

DEENDAYAL PORT AUTHORITY
(Erstwhile: DEENDAYAL PORT TRUST)

Tel(O) : (02836) 220038,
Fax : (02836) 220050
E Mail : kptdesignsection@gmail.com
kptemc@gmail.com
Website: www.deendayalport.gov.in



Administrative Office Building
Post Box NO. 50
GANDHIDHAM (Kutch).
Gujarat: 370 201.
Fax: (02836) 220050
Ph.: (02836) 220038

EG/WK/4751/Part (Ro-Pax)/ 71

Dated: 30/09/2025

To,
The Deputy Director General of Forests (C),
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office, Gandhinagar,
A wing- 407 & 409, Aryan Bhawan,
Near CH-3 Circle,
Sector 10 A, Gandhinagar - 382 010.

Sub: Bifurcation (600 mt waterfront out of total 4800 mt) of Environmental and CRZ clearance issued to M/s Essar Bulk Terminal Limited for Expansion of Port Facility at Hazira, Surat, Gujarat - **Submission of Compliance Report of Stipulated Conditions req.**

Ref.: 1. Bifurcation (600 mt water front out of total 4800 mt) of Environmental and CRZ Clearance issued to M/s Essar Bulk Terminal Limited for expansion of port facility at Hazira, Surat, Gujarat by the MoEF&CC, GoI vide letter F. No. 11-46/2011 - IA III dated 4/4/2022.
2. Environmental and CRZ Clearance for the expansion of port facility at Hazira, Surat, Gujarat by M/s Essar Bulk Terminal Ltd by the MoEF&CC, GoI vide letter F. No. 11-46/2011 - IA III dated 06/05/2014
3. DPT Letter no. EG/WK/4751/Part (Ro-Pax)/156 dated 05/08/2022
4. DPA letter no. EG/WK//4751/Part (Ro-Pax)/347 dated 07/08/2023
5. DPA letter no. EG/WK//4751/Part (Ro-Pax)/35 dated 18/03/2024
6. DPA letter no. EG/WK//4751/Part (Ro-Pax)/180 dated 02/12/2024
7. DPA letter no. EG/WK//4751/Part (Ro-Pax)/64 dated 08/05/2025

Sir,

It is requested to kindly refer above cited reference for the said subject.

In this regard, it is to state that, the MoEF&CC, GoI, New Delhi vide above mentioned letter dated 4/4/2022 cited at Reference 1 had issued Bifurcation of Environmental and CRZ Clearance accorded to M/s Essar Bulk Terminal Limited vide letter of even number dated 6th May, 2014 in the name of Deendayal Port Trust for **"Development of 600 m Waterfront and 24 ha. Back up Area at Hazira, Surat by Deendayal Port Trust (Now: Deendayal Port Authority)"**.

In the said letter dated 4/4/2022, the MoEF&CC, GoI under Para 8 has mentioned that, Deendayal Port Authority shall comply with all the specific & general conditions stipulated in the EC & CRZ Clearance of even no. dated 6th May, 2014 cited at Reference 2.

.....Cont.....

Accordingly, we are submitting herewith compliance report in the PARIVESH 2 PORTAL for the period October, 2024 to March, 2025. Further we are also submitting the Monitoring Report in Data Sheet.

This is for your kind information and record please

This has the approval of Chief Engineer, Deendayal Port Authority.

Encl.: As above

Yours faithfully,



XEN (EMC)
Deendayal Port Authority

Annexure –I

Half Yearly Compliance Report**2025****01 Jun(01 Oct - 31 Mar)****Acknowledgement**

Proposal Name	Bifurcation (600 mt waterfront out of total 4800 mt) of Environmental and CRZ Clearance issued to M/s ESSAR Bulk Terminal Limited for expansion of Port facility at Hazira, Surat, Gujarat		
Name of Entity / Corporate Office	Deendayal Port Authority		
Village(s)	N/A		
District	SURAT		
Proposal No.	IA/GJ/MIS/167825/2020	Category	INFRA-2
Plot / Survey / Khasra No.	N/A	Sub-District	N/A
State	GUJARAT	Entity's PAN	*****EQUIRED
MoEF File No.	F. No. 11-46/2011-IA.III	Entity name as per PAN	Deendayal Port Authority

