two townships (Shantivan and Samudra) accommodating 2302 households and associated infrastructure facilities. Accommodation is made available for all interested employees working within Adani group & SEZ industries. Out of which 95.57% Occupancies are accommodated within the townships and rest are available for employees working within APSEZ. At present 46 nos. of industries (processing & non-processing) are operating within the SEZ. Township facilities are also made by SEZ industries within Mundra town for their employees having basic infrastructure facilities and requirements. Most of the employees working in SEZ industries are residing in Mundra township having all basic requirements and associated facilities. The existing social infrastructure facilities are adequate to accommodate the people considering present APSEZ development. The existing townships with associated facilities will be expanded as per requirement. Other infrastructure facilities have been developed for people are as follows. • Multi-Specialty Hospital • School



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			as education, community health, sustainable livelihood and rural infrastructure. About Rs. 97 Cr has been spent on various CSR activities in the Mundra region since 2010. Similar community development programs (based on need based assessment) will be continued in future as well with allocation of appropriate budget.				 Commercial complex Religious place APSEZ is actively working with local community (including fishermen community) around the project area and provides required support for their livelihood and other concerns through the CSR arm – Adani Foundation in the main five persuasions is mentioned below. Community Health Sustainability Livelihood – Fisher Folk Education Rural Infrastructures Adani foundation has spent approx. INR 8515.06 lakhs from April – 2018 to March – 2024 for CSR activities which also includes cost of rural infrastructure projects. Major works carried out since April 2018 as a part of CSR activities are as below. Current FY 2023-24 infrastructure development activities: 377 - AC Roof sheet support to Fisherfolk Vasaha 1700+ Benefited.
			3.1.				 2 Development of Common Gathering flooring work – 4000+ Benefited.



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							 195 Stall – Vegetable market – 900+ Benefited. Solar Panel System at Mundra – 600+ Benefited. Maintenance, Fencing & Material Support - 30+ Benefited.Renovation of Shed at Shekranpir Bhopavandh - 2000+ Benefited. Renovation Check dam and CC road work at Nani Khakhar – 200+ Benefited. Renovation of High School at Zaarapa – 2200+ Benefited. Construction of Pipe Culvert – 400+ Benefited. Construction of chain-link fencing at Mangra village – 300 people benefited. Gaushala Shed at Zarapara village – 400 cettle benefited. Renovation of approach road, Zarpara – benefiting 400 villagers. Renovation of Civil and Electrical Work at ITI, Mundra - 500 students benefited. Construction of 21 Borewell Recharge in Nagmati River - 150+ farmer benefited. Check dam Desilting and restoration at Nana Bhadiya – 100+ farmers benefited. Renovation of Check dam at Pavadiyara village - 300 people benefited. Renovation of Balwadi at Juna bandar & Luni bandar. 185 RRWHS construction is ongoing in various villages - will benefit 1300+ residents.



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							 Supply & installation of Solar panel (3.25 KV) at CGP, Mundra – benefiting 1200 people. Development of Model Farm in Zarpara, Siracha & Mangra – Benefiting 300 people. Renovation of approach road at various fisherfolk vasahat. Last FY 2022-23 infrastructure development activities: 40 RRWHS structure have been completed 208 Bore-well recharging activity is completed. Percolation well Recharging work at Bhadiya & Mota Kandgra village. Sluice gate Construction to Control Flood during Flooding at Khoydivadi Vistar Bhujpur. Pond Beatification and Bund Strengthening at Bhujpur village. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. commissioning of Community Training Centre at Shekhadiya. Two Pond Deepening at Zarpara under Amrut Sarovar Yojna. Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan.



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							 Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. JCB & Hitachi Machine Support for Pre-Moonson activities. Repairing and Maintenance work of Approach at Luni, Bavdi and Navinal Fishermen Bandar. 3 Re-strengthening of Approach Road. Renovate Blood storage Lab CHC Mundra Renovation Blood storage Lab CHC Mundra. Constructed 2 nos. of CC Road of 700 mtr. Constructed Community Training center Shekadiya. Constructed 2 nos. Disable Widow Toilet Block Installed R.O. Plant at Mokha with capacity 1000ltr /HR. Constructed 4 nos. Common gathering Open Shed Constructed 3 nos. of Water Tank at Luni Bandar. Developed of Cricket Ground at Hatdi Village Pond Deepening work at Vadala & Mota Bhadiya Artificial recharge borewell in Borana, Mangara & Dhrub village. Under Dignity of Drivers Project, Adani Foundation has constructed Resting Shed for Drivers entering in SEZ Premises. Total 50 beds are constructed, drinking water and sanitation plus recreational – TV Facilities.



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							Similar community development programs (based on need based assessment) will be continued in future as well with allocation of appropriate budget.
10. 2	The overall sex ratio was found to reduce by 28% in the Mundra taluk (study area) during the period 2001 - 2011. This could be attributed to increase in influx of working men in the region due to rapid economic development. Similar trend might continue in future due to induced economic growth in the region.	Level-2	Adani foundation is taking up several girl child education programs as part of CSR activities to create awareness about girl child protection.	Suitable regional level awareness programs on the girl child protection and encouragement programs in line with state and national policies shall be adopted under Corporate Social Responsibility programs in association with district authorities.	APSEZ, Other development projects and District Administration*	Long Term	Major works carried out since April 2018 as a part of CSR activities to create awareness about girl child protection are as below. • The Adani Foundation provided scholarship support to motivation and encouragement of fishermen boys and girls for higher education under this program. We extend 100% fee support to female candidates and 80% to male candidates."W. • Student Benefitted Under Uthhan Project: Utthan Initiatives Benefited



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							Adani Students Development Center (ASDC) Introducing English as a Third Language Enhancing Reading Habits IT on Wheels Teachers' & Sahayak Capacity Building Formation of Eco Club Day Celebrations & Collaboration with GoG Mothers as catalyst in transformation Strengthening Stakeholders	2 Adani Evening Education Center, 5 Adani Competitive Coaching Center, 5 Adani English Coaching Center Students: 5000+ Classes 1-4, Curriculum, Every Friday morning assembly in English Redding corner, 1000+ Oasis workshop, 162780 Books CICO, 100+ Schools partner from 10+ Country in International school library month (ISLM) 2 dedicative van, 2 IT instructors, 55 laptops, 34 schools, Empowering 4170 students, 200+ High schools' students 6 Students selected in District level sports school, Inspiring more 100 Students. Khel Maha Kumbh: 2000+ 3500+ Hours Capacity building program + Webinar + Diksha + 10 full days training. Plastic free village workshop: 1250+ Students, Environment Awareness program & Tree plantation in schools. Summer Camp: 6000+ Students Diwali Mela: 5500+ Students. 1400+ Parents participated. Mothers meet: 700+ Mothers Joined: 15000+ this year. (Meetings + Home Visit) Support in Taluka, District & state level various initiative with DIRT, BRC, Strengthening SMC Committee.



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							 Uthhan Project promotes girl child education, creating awareness through various Govt schemes i.e. Vahali Dikri Yojana, Sukanya Samriddhi Yojana etc. till date covered more than 1200 girl child to get benefit out of it. AVMB School Bhadreswar where Free of Cost education is provide to Poor and Needy Family Child up 10 standards More than 500 Students are benefiting every year. Separate sanitation facilities for girl child in schools. Menstrual Hygiene Awareness: To educate and empower rural girls and women about menstrual health, break down negative social views on menstruation, supply to enhance their overall health, education, and empowerment." Till date 36% women had never used sanitary Napking single time now they started using due to our intervention. This will reduce UTI @ 22%. As our sample survey. 1587 Women and 494 School girls from 18 nos. of villages. Beti Vadhavo Programme was organized in 32 Villages in the presence of Village Sarpanch and other leaders in year 2017-18. We explained people about the various topics i.e. importance of girl child, Sex Ratio, Gender Equality and laws regarding Child abortion. This initiative was well accepted by community and we have observed a visible change in their mindset.



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							 During the year various activity like, Covid-19 awareness in village & Slum Area, Menstrual Hygiene Day, Breastfeeding Week, National Deworming Day, National Nutrition Month had been celebrated. Project Suposhan is initiated with the Motive to focus on adolescent and Reproductive age women nutrition part. Till date covered more than 12500 women and 8700 adolescents under this Project and brought them to considerable status. Curb malnutrition amongst Children, Adolescent girls and Women in our CSR villages. 204 beneficiaries covered in Breastfeeding Week 320 beneficiaries covered in National Deworming Day 20 villages covered in celebration of NATIONAL NUTRITION MONTH 42 FAMILY COUNSELLING 2059 Women participated in celebration of Women's Day week. To reduce malnutrition and anemia amongst Children 95 % & adolescent girls and pregnant & lactating women by 70 % in three years Reduction IMR and MMR Support Awareness & Cover 100 % Vaccination taken by Child & women. SuPoshan Thanksgiving program was organized. In this webinar DDO, CDPO Mundra and other



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							dignitiaries remained present and appreciated the efforts to overcome malnourishment in Mundra and Bitta. The National girl child day was celebrated with ICDC Department with Vahli Dikri Yojna form filling, paediatric health camp and Baby health kit distribution at Mundra. Mrs. Ashaben-CDPO Mundra was remain present in this event. Total 61 forms has received approval letter from GOG and 15 forms filled upon the same day. Adani Foundation is working with 15 Self-help group and supporting to develop entrepreneur skills to become self reliant, sourcing more than 350 women to absorb in various job –this will give them identity, confidence and right to speak in any decision for home, village and working area. About INR 8515.06 lakhs has been spent on various CSR activities in the Mundra region since April 2018 to till March 2024 including cost of community health and education for woman and girl child.
10. 4	Due to economic growth leading to rapid urbanization, which prompts the	Level-2	Adani hospitals, Mundra is setup by Adani group near Samudra township with a goal to provide	APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the growth scenario at	APSEZ	Long Term	Adani hospitals (Multi-specialty), Mundra is having 110 bed facility and same is setup by Adani group near Samudra township. Primary health center and community health center are in place within the Mundra taluka.



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need for healthcare facilities in the region. For an influx of 6 lakh people from APSEZ operations and additional 3 Lakh from induced growth by th year by 2030 (fully developed scenario), total hospitals facilities with about 540 beds would be required.		primary and secondary health care services to Adani group employees and the local populace of Mundra. The existing 100 bed Adani hospital at Mundra has been catering the services ranging from wellness and preventative care.	APSEZ development.			Other than this Adani foundation is doing various activities as part of community health. The details of last year are as below. • Mobile Heath Care Units and Rural Clinics • O7 Rural Clinics • O5 villages of Mundra & O2 village Mandvi block has benefited by rural clinic service. • Total Patients Benefitted FY 23-24: -23327 (direct & indirect) by Mobile van and rural clinic • 2 financially challenged patients has been supported with Dialysis treatment at 124 Times which added day in their Life. • Provided 41,546 medical health services and conducted health awareness camps for 763 High school students. • Cataract-Free Mundra: The initiative is a dedicated effort to eradicate cataract-related vision impairments specially focused on Senior citizen through Meticulous planning as below. Lives Impacted: - 1131 ➤ Comprehensive Eye Screenings at Village level ➤ Cataract Surgeries to GKGH, Bhuj ➤ Post-Operative Care and Follow-up ➤ 5 successful Operation



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							 Specialty camps, Eye checkup camps, Blood donation camp, Anti-tobacco awareness camp, TB screening, and other are conducted in core villages as well as in labour colonies. Specialty health (Gynec, ophthalmic, specialty health camp): - 5795 Patients Benefited. General health camp: - 1618 Patients benefited. Blood Donation Camp: 1715 people have donated blood. Conducted health programs for students, engaging 763 participants, and held sessions on Personal Health & Hygiene Awareness, addressing critical health issues and promoting overall well-being. Women's Health: Provided health services to more than 2610 women benefitted through Menstrual & Mental Health Awareness Drive. Dialysis Support: During this year, 2 patients were supported for regular dialysis with 124Times which added day in their Life. Medical Supports: 1007 beneficiary in 35 village. International year of Millets – 2023: To promote millet culture and raise awareness about its benefits in Mundra, we organized a Millet Competition across nine villages. Over 715 women took part in the competition, while 2200 benefited from awareness sessions. Through this



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							 initiative, 300 indigenous millet recipes were showcased, highlighting the potential for sustainable and nutritious dishes in our daily diets. Ayushman card facilitation: Ayushman card issued to 5584 for 25 village of 686.50 Cr. health insurance. Preventive health Campaign the Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene initiatives and Millet consumption for healthy body. Sample Survey Report 2023-24 55% Never heard about Menstrual hygiene. 60% Are using cloths on regular basis. 36% Had never used sanitary pads. 68% Had no information about UTI. 30% Never used millets in their diet. 60% Never heard about millets or it's benefits. 2222 - Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. For Preventive health care General and multispecialty camps Pediatric camp, General Health camps in 7 villages and Super specialist



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							camp which benefitted more than 4690 patients of Mundra & Mandvi Taluka. • Cattle Health Camp: Adani Foundation and Animal Husbandry department Veterinary Jointly organizing cattle health Awareness and vaccination programs in 24 Villages of our periphery villages with total 18903 cattle benefitted, and 18870 cattle vaccinated. Total 982 cattle owners benefited for Preventive Health Care & Fodder Support Program • Present Hospital facilities are adequate to avail the medical treatment for Mundra region considering present development. Other Occupational Health centres, primary health centres and community health centres are also in place in Mundra to take care the people residing in Mundra. Adani group is also operating high quality health care services to the people of Kutch at G. K. General Hospital, Bhuj having 750 beds facilities on public private partnership (PPP) model, which is 60 km far from Mundra. APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the future development at APSEZ.
	Due to rapid economic development in the region,		APSEZ has been giving preferences to people from	APSEZ is			Current FY 2023-24 fishermen livelihood activities development activities: Overall Persistent efforts for Fisherman
	several		Gujarat for	committed to			development:



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10.	employment opportunities can be generated to the local people. When the area is fully developed by the end of 2030, the working population of the Mundra taluk would increase from current level of 55,000 to as high as 4,00,000, which will be 45% of the total envisaged population in Mundra Taluk by the end of 2030.		providing employment opportunities based on eligibility and skills. In Mundra, special programmes have been conducted by Adani Foundation to enhance the employability of youth from fisherfolk communities. Based on the need assessment results, several livelihood options have been introduced by the Adani Skill Development Centre, Mundra. In	provide support for fishermen livelihood activities and has submitted a detailed 5 years plan to MoEF&CC with a total budget of Rs.13.5 Cr.	APSEZ	Short Term	 598 Education Kit Support 273 Fisherman Shelter Support 1,247 Vehicle transportation support of Mundra and Mandvi taluka 106 Cycle Support to high school going students. 613 Scholarship Support 419 Youth Employment 195 Linkages with Fisheries Scheme 3,534 Ramatotsav Community Engagement 56,523 Man days Mangroves Plantation Vehicle Transportation Facilities: 146 Students supported Mundra Taluka and 58 Students supported at Mandvi Taluka during the compliance period. Education Kits Support: Education Kits including notebooks, guides, and bags, to fisherfolk students studying in 9th to 12th standard to enhance their learning experience (57 nos. students benefitted). Educational Awareness Sessions: Through targeted awareness sessions in Fisherfolk Vasahats, we promote the transformative power of education, with a particular focus on advancing girl-child education. (487 Students motivated for high school Education). Scholarship Support: Provide scholarship support to 31 deserving students, covering their higher



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			these centres, youth can join and get vocational training for a number of technical and non-technical skills. An industrial Training Institute is set up at APSEZ, Mundra, to enhance the skill levels of the local youth to maximum possible extent.				secondary school fees. Emphasizing gender equality, we offer 100% fee support to female candidates and 80% to male candidates. • Cycle Support: Overcoming transportation obstacles, our cycle support initiative enables six 9th standard fisherfolk students from Juna Bandar to continue their education with ease. • Assisting During Emergencies: Fisherfolk Home were significantly damaged by the Biporjoy Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery. (336 Fisherfolk house benefited) • Fostering Youth Employment: At APSEZ Mundra, our mission revolves around providing sustainable employment opportunities for the local fishing community. We serve as a bridge between industries and Fisherfolk youth, facilitating job placements to enhance livelihoods. This year, we have successfully engaged 115+ Fisherfolk youth, paving the way for a brighter future. (115+ Fisherfolk youth employed) • Strengthening Fisherfolk women: Through comprehensive health and hygiene initiatives, we empower Fisherfolk women. Our programs include family planning resources, menstrual hygiene workshops, nutrition advocacy, and health awareness sessions covering vaccinations, clean water access, and mental health support. (449 Women benefited)



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							 Potable Water Distribution: Providing potable water facilities to 9 Fisherfolk Vasahats daily, either through water tankers or by establishing linkages with the nearest Gram Panchayat. This initiative benefits over 5000 Fisherfolk, significantly improving their health and productivity. (5000+ Population benefited). Cement Roof Sheet Support: fisherfolk Home were significantly damaged by the Bipor Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery." Potable water Distribution: Providing access of potable Drinking water Facilities to Nine sherfolk vasahat on Daily bases, either By Water tanker or Linkage with Nearest Gram panchayat. More than 5000 Fisherfolk Population are getting benefit which impact on their health and efficiency. Water distribution to Luni & Bavadi Bandar Fishfolk Vasahat: 35000 KL water for 936 people. Sagar Mitra Card: Introduced the 'Sagar Mitra Card' to simplify access for Fisherfolk to specific fishing routes within APSEZ. This digital card is connected to a digital punching machine located at designated entry points. Initially, we have implemented this system for Navinal



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							Fisherfolk, and so far, we have issued a total of 57 Sagar Mitra Cards." Government scheme Awareness session was held in association with Fisheries department Bhuj to facilitate pagadiya fishermen by providing fishing kits to seven Fishermen. The coordination was made by Adani Foundation to process application. More than 35% of enrolled students in AVMB come from the Fisherfolk community. Youth Employment: Our main objective is to offer sustainable employment opportunities to the local fishing community in APSEZ Mundra. We bridge the gap between industries and Fisherfolk youth by facilitating job placements. Currently, we have successfully engaged a total of 12 Fisherfolk youth in this endeavor. Vidya Sahay Yojana – Scholarship Support: All basic education supportive facilities have been created to promote education in fisher folk community. We are deeply committed to empowering the future of fisherfolk communities through education. To this end, we provide scholarship support to 30 deserving students, covering their actual school fees. In our unwavering commitment to promoting gender equality and advancing girl child education, we extend 100% fee support to female candidates and 80% to male candidates."



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							 During FY2023-24 Approx. INR 122.32 lakh were spent for Fisherfolk Amenities work in different core areas Till FY 2023-24, Adani Foundation has done total expenditure of INR 1460.51 lakh for Fisherfolk Amenities work in different core areas. APSEZ is carrying out various initiatives specific to the Fisherfolk community which includes: Vidya Deep Yojana Vidya Sahay Yojana – Scholarship Support Adani Vidya Mandir Fisherman Approach in SEZ Machhimar Arogya Yojana Machhimar Kaushalya Vardhan Yojana Machhimar Sadhan Sahay Yojana Machhimar Shudhh Jal Yojana Machhimar Shudhh Jal Yojana Sughad Yojana Machhimar Suraksha Yojana Machhimar Svackhata Yojana Machhimar Ajivika Uparjan Yojana Bandar Svachhata Yojana These initiatives are planned for the period 2016 – 2021 with a committed expense of INR 13.5 Cr as submitted earlier in detail in the report namely "Silent Transformation of Fisher folk at Mundra",



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							Till, FY 2023-24 approx. 14.61 Cr. INR, has already been spent in support for fishermen livelihood activities. Further, details regarding the expenditure incurred against the commitment are attached as Annexure – 10.

Annexure – 7



Compliance Report of CIA Study Environment Management Plan

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1	Land Use Chang	ge <u></u>					
1.1	It is predicted that the built up land in the rural areas would increase by an order 50% from the baseline 2015. New settlements near the SEZ area might create slums.	Level - 1	APSEZ has developed two townships (Shantivan and Samudra) presently accommodati ng 1668 households. Necessary permissions from concerned authorities were already obtained for the	The existing townships will be expanded to accommodate about 4 lakh people when the APSEZ is fully developed.	APSEZ	As and when Required	APSEZ has developed two townships (Shantivan and Samudra) accommodating 2302 households and associated infrastructure facilities. Accommodation is made available for all interested employees working within Adani group & SEZ industries. Out of which 95.57% Occupancies are accommodated within the townships and rest are available for employees working within APSEZ. At present 60 nos. of industries (processing & non-processing) are present within the SEZ (46 nos. are in operation). Township facilities are also made by some of SEZ industries within Mundra town for their employees with basic infrastructure facilities and requirements.
	Unorganized urban development leading to poor		development of townships and Associated infrastructure				Most of the employees working in SEZ industries are residing in Mundra township having all basic requirements and associated facilities. The existing social infrastructure facilities are
	sanitation and proliferation		facilities.				adequate for present development at APSEZ. The existing townships with associated facilities will be



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	of vectors and disease.						expanded as per requirement. APSEZ has also been granted permission for receiving domestic sewage @ 2.5 MLD from Mundra village (which was earlier discharged into open area within Mundra region) into wastewater treatment plant for treatment and disposal. APSEZ has already started receiving of domestic sewage from Mundra, which abates the poor sanitation and unhygienic condition within Mundra region. Total project cost for laying domestic sewage underground pipeline with other associated facilities from Mundra to APSEZ is 362 Lacs.
1.2	Once the project is fully developed, due to increase in built up land in the APSEZ area, there will be an increase in the storm water runoff from the facility.	Level-1	The study area experiences scanty rainfall less than 400 mm/year. Considering the natural gradient, ASPEZ have designed and implemented storm water	Technical feasibility study can be carried out to explore the possibility of developing storm water collection ponds to utilize maximum possible storm water runoff for dust suppression in the coal yard areas during non-rainy days.	APSEZ	Technical Study - one time, Implementation - Continual process	Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies, At present all existing coal yards are designed with drain, for collection of water during water sprinkling and rainfall, which is carried away to dump pond. Supernatant water from dump pond is being collected and used for dust suppression activities or after sedimentation, discharged to sea. Details of drain and dump pond has been submitted in along with EC compliance report (Oct 19 to March 20). Analysis of said water discharging into sea during monsoon season is being carried out (twice in a year during monsoon) through NABL / MoEF&CC accredited laboratory. Analysis report of the same shows there is



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			drains in the existing facility to meet the peak daily rainfall of 440 mm/hr. Hence flooding of water in the neighboring areas is not envisaged.				no any contamination. The report of the same were submitted during the last compliance period Apr'23 to Sep'23. During compliance period FY 2023-24 total recorded rain fall was 844 mm observed, which was much less than the design capacity of existing storm water drainage system. So our existing storm water management facility is adequate to handle the storm water runoff from the area. Hence flooding of water in the neighboring areas is not envisaged.
			As per the directions given in the environment al clearance issued for the proposed Multi-Product SEZ and CRZ clearance for Desalination, sea water intake, outfall	The channel depth in all the natural streams shall be maintained to accommodate peak flood flow during the monsoon and periodical desilting activities in the natural steams passing through the APSEZ area	APSEZ, District Administratio n* and Irrigation department	As and When Required	Presently there is no Desalination plant, sea water intake and outfall facility developed as part of EC & CRZ clearance of Multiproduct SEZ. The project will be designed and implemented as per requirement without disturbing the natural flow of rainwater in all the seasonal streams.



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1. 3	Due to conservation and protection of mangroves in the designated conservation area, it has been predicted	Positive Impact with ecologi cal benefits	facility and pipeline project, the master plan of the project was designed and being implemented without disturbing the natural flow of rainwater in all the seasonal streams. In addition to conservation of the identified 1254 ha mangrove areas around Mundra port and SEZ, APSEZ has taken up large scale	APSEZ will continue mangrove afforestation as per the commitment made with concerned regulatory authority	APSEZ	Short Term	APSEZ has carried out mangrove afforestation in 4140 ha. area across the coast of Gujarat till date. Total expenditure for the same till date is INR 1592.8 lakh. No further mangrove afforestation is pending w.r.t. commitment made with concerned regulatory authority for APSEZ, Mundra project. As per study conducted by NCSCM, Chennai in 2017, mangrove cover in and around APSEZ, Mundra has increased from 2094 Ha to 2340 ha (as compared between 2011 to 2017). The analysis has shown an overall growth of 246 ha. The cost for said study was



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	that the current mangrove footprint area would marginally increase in next 15 years due to natural growth. This will enhance the overall biodiversity in the local coastal ecosystem.		mangrove afforestation activities in an area of more than 2800 ha at various locations across the coast of Gujarat state in consultation with various organizations				Last on to betw 2019 which reveal betw Analythere of grow As a man	chat there is an veen March 2017 with an extent of with an extent of the sabout 10.94 als that the mang ks remained undisce, there is an oks in and around veen 2011 and 2019 yes of data between a part of GCZMA	ween categories indicated that in dense mangroves along with tered into sparse, that shows the in a progressive direction. recommendations and NCSCM ion action plan, APSEZ has



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							1.	Mangrove mapping and monitoring in and around APSEZ	 APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%. This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of



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								mangroves in a progressive direction. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. According to GUIDE Mangrove monitoring study report November 2023 (report was submitted during the last compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%)



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							during the total mange 2019 was has increa during the second durin	erall increase in cover area in em in and around in 2011 (2094 Ha) (23 Ha) is 629 Ha of the said study and control of Mangrove and monitoring



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									2011 to 2016-17	2340	24 6	11.7 5%
									2017 to 2019 till March	2596	25 6	10.9 4%
									2019 to 2021 till March	2723	12 7	4.8 9
									Total	2723	62 9	
							2.	Tidəl	To compline recomment mangrove 2 years, process to for Monit Distribution around AF to 2023.	ndations monitori resently a corry ou coring of on of cre PSEZ area	regaing at APSEZ the Man	every every Z is in study grove n and 2021
							2.	observation in creeks in and around APSEZ	observa similar Baradim and Kha	tions at to 2017 lata, Nav ari creeks e of NCS	: loca ' in inal, E s unde	ations Kotdi, Bocha



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							3.	Removal of Algal and Prosopis growth from mangrove areas	 The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. The cost of the said activity was INR 1.0 Lacs. Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 during the FY 2023-24. The report of algal removal is attached as Annexure - 3.
							4.	Awareness of mangroves importance in surrounding communities	Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattels



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								/ 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg. • Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land development with strong Community Contribution and Mobilization. • Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas.



S. Identified S. I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
						APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23. Since PhD scholars and students frequently visit this area for study, we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist. Refer CSR report attached as Annexure – 2.



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							To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked. After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work is 23.60 Lacs (Including Taxes), which was paid by APSEZ. GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted during the last EC compliance report submission Apr'23 to Sep'23 According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradi Mata, Navinal, Bocha and Khari creeks and also



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							in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019.
							According to GUIDE Mangrove monitoring study report November 2023 (Report was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi Mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total



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							mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023. Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE, These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem.



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1. 4	Developmen t activities along the coast might cause certain changes in hydrodynamic characterist ics along the shoreline. Shoreline of any area also can be influenced by storm surges and other natural processes.		Detailed hydro- dynamic modelling and shoreline change prediction for a fully developed APSEZ facility has been studied. The study reveals that the erosion and accretion in the study area at the end of 15th year will be within the designated criteria of ±	It is recommended to map the coastal morphology (Shoreline) at least once in three years	APSEZ	Continual Process	Shore line change aspect has been studied in detail as part of following two studies; • Bathymetry & Topography study, preparation of plan for protection of creeks/ mangrove area including buffer zone, mapping of co-ordinates, running length, HTL, CRZ boundary. • A Regional Impact Assessment study to identify impacts of all the existing as well as proposed project activities in Mundra region. As per the outcome of these studies, no erosion is observed on the coast of the project area. As part of the Regional Impact Assessment study, the possible changes in shoreline that may occur due to the proposed developments in 10 km area on either side of the waterfront development project have been predicted. It has been inferred from the modelling study that the shift in the shoreline will be less than 0.5 m/year, which reconfirms that the APSEZ facility would pose insignificant impact on the Mundra shoreline. Accretion is observed at South port and at West port due to approved reclamation activities. Based on the study outcome, it is recommended to map the coastal morphology (shoreline change) at least once in three years.



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			0.5 m/year. which reconfirms that the waterfront development activities of APSEZ would pose insignificant impact on the Mundra shoreline.				APSEZ has already awarded work to the agency namely M/s. Gujarat Institute of Desert Ecology, Bhuj for carrying out Shoreline Change Assessment Study for Mundra region vide P.O. No. 4802013270 dated 30.03.2022. The cost of said study was INR 17.39 Lacs. The said study is under progress. Shoreline change study was carried out by M/s. Gujarat Institute of Desert Ecology, Bhuj in 2022 as a part of the Environmental Management Plan (EMP) compliance with the CIA study. The cost of said study was INR 17.39 Lacs. In the present study, the rate of shoreline changes statistics on a time series of multiple shoreline positions of a totally 43 km coastline stretches (16 km on the west side and 27 km on the east side of Adani main port) on either side of Adani Ports and Special Economic Zone Ltd (APSEZL) has been taken into account for the calculation by using satellite images. As a part of the NGT direction, the shoreline change analysis has been carried out for the years 2015-2022 to study the immediate changes after the commissioning of the port and initiation of the activities (September 2015) for short-term variation for the year 2015-2022 using EPR method has been carried out.



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							interval t		of shoreline char from 2015 to le.	
							Period	Name of the block	Average Shoreline Change(M/Year)	Shoreline
										Maximum Accretion
							2015- 2022	West Port	-11.43 -26.60	39.86 191.32
							GUIDE w complianc Shoreline MS, Chenry part of Wa EIA study. To estimal approved shoreline using the 2018. In othe shore	as submitted e report for the change study what (NABET accepterfront Development Developme	Assessment Studialong with size period Oct'22 to was carried out by credited consultar opment Projectof the said study and the said study are change due to velopment plan, sment has been ery for a period only major errors in ellite data for streed for 2008,	y report of x monthly Mar'23. M/s. Cholant) also as a Expansion re as below. the earlier a historical undertaken of 2008 to estimating imilar tidal



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							2018. AMBUR Methodology was used to study the historical analysis. 10 km radius stretch of shoreline on either side of the APSEZ project boundary has been considered for assessing the historical shoreline change scenario. The baseline shoreline change assessment depicts the influence of both natural causes and also possible changes in the shore due to various development activities in the study area during the designated period. For the purpose of this study, shoreline on left side of APSEZ is termed as West Side Shoreline and that of the right side as East Side Shoreline for ease of recognition. The maximum accretion and erosion rate of the west side shoreline over a period of 10 years during the year 2008 – 2018 are observed to be 4.78 m/yr and 1.93 m/yr respectively. The maximum accretion and erosion rate of the east side shoreline over a period of 10 years during the year 2008 – 2018 are observed to be 05 m/yr and 0.82 m/yr respectively.
2	Regional Traffic			Additional	ADCE7	Ac 20d Wh	Decembly . F1.70/ of the held CF7 is develored Basel
2. 1	The projected traffic data	Level-1	As per the master plan of APSEZ,	Additional road as per master plan will be built	APSEZ	As and When Required	Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies,



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	as per the EIA Report of Multi-Product Special Economic Zone, the peak vehicular traffic from the port and SEZ operations (including supporting facilities and colony) could be in the order of 18,300 and 10,400 vehicles per day respectively . There could		eight artillery roads will be connected to either state highway or national highway for evacuating the goods from APSEZ. None of these roads are passing through settlements, thereby avoiding traffic Congestions in the respective villages. The carrying capacity of the eight artillery roads connecting	in future based on the overall progress of the project. Currently about 25% of cargo from APSEZ is transported by Rail and the same will be enhanced to 40% when the facility is fully developed in future. This will further reduce the traffic volumes on the regional road network.			Existing road/rail/conveyer infrastructure facilities are adequate to evacuate the existing cargo. Further, APSEZ's cargo evacuation through rail / conveyer / pipeline has ~23.87%,Additional road facilities will be built as per master plan considering future development. The facilities for transportation of cargo other than road will be enhanced considering future development, which will reduce the traffic volumes on the regional road Network.



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	be a possible increase in traffic congestions on village-highway intersection s and road accidents.		APSEZ is estimated to be about 16,000 PCU/hr as against the envisaged peak traffic volume of 4,500 PCU/hr. Out of eight artillery roads considered in APSEZ master plan, seven roads were already developed and functional. APSEZ has been imparting Driver	APSEZ can undertake technical feasibility of	APSEZ & GSRDC*	Long Term	APSEZ is being imparting the regular in-house training awareness program in different mode i.e., classroom, on-job training, virtual platform & Assessment by internal & external trainer to all drivers and employees



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			Programs to all their contractors to enhance awareness on road safety.	Intelligent Transport System (ITS) for the freight carriers associated with their development activities.			 ✓ Basic induction Training for drivers ✓ ITV Driver Training ✓ ITV Driver Induction for Supervisor ✓ Defensive Driving for LMV & HMV ✓ Defensive Driving & BBS ✓ Driver Assessment ✓ Road accident & rescue ✓ Traffic Management & Road Signage ✓ Driving safety training ✓ RORO Driver training ✓ Road Safety ✓ Defensive Driving & Emergency Action Plan ✓ Drivers Responsibilities & Safe driving ✓ Emergency Rescue (Vehicle) Training Approx. 7530 Participants (On roll and contractual manpower) were benefitted from above trainings in compliance period Oct'23 to Mar'24. The same will be continued in future also. APSEZ has also implemented the Remote traffic management system (RTMS) to manage the traffic movements and capturing the violations to further improve the system. Following steps were taken by APSEZ to reduce the accidents.



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							 ✓ Handling and escorting of the ODC for ensuring the smooth movement on the roads. ✓ Traffic Awareness programs for the drivers and regular briefing of the drivers in the parking areas. ✓ Incident handling and root cause analysis for taking necessary action in order to avoid such incidents. ✓ BAC checks for the drivers in order to identify the intoxicated drivers and necessary action is being taken against them. ✓ Water spray drive at gates are being conducted on regular basis during night hours to avoid doziness by the driver while driving. ✓ RTMS devices are being installed at 08 critical locations in order to capture speed violations and enforcing road safety regulations. ✓ Display of traffic signages and lane markings on road in coordination with the Civil team for ensuring road safety rules are being followed by the road users. ✓ We have approx. 100+ cameras which are being utilized for monitoring of traffic movement through CCTV and timely response in order to avoid any congestion and during traffic incidents. ✓ Regular traffic checks by Traffic Marshalls in order to ensure road safety rules (Wearing seat belt/Wearing helmet/Carrying driving license/Speed checks/Documents) is being followed by the drivers.



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							 ✓ Installation of Road furniture's (Cones/Water filled barriers/Cats eye/Spring Posts/Jersey Barriers) for lane segregation, Channelizing the traffic, at Junctions and indicating Caution for the road users. ✓ In case on any Vehicle found breakdown in main roads, we arrange the security crane / lifting machines to remove /relocated the vehicle. Which help for smooth passage to other vehicles. ✓ Ensuring Drivers must wear near necessary PPEs, for that we have arranged a PPE's Stall at APMS parking area (issued on chargeable basis). ✓ Night Patrolling and PA announcement by Traffic DSO to manage traffic condition. ✓ Safety briefing via PA system at Security Gate.
3	Water resource	s Manageme	ent and sewage tr	eatment & disposal P	lan	•	
3.	For a fully developed APSEZ facility, water demand will be in the order of 4,30,000 m3/day (430 MLD). APSEZ will be sourcing	No- Impact	APSEZ is meeting the current water demand through Narmada water supply scheme and 47 MLD captive desalination plant at site.	As per the master plan and permissions granted under EC, APSEZ will be developing progressively 4,50,000 m3/day (450 MLD) of desalination plants to meet the future demand. Hence	APSE Z	As and When Required	Presently there are two fresh water sources available with APSEZ. Desalination Plant – 47 MLD Narmada water through GWIL – 9 MLD (sanctioned capacity). Current water demand for APSEZ along with SEZ industries including Adani Power Plant is an avg. of 31.49 MLD. So presently, these sources are adequate to fulfill the current freshwater requirement of entire APSEZ



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	majority of the water from the captive desalination plants, which will be developed in progressive manner.		Necessary water allocation from concerned authorities was obtained and the same will be renewed from time to time as per the directions of state government.	stress on regional water resources due to these developmental projects will be less significant.			including member units. The desalination plant of additional capacities will be installed on modular basis considering future requirement of APSEZ.
3.2	Existing water demand in the Mundra taluk is estimated as 8500 m3/day (@55 lpcd) and the potable and sanitation	Level-2	Adani Foundation has been contributing to various watershed development projects in the Mundra region to enhance ground	Adani Foundation is planning to implement the various water resource conservation programs in next ten years under various schemes.	APSEZ and CGWB*	Long Term	Water needs of APSEZ is being met through existing Desalination Plant of APSEZ and GWIL which may be further enhanced on modular basis. At present Ground water is not utilized for any activities within APSEZ. However various works are being carried out by Adani Foundation continuously under Water Conservation Work to achieve water security in Mundra region by Adani Foundation. Following works are carried out as a part of water conservation work since April – 2018. Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well



S. Identified S. I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
water needs would increase to 37,000 m3/day (@125 lpcd) in future when the area is fully grown into larger municipality due to induced economic growth. Water demand of the local communitie s is met through Narmada water supply system to some extent, but		water resources in the area. Adani Foundation has contributed about Rs. 300 Lakhs so far for the development of 18 check dams.				Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up. To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch project "Sanrakshan" in coordination with GUIDE and Sahjeevan. Since, 10 years considerable Water Conservation Work carried out in Mundra Taluka. Due to satisfactory rain in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures. WORK COMPLETED: Below tabulated Water Conservation Projects completed during Compliance period: Water Conservation Projects: Swajal Project: Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district. Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological



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	largely											security plan has
	depending							been prepa	агео т	or the	e Seven villages	•
	on the ground water in the						Blo Na		Wate nserva	tion	Total no. of Structure	Total Capacity Created (CUM)
	study area.						Mun		eck Da		23	6,07,332.80
	Mundra							Po	nd		66	1,89,121.08
	block is								epenir	ng	0.75	0750
	reported to								WHS charge		275 209	2750
	be a safe								rewell	=	209	
	ground block as on							Pe	rcolati	on	24	-
	date. Due to influx of						l ——	ier Comple	ted A		ies/Projects:	
	people and						Sr. No.	Project	U	nit C	Outcome	Impact
	rapid						INO.					
	urbanizatio						1	Check da	am 1	V	Water Storage	60 + farmer's
	n due to the							Restrengtl		C	Capacity	120+Acre Area of
	economic developmen							n ing-Na	na			Agri land can be
	t, there							Kapaya		4	18000 Cum	Irrigated
	could be						2	Recharge	21		Reduce	150+ farmer's
	some stress							Borewell				260+ Acre Area
	on the											of Agri land for
	ground									l'		Irrigated
	water									v	vater run	
	resources in											
	future.											



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							Pipe Culvert at runoff into Gramers' 120+Acr checkdamat Bhujpur seaside. Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. Ground recharge activities (pond deepening work for 66 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar.



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							 Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. With the objective of to preserve the rainwater to reduce the impact of salinity and recharge the ground water (the main source of water) to facilitate the Agricultural activities as well as for drinking water. Adani foundation has spent approx. INR 8515.06 lakhs from April – 2018 to March– 2024 for CSR activities which also includes water conservation projects as mentioned above.
3.	It is estimated that about 60,000 m3/day (60 MLD) of sewage will be generated from the APSEZ facility when the	No Impact	Seven sewage treatment plants with an aggregate capacity of 3.1 MLD have already built at APSEZ. Treated sewage is utilized for greenbelt	APSEZ is permitted to develop decentralized sewage treatment plants of total 62 MLD capacities. Existing sewage treatment facilities will be augmented progressively	APSEZ	As and When Required	Current installed capacity of wastewater treatment plants is 6.255 MLD (ETP, STPs & CETP) for treatment of effluent & sewage generated at various locations of APSEZ excluding wastewater treatment plants installed within induvial member units. Out of 46 only 4 operational industries within the SEZ are sending their partially treated industrial as well as domestic effluent to the CETP confirming to CETP inlet norms for further treatment and final disposal. Other SEZ industries have their own STPs / ETPs for treatment of wastewater generated from their industrial operation and discharging the treated water on land for horticulture purpose within their premises



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	project is fully developed.		development and sewage is not discharged into either seasonal natural streams or marine environment.	based on the development at APSEZ in future. Similar to existing practices, treated sewage will be utilized for greenbelt development.			as per specific permission granted by SPCB. APSEZ also granted permission to treat 2.5 MLD of sewage generated from Mundra village through CETP and STP. Presently avg. 2.26 MLD of wastewater (in to ETP, STPs & CETP) is treated and being utilized on land for horticulture purpose within APSEZ premises during Oct'23 to Mar'24. Existing wastewater treatment plants are adequate to treat and handle the total effluent / sewage load considering current development. Existing wastewater treatment facilities will be augmented, or new plants will be developed on modular basis considering future requirement.
4	Air quality man	agement Pla		I au	1.0057		
4.	Although all the regulated activities in the study area will be adopting promulgate d emission norms, total	Level-2	APSEZ and other thermal power plants have obtained valid consent to operate and have been	All existing and new industrial establishments will obtain requisite consents from GPCB and adhere to the stipulated emission norms regulations and	APSEZ And Other Industries	Continual Process	APSEZ has been granted requisite permissions from the concerned authorities with stipulated norms for air emission (flue gas as well as ambient air). Ambient Air Quality monitoring is being carried out by NABL accredited and MoEF&CC authorized agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi for APL as per NAAQ standards, 2009. Stack emission monitoring is also being carried out on regular basis. Reports of the same are being submitted



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	air emission mass discharge from the study area would increase.		operating the facilities as per the emission norms stipulated in respective consent orders. APSEZ and other two power plants are	guidelines issued by authorities from time to time.			Adani power and air qual Directive an power plant The AAQM Mar'24) are a Locations: 18 villages) Frequency: 1	r plant hality moning submits of CGPL summary as below.	as instal toring ir tting th is outsid for las	led con nstrume e repor e APSEZ	tinuous onts as pots also. Z area. onths (O	er CPCB Another oct'23 to
			monitoring the ambient				Parameter	Unit	Min	Max	Average	Perm. Limit ^{\$}
			air quality on regular				PM ₁₀	µg/m³	40.8 0	87.32	74.45	100
			intervals as				PM _{2.5}	µg/m³	14.49	43.22	30.97	60
			per GPCB/CPCB				SO ₂	µg/m³	8.35	38.91	22.12	80
			guidelines				NO ₂	µg/m³	11.21	44.25	26.73	80
			and the data is analyzed and				Values	recorded			AQ standa ipulated s	
			presented to GPCB on monthly basis. Both				Approx. INF environment 2023-24, w monitoring f	al monit: hich also	coring a	ctivities Ies aml	during dient air	the FY



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			the thermal power plants located within the study area have installed continuous emission and air quality monitoring instruments as per CPCB directive.				Other industries located within the SEZ have obtained requisite permissions from the competent authorities for their respective plant and they also carried out environmental monitoring within their premises to comply with the permission granted. The same has been ensured by APSEZ as well as SPCB during their regular visits. APSEZ carries out regular visits/inspections of member industries within SEZ and last visit was conducted during March, 2024 for EMS & compliance verification. During compliance verification, it was verified that monitoring of air emission was well within the permissible standards based on analysis reports. Same will be continued in future also. The monitoring reports of industries within SEZ are also being submitted to the regulatory authorities as a
				A common air quality management committee may be framed under the guidance of the State Pollution Control	APSEZ and Other Industries, Stakeholders, District Administratio n and GPCB*	Long Term And Continual	part of half yearly Compliance report of EC for Multi-Product SEZ. APSEZ will co-operate and comply with the directions from concerned regulatory authorities for air quality management within APSEZ area. However, at present, APSEZ has formed Internal Environment Monitoring Committee, involving officials from APSEZ, Adani Power Limited and other SEZ member units with following role and responsibilities:



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				Board and district administration to manage regional level emission inventory data that can help to manage regional level air quality management goals.			 Identification of sources of air & noise emission and its dispersion in surrounding villages Remedial measures to eliminate, control, reduce or capture air & noise emission. Identify available resource to abate the air and noise emission. Required additional resources for control of air and noise emission. Drinking water and its testing of all the available fresh water sources in surrounding villages Identify any surrounding villages affected by organization's improper waste disposal mechanism. Last committee meeting was conducted on dated 19/04/2024 and below was the point of discussion for way forward. Brief introduction about the Environment Management Plan (EMP) All members conveyed his environment management practices, issue & suggestions. Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. Discussed about the proper management of the canteen waste. Discussed about the cleaning of outside of the SEZ units.



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							 Discussed about the management of rain water & proper cleaning of the common storm water drainage system. Discussed about proper segregation & disposal of solid waste material. Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor. APSEZ and all the industries within SEZ are complying to NAAQS and same is being ensured by APSEZ. The monitoring reports of industries within SEZ are being submitted to the regulatory authorities as part of half yearly Compliance report of EC for Multi-Product SEZ.
4. 2	Release of particulate emissions from handling and storage of coal at the port and power plants would influence PM10 and	Health Impact	APSEZ has been implementin g the following management plan to control emissions as per the applicable regulations and similar	All industries located in the APSEZ shall adhere to the emissions norms and minimum stack height guidelines issued by CPCB and consent to operate issued by Gujarat	APSEZ and Other Industries	Continual Process	 Following safeguard measures are taken by APSEZ for abatement of dust emissions. Adequate stack heights to the Boilers, D.G. Sets, TFHs & HWGs for proper dispersion of pollutants within APSEZ Using of liquid & Gaseous fuels instead of solid fuels in Boilers, Thermic fluid heaters and hot water generators. Regular sprinkling on road and other open area Regular cleaning of roads Dry fog Dust Suppression System (DSS) in hopper,



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	PM2.5 concentrati on in the background air. This could pose some health impacts such as asthma and COPD etc. among the local communitie s.		practices will be adopted in future: Entire bulk material handling facilities are mechanized. Regular water sprinkling on road and other open areas, regular cleaning of roads, dry fog dust suppression systems (DSS) in hoppers, transfer towers and conveyor belts, use of water	Pollution Control Board from time to time.			transfer towers and conveyor belts Use of water mist canon Closed type conveyor belts Regular sprinkling on coal heaps Covering other types of dry bulk cargo heaps Installation of wind breaking wall Development of greenbelt along the periphery of the storage yards/back up area Mechanized handling system for coal and other dry bulk cargo Wagon loading and truck loading through closed silo Adequate air pollution control measures like ESPs, FGDs, Bag Filters, etc. and adequate stack heights provisions are implemented within the thermal power plant. The stack monitoring summary for last six months (Oct'23 to Mar'24) are as below. Total Nos. of Stacks: 23 Nos. Frequency: Monthly / Half Yearly Parameter Unit GPCB Min Max Avrg. Limit PM mg/ Nm³ 150 16.27 27.23 21.61
			canon,				SO ₂ Ppm 100 6.13 15.49 8.96



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			covered conveyor belts, regular sprinkling on coal heaps,				NO _x ppm 50 16.92 32.62 23.06 Values recorded confirms to the stipulated standards. Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra. All other industries located within SEZ are adhere to provide adequate stack height and pollution control measures for proper dispersion of pollutants as per respective permissions granted by the board. The same is being inspected and ensured by APSEZ as well as SPCB officials on regular basis.
			covering of other types of dry bulk cargo heaps by protective materials, installation of wind breaking wall, development of greenbelt along the	An internal Coal Dust Management Working Group shall be formed by APSEZ to effectively coordinate the approach to coal dust management and	APSEZ and Other Industries, Concerned Stake holders, District Administratio n*	Long Term	As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, with specific role and responsibilities as defined above. The dry cargo is being handled by mechanized system and transported by covered conveyer system, trucks and rail wagons. Wind breaking wall is provided around the coal storage yards of APSEZ as well as Adani Power Plant. Adequate air pollution control measures like ESPs, FGDs, Bag Filters, etc. and adequate stack heights



S. envi No. I and impa the deve	vironmenta Im	npact & malagnitud plants of the plants of t	environment nanagement plans adopted or being dopted by APSEZ as per permits, elearances, applicable egulations and guidelines	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
			periphery of the storage yards/back up area and mechanized handling system for coal and other dry bulk cargo and Wagon loading and truck loading through closed silo. Both thermal power plants in the study area have installed electrostatic precipitators on the boilers and are meeting the emission norms as per the	monitoring			provisions within the thermal power plant for proper dispersion of pollutants. Green belt / plantation is provided around the periphery of dry cargo storage area and regular water sprinkling is also being done to abate the dust emission from coal hips. Last committee meeting was conducted on dated 19/04/2024 and below were the points of discussion for way forward. • Brief introduction about the Environment Management Plan (EMP) • All members conveyed his environment management practices, issue & suggestions. • Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. • Discussed about the proper management of the canteen waste. • Discussed about the cleaning of outside of the SEZ units. • Discussed about the management of rain water & proper cleaning of the common storm water drainage system. • Discussed about proper segregation & disposal of solid waste material.



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			respective ECs granted. Due to installation of tall stacks as per CPCB guidelines and EC conditions, the relative air pollution impacts due to release of emissions from two power plants is insignificant.				 Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor.
	Ships are one of the significant sources of SO2 and NOX		A Standard Operating	The current global limit for Sulphur content of ships fuel oil is 3.5 % m/m (mass	APSEZ		The ships coming to the APSEZ is complying with MARPOL and other shipping rules and regulations. APSEZ has already started providing shore power supply to the tugs (11 Nos.), dredgers (2 Nos.) and barges (1 No.). The feasibility of shore power will be
4. 3	emissions in the study area. Marine diesel	Level-2	Procedure (SOP) has been developed to	by mass). According to MARPOL, the new global cap	and Ship Owners	Long Term	explored and implemented on large scale for the visiting vessels to reduce idling stage ship emissions.



_	Identified	Type of	Environment	Additional Risk	Responsible	Timeframe for	Compliance
S.	environmenta	Impact &	management	Mitigation	agency	implementation	
No.	I and social impacts for	Magnitud e1	plans adopted or being	Measures/ESMP			
	the fully	e i	adopted by				
	developed		APSEZ as per				
	scenario		permits,				
	(year 2030)		clearances,				
			applicable				
			regulations				
			and guidelines etc.				
	engines on		be included	on sulphur in the			
	the ships		as a part of	marine vessel			
	often utilize		APSEZ	fuels will be			
	fuel oils that		environment	0.50% m/m by			
	might		management	the 1st January			
	contain		plan to verify	2025.			
	higher		that all ships	APSEZ should			
	sulphur		anchored at	explore the			
	content. As per the		the port are	possibility of			
	per the internationa		adopting the MARPOL4	providing shore			
	l best		regulations.	power to the			
	practices,		regulations.	ships at the port to reduce idling			
	these			stage ship			
	marine			emissions.			
	diesel			C11113310113.			
	engines are						
	designed to						
	meet						
	MARPOL						
	regulations						
	with NOX emissions						
	less than						
	14.4						
	gram/Kwhr						
	of engine.						
	Due to						



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	lower stack						
	heights of						
	the marine						
	diesel						
	engine, ship						
	emissions						
	often gets						
	dispersed in the local						
	environmen						
	t and might						
	pose risk of						
	fumigation						
	during the						
	early						
	morning and						
	evening						
	hours due to						
	atmospheric						
	inversion						
	break-up						
	periods.						
				Due to			Presently, cargo evacuation through rail / conveyer /
				implementation			pipeline is ~23.87 % of overall cargo evacuation.
				of Bharat VI fuels (MoEF&CC) in			Vehicles having valid PUC certificate are only being
	Road			near future the			allowed to enter within APSEZ area.
	vehicle		Not	vehicular and	APSEZ		3.



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4. 4	emissions will be other major contributors to the air pollution in the region when the facility is fully developed.	Level-2	Applicable	diesel engine emissions will be reduced by about 50% from the current national levels. APSEZ should develop a robust contractor environmental policy to ensure that Bharat Stage VI emission norms are adopted by all their contractors and sub-contractors.	and All Industries	Short Term	APSEZ, has procured 217 nos. of Electrical Vehicle for internal cargo movement and 183 nos. E-ITV's are in operation. As well as procured 10 nos. LMV E-Vehicles for manpower movement and all are in operation. Electrification of Rail Corridor from Dhrub Railway Station to Adipur Railway Station has completed and movement started by electric locomotive. It will leads to reduce the gaseous emission and increase efficiency of transportation by rail.
5	Noise emissions						
	Noise emissions are envisaged from port operations,		Due to adoption of various mechanized operations at the waterfront development	APSEZ, all the tenant industries and facilities within APSEZ are required to undertake noise monitoring at their facilities to	APSEZ	Continual Process	 Below Safeguard measures are already taken for abatement of noise emissions. Development of greenbelt along the periphery of the operational area. D.G. Sets having Acoustic enclosures. Maintenance of plant machineries and equipment's on regular frequency.



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	industrial		, the noise	demonstrate the			Noise mo	-	-			•
_	operations		emissions	compliance with			accredited				•	, , ,
5.	and power	Level-1	from the port	the Noise level			M/s. Unist					
1	plants in the study area.		cargo handling will	standards. Continuous noise			Vapi as pe submitted	•	-		•	-
	Any		be minimal.	recording units			basis.	to the i	Julicellie		ities oi	i regulai
	increase in		An adequate	can be installed			00313.					
	noise levels		greenbelt is	by APSEZ at			The noise	monitori	na summ	narv for	last six	months
	beyond		being	facility boundary			(Oct'23 to		-			
	three		developed by	to address the			,	,				
	decibels		APSEZ to	community			Locations:	15 Nos.				
	from the		further	grievances, when			Frequency	: Once in	a month ((24 hourl	y)	
	background levels would be		reduce any residual impacts due	ever required. To assess the overall site wide			Noise	Unit	Leq Min	Leq Maxn	Leq Avr.	Leq Perm. Limit ^{\$}
	perceived as noise		to noise emissions	compliance and also to address			Day Time	dB(A)	57.4	69.9	64.7	75
	nuisance (USEPA)7.		from the facility.	any community grievances			Night Time	dB(A)	53.8	64.8	60.5	70
			Periodic	related to noise						\$ as p	er GPCB	standards
			noise level	issues due to operation of								
			monitoring programs	operation of APSEZ			Approx. II			•	•	
			were	facilities.			environme		-		_	
			adopted by APSEZ.	roomeres.			2023-24, monitoring					r quality
			Predicted				All the resu	ults are w	ell within	the star	dards F	rom this
			noise levels				it can be					



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			were found to be well within the designated noise standards for Industrial facilities.	lo ordor to			surrounding community. All other industries located in the APSEZ are adhere to monitor and control the ambient noise level as per permission granted by SPCB and same is being confirmed by APSEZ as well as SPCB on regular basis. Further, till date APSEZ has not received any grievances/notice for noise issues from any of the stakeholders.
				In order to address the public grievances related to noise from the facility, an internal Noise Management Committee can be formed by APSEZ to investigate the root cause and to develop and implement noise mitigation plans in the specific	APSEZ	Continual Process	As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, having role and responsibilities as defined above. Last committee meeting was conducted on dated 19/04.2024 and below were the point of discussion for way forward. • Brief introduction about the Environment Management Plan (EMP) • All members conveyed his environment management practices, issue & suggestions. • Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. • Discussed about the proper management of the canteen waste.



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				zones.			 Discussed about the cleaning of outside of the SEZ units. Discussed about the management of rain water & proper cleaning of the common storm water drainage system. Discussed about proper segregation & disposal of solid waste material. Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor. No grievance received for noise related issues, and it is observed that ambient noise level are well within the permissible standards.
6	Surface water of	quality (Terro	estrial and Marine	e)			permissione scandards.
6. 1	In general, release of untreated wastewater from industrial facilities would pose threat to water quality of	Level -1	As per the master plan of APSEZ, 67 MLD of wastewater is expected to be generated from the fully developed project scenario, for	As per the master plan of APSEZ, the existing CETP shall be augmented to 67 MLD in progressive manner based on the future demand. The facility should limit the marine	APSEZ	As and When Required	APSEZ has installed Common Effluent Treatment Plant (CETP) having 2.5 MLD capacities for treatment of partially treated effluent and sewage generated from industries within SEZ. Currently, CETP receives 940.21 KLD (Avg.) hydraulic load and considering the current development scenario, existing CETP is adequate to treat and handle the total effluent load coming from industries within SEZ. Out of 46 operational units only 4 industries within



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	streams, estuaries and marine water bodies.		which necessary permissions to set up decentralize d CETPs of various capacities are already obtained. Presently a CETP capacity of 2.5 MLD is in place. Presently member units treat their effluents to meet the CETP inlet norms and then send it to CETP. Treated wastewater from CETP	discharge of treated industrial wastewater to 16 MLD as per the permits. Remaining treated wastewater shall be utilized for horticulture purpose.			SEZ are sending their partially treated industrial as well as domestic effluent to the CETP confirming CETP inlet norms for further treatment and final disposal. Other industries within SEZ have their own STPs / ETPs for treatment of wastewater generated from their industrial operation and discharging the treated water on land for horticulture purpose within their premises as per permission granted by SPCB. The capacities of CETP will be enhanced on modular basis as per future requirement. Presently avg. 2.26 MLD (from CETP, ETP & STPs) of treated water is being utilized on land for horticulture purpose within APSEZ premises during period Oct'23 to Mar'24 and no discharge is made to any other source.



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			meets the stipulated discharge norms for utilization for greenbelt development within the APSEZ areas.	Efforts shall be		Daged	
			Online wastewater quality monitoring systems are installed at CETP to ensure quality of treated effluent meets the requisite discharge norms. No wastewater from CETP is discharged into natural	Efforts shall be made to recycle complete treated wastewater for port operations and industrial operations of APSEZ in future based on a detailed technoeconomic feasibility study.	APSEZ	Based on outcome Technofeasibility Study	Online continuous effluent monitoring system (CEQMS) installed at the discharge point of CETP to track any deviation from discharge norms. CEQMS is connected with CPCB/GPCB server & data is continuous transferring in both servers. Presently entire quantity of treated water from CETP is used for gardening / horticulture purpose within APSEZ premises.



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			date											
			Runoff during monsoon from coal storage yards is collected in sedimentatio n ponds (dump pond) to remove any residual dust particulates for further disposal into	Storm water runoff from the facility during the first rain shall be sampled and analyzed for the presence of heavy metals or other criteria pollutants to adopt corrective and preventive actions to protect the marine water quality. All red and	APSEZ	Continual	There are carry to either use (to remove Presently in a montinamely M Pvt. Ltd., reports of concerned The maring six montinaments of the concerned Presently in a montinament of the maring six montinament of the marin	runoffed for de reside Marin the by Now North Wapin of the dauth the watter to the wat	water dust sup dual dus e monit IABL an nistar E for APS same orities o er quali '23 to M	to duipressit), is a coring d MoE nviron SEZ & are to n regular'24)	mp po on or a llowed is bein F&CC ment APL peing ular ba nitorin) is as	nds. Tifter self disposing carriaccrecand Reboth. subminates. g sumper belone.	This wediments and to dited to	rater is ntation sea. It once agency th Labs nalysis to the
				hazard category industry within			TEST PARAM ETERS	UNIT	Cumul	ative Su	rface	Cumu	lative E	ottom
				APSEZ shall adopt spill					Min	Ma x	Aver age	Min	Ma x	Aver age
				prevention and			рН		7.9	8.2	8.0	7.86	8.2	8.04
				control program and no effluents shall be discharged into			BOD	mg/L	2.2	5.1	3.84	0	5.2	4.82



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				storm water- drains.			TSS	mg/L	76	152	107. 45	78	128	107. 46
							DO	mg/L	5.3	6.5	5.98	4.2	6.2 5	5.41
							Salinity	ppt	35.24	39	36.9 4	36.1 5	40	37.8 2
							TDS	mg/L	35864	366 10	362 25	345 00	375 40	3707 7
							Temper ature	оС	24.7	29. 8	27.3 8	24.2	29. 7	26.9 2
							Approx. environm 2023-24, monitorir	ental which	monitor n also	ikhs i ing a includ	s spe ctivition des ar	nt by es du nbient	APS	EZ for the FY
			Detailed marine hydrodynami c modelling studies	Good dredging practices shall be adopted by APSEZ: (i).Improving the	APSEZ	Long Term	No capit Dredged dredging within de	al dred mate is bei	lging ha rial ge ing disp	s bee nerate osed	n don d du at de	e, sind ring i signat	maint	enance
			revealed that the current and proposed dredged soil disposal	dredging accuracy (ii).Improving onboard automation and monitoring, (iii).			Dredging dredging Presently Trailer s dredging	and there uction)	manag are 3 no	emen s. (2 N	t of los. Cu	dredg tter su	ge m uction	aterial. +1 No.
			practices,	Reduce spill and loss, (iv).			Marine m	onitori	ng is be	ing ca	rried o	ut ond	ce in a	month



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			sea water intake and outfall facilities and desalination plant outfall etc have shown insignificant impact on the marine eco-system. As part of the comprehensi ve environment al monitoring program, APSEZ has been adopting marine water and sediment quality monitoring on monthly	evaluating the need for installing silt screens near mangrove areas during the dredging phase operations, (v). Environment friendly dredging activities can be undertaken in such a way that the overall turbidity levels near the mangrove and ecologically sensitive zones shall not exceed 100 NTU or 200 mg/l of TSS (10% lethal level of fish) Existing marine monitoring program shall be continued as per the directions			by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. The analysis reports of the same are being submitted to the concerned authorities on regular basis. Summary of marine water for the last six months is as mentioned above. The same practice will be continued in future also as per direction by MoEF&CC as well as GPCB. Monitoring will be focused near ecological sensitive area in case of need to carryout capital dragging near such areas.



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			basis.	of MoEF&CC and GPCB.			
7	Groundwater q	l uality and sa	l linity ingress	<u> </u>	<u> </u>	1	
7.	While Mundra block is enjoying safe ground water status as on date (based on the data published by CGWB), due to induced economic and population growth, use of ground water resources by the local people might increase in	Level-2	APSEZ is not utilizing ground water for any type of use. APSEZ is meeting the current water demand through Narmada water supply scheme and 47 MLD captive desalination plant at site.	A dedicated desalination plant of capacity 4,50,000 m3/day (450 MLD) will be developed in progressive manner to meet the APSEZ requirements.	APSEZ	As and When Required	Present source of water for various project activities is desalination plant of APSEZ and/or through Gujarat Water Infrastructure Limited (GWIL) and same is sufficient to meet the present water demand. APSEZ does not draw any ground water. The desalination plant of additional capacities will be installed on modular basis considering future development and requirement.



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	region. This might increase the TDS and chloride levels in the ground water in future.						
7. 2	Due to induced growth in the region, pressure on the available ground water source would increase and this could pose some threat to salinity ingress.	Level-2	Ground water is not drawn by APSEZ for its operations. Natural streams (seasonal rivers) passing through the APSEZ area will not be disturbed, the micro- watershed in the area will not be disturbed.	The Govt. of Gujarat, Narmada, Water Resources, Water Supply & Kalpsar Dept.,(WRD)12 has been implementing various salinity ingress prevention projects	District Administratio n*	Long Term	APSEZ will co-operate and comply with the directions from concerned regulatory authorities. APSEZ does not draw any ground water for the fresh water requirement. However, Adani Foundation – CSR arm of Adani Group has carried out rainwater harvesting activities in the nearby villages for benefit of the locals. Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up. To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch



S. No.	Identified environmenta I and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Complianc	e		
			Due to the above reasons, the possibility of salinity ingress due to APSEZ development is not envisaged. Mundra and Anjar blocks fall under fresh water to medium salinity zones. It can be observed that little variation was observed in the ground water salinity levels from year				Sahjeevan. Since, 10 y carried out in current as per inc Governmen WORK COM Below tabu during Com Water Cons Swaja > Aim: SWAJ, of groo in vari > Water the K securi weath condit	rears considera t in Mundra Ta year 1.11 mtr g creased in coa nt Figures. PLETED: Ilated Water Cor pliance period: ervation Projects I Project: The Foundation's AL, is aimed at ad undwater levels ous parts of Kuto Security Plan: D utch region, it is ty drinking and lii er condition, rain circle and water de prepared for the Water conservation	ble Water Coluka. Due to round water stal belt of stal belt of servation Processing the aland reductions district. We to arid clim is essential to velihood purp fall character emand, water Seven village.	with GUIDE and onservation Work satisfactory rain table increased Mundra as per ojects completed ervation program, larming depletion in water sources latic characters of o plan for water oses. Considering s, geohydrological security plan has s. Total Capacity Created (CUM)
			2013 to 2016				Mundra	Structure Check Dam	Structure 23	6,07,332.80
			across the Mundra and					Pond Deepening	66	1,89,121.08



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			Anjar blocks.					RRWHS		275	2750
			This aspect					Recharg Borewel		209	-
			confirms that the					Percolat Well		24	-
			overall salinity ingress from				Earlier (completed Ac	tivitie	s/Projects:	
			the shore into the land				Sr. No.	Project	Unit	Outcome	Impact
			due to existing APSEZ facilities and power plant outfalls are				1	Check dam Restrength en ing- Nana Kapaya		Water Storage Capacity increased by 48000 Cum	60 + farmer's 120+Acre Area of Agri land can be Irrigated
			less significant.				2	Recharge Borewell	21	Reduce Salinity ingress, and preventing water run	150+ farmer's 260+ Acre Area of Agri land for Irrigated
							3	Pipe Culvert at Checkdam at Bhujpur	1	prevent water runoff into seaside.	35 farmers' 120+Acr e Area of Agri land can be Irrigated



S. env No. I ar imp the dev sce	entified	Type of Impact & Magnitud e1	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							 Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar. Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. With the objective of to preserve the rainwater to



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							reduce the impact of salinity and recharge the ground water (the main source of water) to facilitate the Agricultural activities as well as for drinking water. Narmada Water Resources, Water Supply & Kalpsar Dept., (WRD)1 has been implementing various salinity ingress prevention projects. Under Sardar Sarovar canal project, Govt. of Gujarat has proposed to implement about 8200 Km stretch of water canal and the project is at various stages of implementation. Under this project about 112,000 ha of land in about 180 villages will be benefitted with irrigation needs. This will significantly reduce the pressure on the ground water resources in the region.
				While the individual industries in the study area will continue to undertake ground water quality monitoring as per the	All Concerned Stakeholders, District Administratio n and CGWB*	Continual Process	APSEZ (9 Locations – half yearly) & Adani Power Ltd. (5 Locations – quarterly) is carrying out ground water sampling and reports of the same are being submitted to the regulatory authorities on regular basis. The summary of APSEZ ground water quality monitoring for last six months (Oct'23 to Mar'24) are as below. Nos. of Location: 09



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				environmental			Parameters	Unit	Min	Max	Average
				clearances			pH @ 25 ° C		7.11	8.32	7.77
				issued for the			Salinity	ppt	0.99	21.11	5.86
				respective			Oil & Grease	mg/L	BDL(MD L:5.0)	BDL(MD L:5.0)	BDL(MDL: 5.0)
				projects, a regional level ground water			Hydrocarbon	mg/L	Not Detecte d	Not Detecte d	Not Detected
				conservation action			Lead as Pb	mg/L	BDL(MD L:0.01)	0.11	0.01
				committee can			Arsenic as As	mg/L	BDL(MD L:0.01)	BDL(MD L:0.01)	BDL(MDL: 0.01)
				the guidance of			Nickel as Ni	mg/L	BDL(MD L:0.02)	0.10	0.01
				state ground water board and district			Total Chromium as Cr	mg/L	BDL(MD L:0.05)	BDL(MD L:0.01)	BDL(MDL: 0.01)
				Administration.			Cadmium as Cd	mg/L	BDL(MD L:0.003)	0.14	0.02
							Mercury as Hg	mg/L	BDL(MD L:0.001)	BDL(MD L:0.001)	BDL(MDL: 0.001)
							Zinc as Zn	mg/L	BDL(MDL :0.05)	0.14	0.02
							Copper as Cu	mg/L	BDL(MD L:0.05)	BDL(MD L:0.05)	BDL(MDL: 0.05)
							Iron as Fe	mg/L	BDL(MD L:0.1)	1.78	0.43
							Insecticides/ Pesticides	µg/L	Absent	Absent	Absent
							Depth of Water Level	mete r	1.90	2.20	2.07



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							from Ground Level
							BDL – Below Detection Limit MDL – Minimum Detection Limit
							Approx. INR 13.37 Lakhs is spent by APSEZ for
							environmental monitoring activities during the FY
							2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.
							The freshwater requirement of all the industries within SEZ is being satisfied through APSEZ. All the industries are encouraged to monitor ground water quality as per the permissions granted by competent authorities.
							As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited and other member units, having role and responsibilities as defined above.
							APSEZ will co-operate and comply with the directions from concerned regulatory authorities for ground water management.
8	Waste Manage	ment					
	Solid waste will be generated from		APSEZ has been adopting Zero waste	APSEZ will continue to adopt Zero Waste Initiative			Presently APSEZ has implemented Zero waste Initiatives as per 5R (Reduce, Reuse, Recycle, Recover & Reprocess) principles of waste management. At present, APSEZ has developed material recovery
8.	industrial	Level-2	Initiatives	and wastes will	APSEZ	Continual	facility for 6.0 TPD capacities. A well-established



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1	activities of APSEZ and other permitted facilities in the study area including Mundra town. These wastes would contain recyclable material, constructio n debris, organic waste, inert material and e-waste etc. In the absence of any organized source segregation programs		and the entire waste generated from existing operations is segregated and disposed to recycling vendors, thereby APSEZ has achieved zero landfill status as on date.	be segregated at source and disposed to various recycling vendors, co-processing in cement plants. This initiative helps not only to reduce the waste to landfill significantly, but also to recycle the materials there by avoiding ecological impacts.		Process	system for segregation of dry & wet waste is in place. All wet waste (Organic waste) is being segregated & utilized for compost manufacturing and/or biogas generation for cooking purpose. The compost is further used by in house horticulture team for greenbelt development. Whereas dry recyclable waste is being sorted in various categories. Presently manual sorting is being done for sorting of different types of solid waste. Segregated recyclable materials such as Paper, Plastic, Cardboard, PET Bottles, Glass etc. are then sent to respective recycling units, whereas remaining non-recyclable waste is bailed and sent to cement plants for Co-processing as RDF (Refused Derived Fuel). The same practice will be continued in future also. APSEZ has also been recognized for Zero Waste to Landfill certification from reputed organization. APSEZ, Mundra is certified for Zero Waste to Landfill management system (ZWTL MS 2020) by TUVRheinland India Pvt. Ltd. (valid up to 31.05.2024). Details of the same were submitted as part of compliance report submission for the duration of Apr'21 to Sep'21. APSEZ is being done proper solid waste management in his operational area with 5R principle as per Waste Management Plan.



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	and material recycling strategies and infrastructu re facilities, these wastes will enter into environmen t and would pose long term health impacts.						
8.2	Considering an average solid waste generation of 0.25 Kg/person/d ay, the estimated solid waste from facilities within	Level-2	APSEZ has made a provision for central waste management facilities within the existing site based on the future needs. As part of the Zero Waste	The existing waste segregation and material recycling facilities will be augmented to dispose safely the wastes generated from APSEZ areas. Solid Waste Management Program shall be	APSEZ	Continual Process	Industries located within the SEZ area are also complying with the waste management rules stipulated by statutory authorities and same is also being confirmed by APSEZ as well SPCB on regular basis.



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	APSEZ will be in the order of 100 TPD (36,500 TPA).		Initiatives, no landfill facilities will be installed at APSEZ.	adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016			
8.3	About 35 TPD (13,000 TPA) of solid waste would be generated from the proposed industrial areas located outside the APSEZ area.	Level-2	As per the MSW Rules 2016 all the industrial facilities and SEZs are required to adopt waste segregation facilities at the respective properties and non-recyclable waste shall be disposed	Solid Waste Management Program shall be adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016	All Industries	Continual Process	



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			to landfill sites.				
9	Ecological aspe	ects (terrestr	ial and marine)				
9.	About 1576 ha of shrub forest land contiguous to APSEZ area is applied for land diversion for various developmen tal activities. This might have certain level of changes in the biodiversity	Level -1	It is noted that the designated forest land is free from any native vegetation and comprises of Prosopis juliflora. It is also noted that no endangered species are present at the shrub forests that are applied for land	APSEZ has approached concerned authorities for diversion of designated forest land. Suitable compensatory afforestation plan shall be adopted based on the recommendation s and directions of the concerned authorities. Due to adoption of compensatory afforestation program through a scientific manner, the	APSEZ/State Forest Department*	Long Term	Stage – 1 Forest clearance granted for diversion of 1576.81 Ha Forest land. APSEZ has applied for getting EC & CRZ clearance for SEZ / Industrial Park in 1576.81 Ha Forest land. ToR accorded by MoEF&CC on 30.11.2021 and draft EIA is being carried out through NABET accredited consultant.



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in the study area.		diversion. It is also noted that no forest produce is reported from this designated forest land parcel due to lack of economic importance of plant species reported in the shrub forest. It is also noted that no tribal lands are located in the designated forest land parcel.	overall ecological footprint in the district will be increased. Due to plantation of native tree species as part of greenbelt development, the overall biodiversity of the region will increase considerably when the project is fully developed.			



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			will not be any change in biodiversity due to the proposed diversion.				
9. 2	Mangrove conservation areas are located adjacent to the APSEZ area. Accidental discharges of industrial effluents into the marine environment would pose certain ecological risk.	Level -1	No development activities will be undertaken within mangrove conservation areas. APSEZ has taken up large scale mangrove afforestation activities in an area of more than 2800 ha at various locations across the	Mangrove footprint and health status shall be monitored annually	APSEZ	Continual Process	As per study conducted by NCSCM in 2017, mangrove cover in and around APSEZ, Mundra has increased from 2094 Ha to 2340 ha (as compared between 2011 to 2017). The analysis has shown an overall growth of 246 ha. The cost for said study was INR 3.15 Cr. Last study was carried out in the year 2019 and based on that there is an increase of mangrove cover between March 2017 (Total 2340) and September 2019 with an extent of 256 Ha (Total 2596 Ha Area) which is about 10.94% rise in growth rate, also It reveals that the mangrove and the tidal system in the creeks remained undisturbed over this period. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. Analysis of data between categories indicated that there was an increase in dense mangroves along with the conversion of scattered into sparse, that shows the



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			coast of Gujarat state in consultation with various organization s The Adani Foundation introduced 'Mangrove Nursery Developmen t and Plantation' scheme in the area as an alternative income generating activity for the people of the region.				As a	part of GCZMA	recommendations and NCSCM tion action plan, APSEZ has activities. Compliance APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%.



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								 This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of mangroves in a progressive direction. Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. According to GUIDE Mangrove monitoring study report November 2023 (The report was submitted during the last compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi



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							mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. • Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). • The cost of the said study was INR 23.60 Lacs incurred by APSEZ.



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								Summary mapping	and	moni	grove toring
								(from 201			
								Mangro ve mappin g Year	Mangro ve cover total	cove	grove r area eased
								g	Area (Ha.)	Ha c.	%
								2011	2094	-	-
								2011 to 2016-17	2340	24 6	11.7 5%
								2017 to 2019 till March	2596	25 6	10.9 4%
								2019 to 2021 till March	2723	12 7	4.8 9
								Total	2723	62 9	
								To compl recommen mangrove	ndations	rega	arding



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							2.	Tidal observation in creeks in and around APSEZ	2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023. • APSEZ carried out the tidal observations at locations similar to 2017 in Kotdi, Baradimata, Navinal, Bocha and Khari creeks under the guidance of NCSCM. • The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. • The cost of the said activity was INR 1.0 Lacs.
							3.	Removal of Algal and Prosopis growth from mangrove areas	 Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 Lacs during the FY 2022-232023-24.



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									The report of algal removal is attached as Annexure – 3 .
							4.	Awareness of mangroves importance in surrounding communities	Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattels / 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg. • Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land



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								development with strong Community Contribution and Mobilization. Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas. APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23 Refer CSR report attached as Annexure – 2.



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							To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked. After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work was 23.60 Lacs (Including Taxes), which was paid by APSEZ. GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted during the last EC compliance report submission Apr'23 to Sep'23.



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							According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradi Mata, Navinal, Bocha and Khari creeks and also in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019. Now, according to GUIDE Mangrove monitoring study report November 2023 (The Report was submitted during last EC compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi Mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ



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							showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023. Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE,



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							continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem. Mangrove plantation done at Luni Sea coast with school students on "International Day for the Conservation of the Mangrove Ecosystem" on 26th July-2023 and Bhareswar sea coast area with fisher folk community on "World Nature Conservation Day" on 28th July-2023. Web talk show was organized on the occasion of "International Mangrove days On Multi species Mangrove biodiversity with Joint effort of GUIDE and Adani Foundation, Mundra. 8th June is celebrated as world ocean day. Adani foundation had celebrated the world ocean day by coastal cleaning activity at Mandvi Beach.
9.3	Outfall from the thermal power plants desalination and CETP would pose	Level-1	A detailed marine hydro-dynamic and dispersion modelling of the study area indicates that the	All approved marine outfalls shall be monitored for salinity, temperature and other designated parameters as per consent to	APSEZ and Concerne d Industry	Continual Process	Presently marine monitoring is being carried out by the Adani power plant at the marine outfall locations and reports are being submitted to the concerned authorities on regular basis. APSEZ is carrying out Marine monitoring once in a month at 9 locations in deep sea by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. The analysis reports of the same are being submitted to the



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	certain level of impact on the marine environmen t.		background temperature and salinity at mangrove conservation area will not increase from the prevailing background levels as the outfalls are located far away. APSEZ and respective power plants in the study area have been monitoring the marine water quality status on monthly basis for the stipulated environment	establish issued by GPCB. Existing marine enviro nmental monitoring program shall be continued.			Adani power 5 locations (2 by NABL and Unistar Envianalysis repo concerned a of marine was The compariand current of Temp. Salinity As per above major deviat and thus indi	plant is 2 locati MoEF8 ronmer rts of tuthorit iter qua son of monitor Unit oC ppt	s also dons at BCC account & Reine samples on polity is someting data and a second control of the samples of the country is someting data and a second control of the country is someting data and a second control of the country is sometimes of the country is sometimes of the country in the country is sometimes of the country in the country in the country is sometimes of the country in the count	poing maring putfall local credited agreement Lagrange are being regular backnown about water resular are as being max Present 30 36.7 In the seem incentration	e water ation) in ency name by Pvt. I submit sis. The ve. Ults beliefow. CIA 24.2 35.2 4	n deep sea amely M/s. Ltd. The sted to the summary tween CIA Min Present 30 7 here is no arameters



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			al and ecological parameters.				
9. 4	Terrestrial Ecology: Study area doesn't have any notified national parks or ecological sanctuaries. Since the area falls under dry deciduous shrubs. Due to scanty rains in the area, the overall natural green- cover/vegetat ion in the area is very small.	Level-1	APSEZ has developed greenbelt in an area of 550ha as against the committed area of 430ha. A dedicatenurs ery is set up to promote plantation. APSEZ have undertaken a plantation with about 9.6 Lakh fully grown trees.	The compensatory afforestation area to be monitored annually to check the survival rate of the plantation.	APSEZ	Continual Process	APSEZ has developed its own "Dept. of Horticulture" which is taking measures/ steps for terrestrial plantation/greenbelt development. APSEZ, Individual SEZ Industries and Adani Power Plant has developed approx. 700 Ha. area as greenbelt within the APSEZ area including SEZ industries & Adani Power Plant. Dedicated horticulture department is maintaining and monitoring the terrestrial green belt development on regular basis to check the survival rate of plantation. Total expenditures of the horticulture dept. of APSEZ during the FY 2023-24 within APSEZ is INR 904 lakhs.



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10	Socio- economic aspects						
10.1	Population growth in the Mundra region was reported to be in the order of 85% during the past decade (2001-2011). Further expansion of the urban area could be possible due to induced economic growth in the region. Increase in population will have a additional need for public infrastructure in the region.	Level-1	Dedicated townships are developed within APSEZ area with necessary community infrastructure s such as hospital, school, recreational facilities, sewage treatment and waste collection facilities. Adani Foundation has been undertaking various CSR programs under the principal themes such	The existing townships will be expanded to accommodate about 4lakh people when the project activity is fully developed.	APSEZ	As and When Required	APSEZ has developed two townships (Shantivan and Samudra) accommodating 2302 households and associated infrastructure facilities. Accommodation is made available for all interested employees working within Adani group & SEZ industries. Out of which 95.57% Occupancies are accommodated within the townships and rest are available for employees working within APSEZ. At present 46 nos. of industries (processing & non-processing) are operating within the SEZ. Township facilities are also made by SEZ industries within Mundra town for their employees having basic infrastructure facilities and requirements. Most of the employees working in SEZ industries are residing in Mundra township having all basic requirements and associated facilities. The existing social infrastructure facilities are adequate to accommodate the people considering present APSEZ development. The existing townships with associated facilities will be expanded as per requirement. Other infrastructure facilities have been developed for people are as follows. • Multi-Specialty Hospital • School



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			as education, community health, sustainable livelihood and rural infrastructure. About Rs. 97 Cr has been spent on various CSR activities in the Mundra region since 2010. Similar community development programs (based on need based assessment) will be continued in future as well with allocation of appropriate budget.				 Commercial complex Religious place APSEZ is actively working with local community (including fishermen community) around the project area and provides required support for their livelihood and other concerns through the CSR arm – Adani Foundation in the main five persuasions is mentioned below. Community Health Sustainability Livelihood – Fisher Folk Education Rural Infrastructures Skill Development Adani foundation has spent approx. INR 8515.06 lakhs from April – 2018 to March – 2024 for CSR activities which also includes cost of rural infrastructure projects. Major works carried out since April 2018 as a part of CSR activities are as below. Current FY 2023-24 infrastructure development activities: 377 - AC Roof sheet support to Fisherfolk Vasaha 1700+ Benefited.



No. I and impact the following scenarios	onmenta Impact & Magnitud e1 ully loped	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
						 2 Development of Common Gathering flooring work – 4000+ Benefited. 195 Stall – Vegetable market – 900+ Benefited. Solar Panel System at Mundra – 600+ Benefited. Maintenance, Fencing & Material Support - 30+ Benefited.Renovation of Shed at Shekranpir Bhopavandh - 2000+ Benefited. Renovation Check dam and CC road work at Nani Khakhar – 200+ Benefited. Renovation of High School at Zaarapa – 2200+ Benefited. Construction of Pipe Culvert – 400+ Benefited. Construction of chain-link fencing at Mangra village – 300 people benefited. Gaushala Shed at Zarapara village – 400 cettle benefited. Renovation of approach road, Zarpara – benefiting 400 villagers. Renovation of Civil and Electrical Work at ITI, Mundra - 500 students benefited. Construction of 21 Borewell Recharge in Nagmati River - 150+ farmer benefited. Check dam Desilting and restoration at Nana Bhadiya – 100+ farmers benefited. Renovation of Check dam at Pavadiyara village - 300 people benefited. Renovation of Balwadi at Juna bandar & Luni bandar.



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							 185 RRWHS construction is ongoing in various villages - will benefit 1300+ residents. Supply & installation of Solar panel (3.25 KV) at CGP, Mundra – benefiting 1200 people. Development of Model Farm in Zarpara, Siracha & Mangra – Benefiting 300 people. Renovation of approach road at various fisherfolk vasahat. Last FY 2022-23 infrastructure development activities: 40 RRWHS structure have been completed 208 Bore-well recharging activity is completed. Percolation well Recharging work at Bhadiya & Mota Kandgra village. Sluice gate Construction to Control Flood during Flooding at Khoydivadi Vistar Bhujpur. Pond Beatification and Bund Strengthening at Bhujpur village. Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. commissioning of Community Training Centre at Shekhadiya. Two Pond Deepening at Zarpara under Amrut Sarovar Yojna. Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan.



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							 Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. JCB & Hitachi Machine Support for Pre-Moonson activities. Repairing and Maintenance work of Approach at Luni, Bavdi and Navinal Fishermen Bandar. 3 Re-strengthening of Approach Road. Renovate Blood storage Lab CHC Mundra Renovation Blood storage Lab CHC Mundra. Constructed 2 nos. of CC Road of 700 mtr. Constructed Community Training center Shekadiya. Constructed 2 nos. Disable Widow Toilet Block Installed R.O. Plant at Mokha with capacity 1000ltr /HR. Constructed 4 nos. Common gathering Open Shed Constructed 03 nos. of Water Tank at Luni Bandar. Developed of Cricket Ground at Hatdi Village Pond Deepening work at Vadala & Mota Bhadiya Artificial recharge borewell in Borana, Mangara & Dhrub village. Under Dignity of Drivers Project, Adani Foundation has constructed Resting Shed for Drivers entering in SEZ Premises. Total 50 beds are constructed, drinking water and sanitation plus recreational – TV Facilities.



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							Similar community development programs (based on need based assessment) will be continued in future as well with allocation of appropriate budget.
10. 2	The overall sex ratio was found to reduce by 28% in the Mundra taluk (study area) during the period 2001 - 2011. This could be attributed to increase in influx of working men in the region due to rapid economic development. Similar trend might continue in future due to induced economic growth in the region.	Level-2	Adani foundation is taking up several girl child education programs as part of CSR activities to create awareness about girl child protection.	Suitable regional level awareness programs on the girl child protection and encouragement programs in line with state and national policies shall be adopted under Corporate Social Responsibility programs in association with district authorities.	APSEZ, Other development projects and District Administration*	Long Term	Major works carried out since April 2018 as a part of CSR activities to create awareness about girl child protection are as below. • The Adani Foundation provided scholarship support to motivation and encouragement of fishermen boys and girls for higher education under this program. We extend 100% fee support to female candidates and 80% to male candidates."W. • Student Benefitted Under Uthhan Project: Utthan Initiatives Benefited



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							Adani Students Development Center (ASDC) Introducing English as a Third Language Enhancing Reading Habits IT on Wheels Teachers' & Sahayak Capacity Building Formation of Eco Club Day Celebrations & Collaboration with GoG Mothers as catalyst in transformation Strengthening Stakeholders	2 Adani Evening Education Center, 5 Adani Competitive Coaching Center, 5 Adani English Coaching Center Students: 5000+ Classes 1-4, Curriculum, Every Friday morning assembly in English Redding corner, 1000+ Oasis workshop, 162780 Books CICO, 100+ Schools partner from 10+ Country in International school library month (ISLM) 2 dedicative van, 2 IT instructors, 55 laptops, 34 schools, Empowering 4170 students, 200+ High schools' students 6 Students selected in District level sports school, Inspiring more 100 Students. Khel Maha Kumbh: 2000+ 3500+ Hours Capacity building program + Webinar + Diksha + 10 full days training. Plastic free village workshop: 1250+ Students, Environment Awareness program & Tree plantation in schools. Summer Camp: 6000+ Students Diwali Mela: 5500+ Students. 1400+ Parents participated. Mothers meet: 700+ Mothers Joined: 15000+ this year. (Meetings + Home Visit) Support in Taluka, District & state level various initiative with DIRT, BRC, Strengthening SMC Committee.



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							 Uthhan Project promotes girl child education, creating awareness through various Govt schemes i.e. Vahali Dikri Yojana, Sukanya Samriddhi Yojana etc. till date covered more than 1200 girl child to get benefit out of it. AVMB School Bhadreswar where Free of Cost education is provide to Poor and Needy Family Child up 10 standards More than 500 Students are benefiting every year. Separate sanitation facilities for girl child in schools. Menstrual Hygiene Awareness: To educate and empower rural girls and women about menstrual health, break down negative social views on menstruation, supply to enhance their overall health, education, and empowerment." Till date 36% women had never used sanitary Napking single time now they started using due to our intervention. This will reduce UTI @ 22%. As our sample survey. 1587 Women and 494 School girls from 18 nos. of villages. Beti Vadhavo Programme was organized in 32 Villages in the presence of Village Sarpanch and other leaders in year 2017-18. We explained people about the various topics i.e. importance of girl child, Sex Ratio, Gender Equality and laws regarding Child abortion. This initiative was well accepted by community and we have observed a visible change in their mindset.



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							 During the year various activity like, Covid-19 awareness in village & Slum Area, Menstrual Hygiene Day, Breastfeeding Week, National Deworming Day, National Nutrition Month had been celebrated. Project Suposhan is initiated with the Motive to focus on adolescent and Reproductive age women nutrition part. Till date covered more than 12500 women and 8700 adolescents under this Project and brought them to considerable status. Curb malnutrition amongst Children, Adolescent girls and Women in our CSR villages. 204 beneficiaries covered in Breastfeeding Week 320 beneficiaries covered in National Deworming Day 20 villages covered in celebration of NATIONAL NUTRITION MONTH 42 FAMILY COUNSELLING 2059 Women participated in celebration of Women's Day week. To reduce malnutrition and anemia amongst Children 95 % & adolescent girls and pregnant & lactating women by 70 % in three years Reduction IMR and MMR Support Awareness & Cover 100 % Vaccination taken by Child & women. SuPoshan Thanksgiving program was organized. In this webinar DDO, CDPO Mundra and other



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							dignitiaries remained present and appreciated the efforts to overcome malnourishment in Mundra and Bitta. The National girl child day was celebrated with ICDC Department with Vahli Dikri Yojna form filling, paediatric health camp and Baby health kit distribution at Mundra. Mrs. Ashaben-CDPO Mundra was remain present in this event. Total 61 forms has received approval letter from GOG and 15 forms filled upon the same day. Adani Foundation is working with 15 Self-help group and supporting to develop entrepreneur skills to become self reliant, sourcing more than 350 women to absorb in various job –this will give them identity, confidence and right to speak in any decision for home, village and working area. About INR 8515.06 lakhs has been spent on various CSR activities in the Mundra region since April 2018 to till March 2024 including cost of community health and education for woman and girl child.
10. 4	Due to economic growth leading to rapid urbanization, which prompts the	Level-2	Adani hospitals, Mundra is setup by Adani group near Samudra township with a goal to provide	APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the growth scenario at	APSEZ	Long Term	Adani hospitals (Multi-specialty), Mundra is having 110 bed facility and same is setup by Adani group near Samudra township. Primary health center and community health center are in place within the Mundra taluka.



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need for healthcare facilities in the region. For an influx of 6 lakh people from APSEZ operations and additional 3 Lakh from induced growth by th year by 2030 (fully developed scenario), total hospitals facilities with about 540 beds would be required.		primary and secondary health care services to Adani group employees and the local populace of Mundra. The existing 100 bed Adani hospital at Mundra has been catering the services ranging from wellness and preventative care.	APSEZ development.			Other than this Adani foundation is doing various activities as part of community health. The details of last year are as below. • Mobile Heath Care Units and Rural Clinics • O7 Rural Clinics • O5 villages of Mundra & O2 village Mandvi block has benefited by rural clinic service. • Total Patients Benefitted FY 23-24: -23327 (direct & indirect) by Mobile van and rural clinic • 2 financially challenged patients has been supported with Dialysis treatment at 124 Times which added day in their Life. • Provided 41,546 medical health services and conducted health awareness camps for 763 High school students. • Cataract-Free Mundra: The initiative is a dedicated effort to eradicate cataract-related vision impairments specially focused on Senior citizen through Meticulous planning as below. Lives Impacted: - 1131 ➤ Comprehensive Eye Screenings at Village level ➤ Cataract Surgeries to GKGH, Bhuj ➤ Post-Operative Care and Follow-up ➤ 5 successful Operation



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							 Specialty camps, Eye checkup camps, Blood donation camp, Anti-tobacco awareness camp, TB screening, and other are conducted in core villages as well as in labour colonies. Specialty health (Gynec, ophthalmic, specialty health camp): - 5795 Patients Benefited. General health camp: - 1618 Patients benefited. Blood Donation Camp: 1715 people have donated blood. Conducted health programs for students, engaging 763 participants, and held sessions on Personal Health & Hygiene Awareness, addressing critical health issues and promoting overall well-being. Women's Health: Provided health services to more than 2610 women benefitted through Menstrual & Mental Health Awareness Drive. Dialysis Support: During this year, 2 patients were supported for regular dialysis with 124Times which added day in their Life. Medical Supports: 1007 beneficiary in 35 village. International year of Millets - 2023: To promote millet culture and raise awareness about its benefits in Mundra, we organized a Millet Competition across nine villages. Over 715 women took part in the competition, while 2200 benefited from awareness sessions. Through this



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							 initiative, 300 indigenous millet recipes were showcased, highlighting the potential for sustainable and nutritious dishes in our daily diets. Ayushman card facilitation: Ayushman card issued to 5584 for 25 village of 686.50 Cr. health insurance. Preventive health Campaign the Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene initiatives and Millet consumption for healthy body. Sample Survey Report 2023-24 55% Never heard about Menstrual hygiene. 60% Are using cloths on regular basis. 36% Had never used sanitary pads. 68% Had no information about UTI. 30% Never used millets in their diet. 60% Never heard about millets or it's benefits. 2222 - Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. For Preventive health care General and multispecialty camps Pediatric camp, General Health camps in 7 villages and Super specialist



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							camp which benefitted more than 4690 patients of Mundra & Mandvi Taluka. • Cattle Health Camp: Adani Foundation and Animal Husbandry department Veterinary Jointly organizing cattle health Awareness and vaccination programs in 24 Villages of our periphery villages with total 18903 cattle benefitted, and 18870 cattle vaccinated. Total 982 cattle owners benefited for Preventive Health Care & Fodder Support Program • Present Hospital facilities are adequate to avail the medical treatment for Mundra region considering present development. Other Occupational Health centres, primary health centres and community health centres are also in place in Mundra to take care the people residing in Mundra. Adani group is also operating high quality health care services to the people of Kutch at G. K. General Hospital, Bhuj having 750 beds facilities on public private partnership (PPP) model, which is 60 km far from Mundra. APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the future development at APSEZ.
	Due to rapid economic development in the region,		APSEZ has been giving preferences to people from	APSEZ is			Current FY 2023-24 fishermen livelihood activities development activities: Overall Persistent efforts for Fisherman
	several		Gujarat for	committed to			development:



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10.	employment opportunities can be generated to the local people. When the area is fully developed by the end of 2030, the working population of the Mundra taluk would increase from current level of 55,000 to as high as 4,00,000, which will be 45% of the total envisaged population in Mundra Taluk by the end of 2030.		providing employment opportunities based on eligibility and skills. In Mundra, special programmes have been conducted by Adani Foundation to enhance the employability of youth from fisherfolk communities. Based on the need assessment results, several livelihood options have been introduced by the Adani Skill Development Centre, Mundra. In	provide support for fishermen livelihood activities and has submitted a detailed 5 years plan to MoEF&CC with a total budget of Rs.13.5 Cr.	APSEZ	Short Term	 598 Education Kit Support 273 Fisherman Shelter Support 1,247 Vehicle transportation support of Mundra and Mandvi taluka 106 Cycle Support to high school going students. 613 Scholarship Support 419 Youth Employment 195 Linkages with Fisheries Scheme 3,534 Ramatotsav Community Engagement 56,523 Man days Mangroves Plantation Vehicle Transportation Facilities: 146 Students supported Mundra Taluka and 58 Students supported at Mandvi Taluka during the compliance period. Education Kits Support: Education Kits including notebooks, guides, and bags, to fisherfolk students studying in 9th to 12th standard to enhance their learning experience (57 nos. students benefitted). Educational Awareness Sessions: Through targeted awareness sessions in Fisherfolk Vasahats, we promote the transformative power of education, with a particular focus on advancing girl-child education. (487 Students motivated for high school Education). Scholarship Support: Provide scholarship support to 31 deserving students, covering their higher



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			these centres, youth can join and get vocational training for a number of technical and non-technical skills. An industrial Training Institute is set up at APSEZ, Mundra, to enhance the skill levels of the local youth to maximum possible extent.				secondary school fees. Emphasizing gender equality, we offer 100% fee support to female candidates and 80% to male candidates. • Cycle Support: Overcoming transportation obstacles, our cycle support initiative enables six 9th standard fisherfolk students from Juna Bandar to continue their education with ease. • Assisting During Emergencies: Fisherfolk Home were significantly damaged by the Biporjoy Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery. (336 Fisherfolk house benefited) • Fostering Youth Employment: At APSEZ Mundra, our mission revolves around providing sustainable employment opportunities for the local fishing community. We serve as a bridge between industries and Fisherfolk youth, facilitating job placements to enhance livelihoods. This year, we have successfully engaged 115+ Fisherfolk youth, paving the way for a brighter future. (115+ Fisherfolk youth employed) • Strengthening Fisherfolk women: Through comprehensive health and hygiene initiatives, we empower Fisherfolk women. Our programs include family planning resources, menstrual hygiene workshops, nutrition advocacy, and health awareness sessions covering vaccinations, clean water access, and mental health support. (449 Women benefited)



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							 Potable Water Distribution: Providing potable water facilities to 9 Fisherfolk Vasahats daily, either through water tankers or by establishing linkages with the nearest Gram Panchayat. This initiative benefits over 5000 Fisherfolk, significantly improving their health and productivity. (5000+ Population benefited). Cement Roof Sheet Support: fisherfolk Home were significantly damaged by the Bipor Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery." Potable water Distribution: Providing access of potable Drinking water Facilities to Nine sherfolk vasahat on Daily bases, either By Water tanker or Linkage with Nearest Gram panchayat. More than 5000 Fisherfolk Population are getting benefit which impact on their health and efficiency. Water distribution to Luni & Bavadi Bandar Fishfolk Vasahat: 35000 KL water for 936 people. Sagar Mitra Card: Introduced the 'Sagar Mitra Card' to simplify access for Fisherfolk to specific fishing routes within APSEZ. This digital card is connected to a digital punching machine located at designated entry points. Initially, we have implemented this system for Navinal



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							Fisherfolk, and so far, we have issued a total of 57 Sagar Mitra Cards." Government scheme Awareness session was held in association with Fisheries department Bhuj to facilitate pagadiya fishermen by providing fishing kits to seven Fishermen. The coordination was made by Adani Foundation to process application. More than 35% of enrolled students in AVMB come from the Fisherfolk community. Youth Employment: Our main objective is to offer sustainable employment opportunities to the local fishing community in APSEZ Mundra. We bridge the gap between industries and Fisherfolk youth by facilitating job placements. Currently, we have successfully engaged a total of 12 Fisherfolk youth in this endeavor. Vidya Sahay Yojana – Scholarship Support: All basic education supportive facilities have been created to promote education in fisher folk community. We are deeply committed to empowering the future of fisherfolk communities through education. To this end, we provide scholarship support to 30 deserving students, covering their actual school fees. In our unwavering commitment to promoting gender equality and advancing girl child education, we extend 100% fee support to female candidates and 80% to male candidates."



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							 During FY2023-24 Approx. INR 122.32 lakh were spent for Fisherfolk Amenities work in different core areas Till FY 2023-24, Adani Foundation has done total expenditure of INR 1460.51 lakh for Fisherfolk Amenities work in different core areas. APSEZ is carrying out various initiatives specific to the Fisherfolk community which includes: Vidya Deep Yojana Vidya Sahay Yojana – Scholarship Support Adani Vidya Mandir Fisherman Approach in SEZ Machhimar Arogya Yojana Machhimar Kaushalya Vardhan Yojana Machhimar Sadhan Sahay Yojana Machhimar Shudhh Jal Yojana Sughad Yojana Machhimar Akshay kiran Yojana Machhimar Suraksha Yojana Machhimar Ajivika Uparjan Yojana Bandar Svachhata Yojana These initiatives are planned for the period 2016 – 2021 with a committed expense of INR 13.5 Cr as submitted earlier in detail in the report namely "Silent Transformation of Fisher folk at Mundra",



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							Till, FY 2023-24 approx. 14.61 Cr. INR, has already been spent in support for fishermen livelihood activities. Further, details regarding the expenditure incurred against the commitment are attached as Annexure – 10.

Annexure – 8

NATIONAL POLLUTION RESPONSE EXCERCISE NATPOLREX (IX) REPORT

Venue: Off Vadinar

Date: 25th Nov 2023

Exercise conducted by: Indian Coast guard

Resource agencies and stake holders involved:

1. M/S Adani Port & SEZ, Mundra

- 2. Indian Oil Corporation LTD, Jamnagar
- 3. M/S Nayara Energy LTD VOTL, Vadinar
- 4. M/S Reliance Industries LTD, Sikka Jamnagar
- 5. M/S Essar Bulk Terminal, Salaya

Attendees:

- 1. Capt. Hemant Dhruv
- 2. Capt. Peeyush Suwalka
- 3. Dol 11 Crew with Master
- 4. Mr. Yogesh Nandaniya
- 5. Mr. MP Choudhary with his team
- 6. HMEL Team
- 7. SRS Team
- 8. Sea Care Team

Statement of facts

0650 hrs.: Tug Victor left SPM & started proceeding to Vadinar for exercise.

0700 hrs.: Tug Dol 11 with crew and attendees left for Vadinar for NATPOLREX exercise from Ro-Ro pontoon.

0810 hrs.: Tug Dol 11 informed Vadinar Port Control that Tug Dol 11 & Victor will be

entering Vadinar port limit for NATPOLREX exercise.

0845 hrs.: Briefing of drill carried out.



0855 hrs.: Informed ICG Commander Mishra on phone that Tug Dol 11 arrived at specified location 22 31.00 N 069 39.00 E. Commander Mishra advised to keep watch on VHF CH 71 for further communication with ICG vessel (Call sign: Coastguard Sajag)

0945 hrs.: Tug Dol 11 communicated with Coastguard Sajag for launching boom to demonstrate 'J' shape boom configuration. Coastguard Sajag advised to commence launching boom.

0948 hrs.: Commence lowering boom.





1015 hrs.: Completed lowering boom (5 section 250 m in length)

1035 hrs.: J-formation of boom completed. Same informed to Coastguard Sajag. Sajag advised maintaining position with 'J' shape boom configuration.





1045 hrs.: Skimmer deployed in water. The floating storage tank was kept ready on Dol 11 deck. The Overside OSD spray was pressurized and demonstrated with water only.





1150 hrs.: The whole operation observed by Coastguard Samarth & Sajag and appreciated the quick and professional response from Dol-11. The Coast guard advised to start securing gears & break off from position.



1152 hrs.: Secured all deployed equipment and started recovering boom.

1236 hrs.: Completed recovering boom and vessel started proceeding to Mundra.

Same informed to Vadinar port control and Coast guard vessel Sajag.

1245 hrs.: Debriefing of drill carried out.



1430 hrs.: Dol 11 arrived Mundra port. Tug Victor arrived at IOCL SPM.

ADANI PORTS AND SPECIAL ECONOMIC ZONE LTD. MUNDRA OIL SPILL CONTINGENCY RESPONSE PLAN

ANNEXURES

ANNEXURE 1 IN	ITIAL OI	L SPILL REPORT	T	
		achin Srivastava- HOD Marine		
reporting	· ·	t. Girish Chandra - HOS marine, APSEZ		
Tel No.	+91 63	59883102		
Date & time of incident	19.01.2 hrs.	2024 / 0900		
Spill location	IOCL S	PM		
Likely cause of spill	Hose r	upture	Witness – Tug Dol 11	
Initial response action	Initiate	ed OSCRP		
Any other information			NO	
Identity of informant		Tug Dol 11		
Time of FIR		0900 hrs.		
Source of spill		IOCL SPM		
Cause of spill		Floating Hose rupture		
Type of spill		Crude Oil		
Color code information (from CG)		Sheen		
Radius of slick		30-40 m		
Tail		15 m		
Volume		175 cubic mete	ег арргох.	
Quantity		150 tones		
Weather		N'Ely x 5-6 knots.		
Tide / current		Ebbing / 0.8 to 1.2 knots.		
Density		0.2 to 0.86 kg/m3 approx.		
Layer thickness		0.02 mm approx.		
Air / Sea temp.		22 deg C /27 deg C		
Predicted slick movement		S'Wly		
Size of spill classification (Tier 1, 2 or	3)	Tier 1		

ADANI PORTS AND SPECIAL ECONOMIC ZONE LTD. MUNDRA OIL SPILL CONTINGENCY RESPONSE PLAN

ANNEXURE 2 POLREP

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

SN. Parameter		Data		
1.	Identity of the informant	Tug Dol 11		
2.	Time of information receipt	0900 hrs.		
3.	Source of Spill	IOCL SPM		
4.	Cause of Spill	Floating Hose rupture		
5.	Type of oil	Crude Oil		
6.	Colour code information	Sheen		
7.	Configuration	-		
8.	Radius	30-40 m		
9.	Tail	15 m		
10.	Volume	175 cubic meter approx.		
11.	Quantity	150 tones		
12.	Weathered or Fresh	Fresh		
13.	Density	0.2 to 0.86 kg/m3 approx.		
14.	Viscosity	53.36 CST@25 deg centigrade		
15.	Wind	N'Ely x 5-6 knots.		
16.	Wave Height	0.1 to 0.2 m		
17.	Current	0.8 to 1.2 knots.		
18.	Layer Thickness	0.2 to 0.4 mm approx.		
19.	Ambient air temperature	22 deg C		
20.	Ambient sea temperature	27 deg C		
21.	Predicted slick movement	S'Wly		
22.	Confirm Classification of spill size	Tier 1		

Drill Log Sheet

Page Number: 1 of 1	Date : 19 -01-2024
Name: Vikram Pratap Singh	Position: Radio Officer
Contact Number : 9825228673	Signature:

Activity Timeline:

- 0900 hrs.: Tug Victor reported oil spill at IOCL SPM to Tug Dol 11.
- 0901 hrs.: Tug Dol 11 immediately reported to Marine Control and Diving Supervisor.
- 0901 hrs.: Marine Control informed all concerned departments including IOCL.
- 0902 hrs.: Tug Dol 11 proceeded to IOCL SPM.
- 0905 hrs.: Tug Dol 11 reached IOCL SPM and all SPM valves closed by diving team.
- 0906 hrs.: IOCL SPM team observed oil spillage from floating hose of IOCL SPM.
- 0906 hrs.: Tug Dol 11 commenced boom deployment and same time informed to control.
- 0907 hrs.: Tug Dol 11 requested Marine Control for Barge BB-10 for storage of recovered oil.
- 0907 hrs.: Marine Control deployed Barge BB-10 along with Tug Dol 2 to IOCL SPM.
- 0908 hrs.: Barge BB-10 underway with Tug Dol 2.
- O910 hrs.: Marine Control informed to all vessels at anchor regarding oil spill near IOCL SPM area. The control room requested all underway vessels to pass 5 miles from IOCL SPM. Unberthing operations suspended.
- 0910 hrs.: Capt. Girish Chandra informed Commandant Konark Sharma ICGS Mundra about the incident through phone.
- 0912 hrs.: Tug Dol 11 requested to keep one tug stand by with additional boom at short notice.
- 0914 hrs.: Marine Control informed Tug Dol 10 & 15 to standby with OSD.
- 0915 hrs.: Informed commercial team (Mr. Jagdish Rabadia) and environment cell (Mr. Radhe Shyam Singh) by Mr. Sudhakar Singh.
- 0921 hrs.: Tug Dol 11 reported 150m boom deployed and continued to deploy remaining 100 meters.

- O925 hrs.: Marine Control informed jetty team to be stand by with crew for mooring the Barge BB-10 at B-12 berth. Jetty supervisor also informed to deploy one hydra for loading/unloading of OSR equipment at SPM Store and jetty.
- $0932 \text{ hrs.: Dol } 11 \text{ informed that spill is spread in an area of around } 30-40 \text{ m}^2.$
- 0933 hrs.: Tug Dol 11 reported 250 m boom deployment completed and commenced J-formation.
- 0931 hrs.: Mr. Mahendra Singh Solanki from Corporate affairs informed DM Bhuj office about the incident.
- 0936 hrs.: Mr. Sudhakar Singh informed HMEL team Mr. Ashok Tiwari about the incident through phone.
- 0936 hrs.: Initial intimation mail sent to GMB/MMD Kandla/Coast Guard Station/MRCC.
- 0940 hrs.: Patrolling boat Dol 19 reported underway with Capt. Girish Chandra and proceeding to IOCL SPM.
- 0944 hrs.: Tug Dol 11 reported J-formation completed, and oil containment is in progress and commenced skimmer deployment.
- 0949 hrs.: Barge BB-10 arrived at IOCL SPM with Tug Dol 2.
- 0950 hrs.: Skimmer lowered and commenced recovering of spilled oil to floating tank.
- 0950 hrs. Liquid team informed commercial department for 6 no.

 tanker/bowser for transportation of recovered oil from jetty to OWS

 unit. The team also informed to keep motor pump and other
 equipment stand by at berth B-12.
- 0956 hrs.: Barge BB-10 secured P/S of Tug Dol 11 and commenced transferring of oil in barge BB-10.
- 0959 hrs.: Tug Dol 11 reported approx. 10 T of recovered oil loaded in barge BB-10.
- 1000 hrs.: HMEL informed readiness for assisting to IOCL team for same.
- 1003 hrs.: Marine Control informed Tug Dol 17 with second set of booms to proceed for IOCL SPM.
- 1010 hrs.: Tug Dol 17 underway with second set of booms.
- 1020 hrs.: Liquid team informed Marine Control that motor pump and other equipment is standby at berth B-12.
- 1025 hrs.: Liquid team informed Marine Control that 6 no. of Tanker/bowser arrived and standby at berth B-12.
- 1046 hrs.: Joint Inspection team (ICG and OISD) boarded on Tug Dol 11.

1100 hrs.: Recovery of spilled oil completed (150 T).

1100 hrs.: Drill called off and same time informed all concern.

1101 hrs.: BB-10 cast off and proceed to B-12 berth for transfer of oil for disposal.

1102 hrs.: Boom recovery started.

1107 hrs.: Area assessed by diving team for recovered oil and confirmed all clear.

1108 hrs.: Informed environment team for water sampling of spillage area.

1124 hrs.: Environment team informed that area is clear of oil and no harm for sea.

1125 hrs.: BB-10 arrived at B-12 berth.

1130 hrs.: Liquid team started loading oil from BB-10 to tankers for disposal.

1145 hrs.: Tanker loaded with oil departed from B12 for disposal of oil at Oil Water Separator unit.

1202 hrs.: Tanker reached Oil Water Separator unit.

1225 hrs.: Recovered oil transfer from tanker to OWS unit completed.

1230 hrs.: Environment team informed that GPCB approved recycler has executed disposal.

Personnel & Boats Participated in Drill

Offshore

- 1. Capt. Hemant Dhruv
- 2. Capt. Girish Chandra
- 3. Capt. Peeyush Suwalka
- 4. Mr. Yogesh Nandaniya
- 5. Mr. Ramdas Pawale
- 6. Mr. Upinder Samkaria
- 7. Mr. Shashikant Padave
- 8. Mr. Santosh Rasam
- 9. Mr. Vishwanath Chauhan
- 10. Mr. Dharamveer Yadav
- 11. Members from Sea Care
- 12. Crew of Tug Dolphin 11
- 13. Crew of Tug Victor
- 14. Crew of Boat Al Dariya
- 15. Tug Dol 2 and BB10
- 16. ICG Mundra 04
- 17. Mr. Bhagwat Swaroop Sharma- Head Environment
- 18. Mr. Radheshyam Singh-Environment
- 19. Mr. Mayur Kasundra Liquid Team

Onshore:

- 1. Capt. Sachin Srivastava
- 2. Sudhakar Singh
- 3. Mr. Chandrashekhar Kumar
- 4. Mr. Vikram Pratap Singh
- 5. Mr. Rupesh Pandey
- 6. Mr. Anish
- 7. Mr. Arshdeep

Drill Performance Monitoring:

SI. No	Activity	Time Taken
1.	Time taken to shift OSR	NA / 200-meter Fence boom and
	equipment from SPM Store to	1- skimmer is kept 24 x 7 on Tug
	load on DSV tugs	Dol 11.
2.	Time taken for Tug cast off from	NA
	time information given.	
3.	Time taken from tug cast off to	NA
	Reach at Location.	
4.	Time taken for deploying 250-	27 min.
	meter boom and skimmer after	
	reaching at site.	
5	Time taken for J/U formation and	11 min.
	deployment of skimmer.	

Observations:

SR. NO.	POINTS	ACTION TAKEN	TARGET DATE	RESPONSIBILITY	REMARKS
1	All discharge pipes of skimmer should be connectable in advance.	Point discussed with team during drill de- briefing.		NA	

Drill snap - 19 Jan 2024

Date 19 Jan 2024 OSR Drill at IOCL SPM

Pre Drill Briefing



Boom laying from Dol 11



J formtion making in progress



Skimmer Operations



Inspection by ICG and OISD team



Discussion with ICG and APSEZ team



Joint Inspection (ICG and OISD) and APSEZL Mundra team on DSV Dolphin 11





APSEZL Mundra OSR Team on Tug Dolphin -11



Annexure – 9



Updated Organogram of Environment Management Cell, APSEZ, Mundra