Compliance Reporting Details**Reporting Year** 2025**Remarks (if any)****Reporting Period** 01 Jun(01 Oct - 31 Mar)**Details of Production and Project Area****Name of Entity / Corporate Office** Deendayal Port Authority

	Project Area as per EC Granted	Actual Project Area in Possession
Private	0	0
Revenue Land	0	0
Forest	0	0
Others	24	24
Total	24	24

Production Capacity

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
--------	--------------	-------	------------	----------	----------------------	---------------------

Conditions**Specific Conditions**

Sr.No.	Condition Type	Condition Details
1	PUBLIC HEARING	The responses/commitments made during public hearing shall be

		complied with letter and spirit.
PPs Submission: Complied N/A.		Date: 09/08/2025
2	Statutory compliance	CSR activities shall cover the villages within 10 km radius. CSR for fishermen shall be carried out as committed.
PPs Submission: Complied As per the CSR Guidelines issued from time to time by the MoPSW, GoI, DPA since the year 2011-12 had carried out various CSR activities (Annexure 4).		Date: 09/08/2025
3	Statutory compliance	Project Proponent shall appoint a consultant to look after and advice on the transportation of dangerous chemicals. Sensors for early detection of leakage of propylene and butadiene shall be provided at berths along with water sprinklers.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility at Hazira which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025
4	Marine/Coastal	Natural drainage system shall be maintained so that there is free flow to the existing mangroves. Mangrove plantation in 500 ha of land in consultation with GEC/Forests Department, Government of Gujarat.
PPs Submission: Complied The GMB had allotted land of 24 Hectares to Deendayal Port Authority devoid of Mangroves. However, due care is being taken so that Natural Drainage System will be maintained. As per the directions of the GCZMA and MoEFCC, GoI, to date, DPA has undertaken a Mangrove Plantation in an area of 1600 Hectares since the year 2005. The details have already been communicated with the earlier compliance reports submitted. Further, DPA has assigned work to M/s GUIDE, Bhuj vide work order dated 10/06/2024 for 'Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority reg.' The work is completed and the final report is attached herewith as Annexure 2. For regular monitoring of mangroves, DPA engaged M/s GUIDE, Bhuj during the year 2017 and subsequently, vide work order dated 3/5/2021. The final report submitted by M/s GUIDE has already been communicated with the compliance report dated 05/08/2022. Further DPA has assigned work to M/s GUIDE, Bhuj vide work order dated 10/06/2024 for 'Monitoring of Mangrove Plantation 1600 Ha carried out by DPA' for the Period of 10/06/2024 to 09/06/2025. The work order has already been communicated with last compliance report dated 08/05/2025.		Date: 09/08/2025
5	Marine/Coastal	There shall be no ground water drawl within CRZ area
PPs Submission: Complied Point Noted for compliance.		Date: 09/08/2025
6	WASTE MANAGEMENT	Solid Waste Management shall be as per Municipal Solid (Management and Handling) Rules, 2000.
PPs Submission: Complied Point Noted for compliance.		Date: 09/08/2025
7	Statutory compliance	Consent for Establishment shall be obtained from Gujarat Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.
PPs Submission: Complied As directed in the Bifurcated EC and CRZ Clearance issued by the MoEFCC, GoI dated 4/4/2022,		Date:

	DPA also obtained Consent to Establish (CTE-55353) (after obtaining Environmental Clearance), vide dated 24/6/2022 (Copy - Annexure 1) from the Gujarat Pollution Control Board (under Water Act 1974 and Air Act 1981) in the name of DPA for development of 600 m waterfront and 24 ha back up area.	09/08/2025
8	Statutory compliance	The Project Proponent shall get third party inspection carried out once in a year preferably by NEERI to ensure compliance of all the Environmental Clearance (EC) conditions.
PPs Submission: Agreed to Comply It is assured that third party will be engaged for inspection to ensure compliance of all the applicable EC conditions.		Date: 09/08/2025
9	GREENBELT	Green belt shall be provided all along stack yard and in the premises.
PPs Submission: Complied DPA had already developed required planation (area of about 7000 m2) within the Ro-Ro/Ro-Pax Terminal area.		Date: 09/08/2025
10	Risk Mitigation and Disaster Management	On site Emergency Management plan shall be put in place.
PPs Submission: Complied A copy of Disaster Management plan has already been communicated with the compliance report dated 05/08/2022.		Date: 09/08/2025
11	Statutory compliance	The port shall ensure that the ship under operation follows the MARPOL convention regarding discharge or spillage of any toxic, hazardous or polluting material like ballast water, oily water or sludge, sewage, garbage etc. The emission of NOx and SOx shall remain within the permissible limits.
PPs Submission: Complied Currently ferry is operated by ISPL. ISPL stated that, In Compliance. No ballast handling. Engine room Bilges and slopes are disposed ashore in certified reception facilities		Date: 08/09/2025
12	MISCELLANEOUS	It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.
PPs Submission: Complied Not Applicable. The Ro-Ro Ro-pax facility is under operation. The GMB had allotted 600 m water front and 24 Hectares land to Deendayal Port Authority.		Date: 09/08/2025
13	AIR QUALITY MONITORING AND PRESERVATION	The height of coal stack yard shall be at least 2 feet below the height of wind curtain.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025
14	Human Health Environment	A study to determine the reasons for increase in cancer patient in the vicinity shall be carried out.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025

15	Statutory compliance	A separate Environment Monitoring Cell shall be set up especially for this plant and details shall be submitted to the Ministry prior to the commencement of operation.
PPs Submission: Complied DPA is already having dedicated EMC. Further, DPA has also appointed expert agency for providing Environmental Experts from time to time. Recently, DPA appointed M/s Precitech Laboratories Pvt. Ltd., Vapi for three years vide work order dated 5/2/2021 (Copy of Work Order has already been communicated with the compliance report dated 05/08/2022). In addition, DPA has also appointed Manager (Environment) on contractual basis for a period of 3 years and further extendable for 2 years (Copy of the offer of appointment has already been communicated with the compliance report dated 05/08/2022).		Date: 09/08/2025
16	MISCELLANEOUS	The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.
PPs Submission: Complied The Ro-Ro Ro-pax facility is under operation.		Date: 09/08/2025
17	Marine/Coastal	Project Proponent shall ensure proper flushing/free flow of tidal water to the mangroves.
PPs Submission: Complied The GMB had allotted land of 24 Hectares to Deendayal Port Authority devoid of Mangroves. However, due care is being taken for proper flushing/free flow of tidal water to the mangroves in surrounding areas.		Date: 09/08/2025
18	Statutory compliance	Project Proponent shall submit once in 12 months the latest satellite imagery to MoEF and CC to ensure that mangroves are remains fully intact. Any shrinkage in mangrove area noticed either in the satellite imaginary or during site visit, shall be taken as violation.
PPs Submission: Complied N/A. The GMB had allotted land of 24 Hectares to Deendayal Port Authority devoid of Mangroves.		Date: 09/08/2025
19	Marine/Coastal	There shall be no encroachment of project activities in the mangrove area. The various referral distances/latitudes/ longitudes as indicated in the enclosed map (Annexure-II) shall be maintained for the conservation of this mangrove area within the port limit.
PPs Submission: Complied N/A. The GMB had allotted land of 24 Hectares to Deendayal Port Authority devoid of Mangroves.		Date: 09/08/2025
20	AIR QUALITY MONITORING AND PRESERVATION	Stock yard on northern side (Hazira Village side) shall be provided with bund and wind screen of atleast 15 mt height with well-designed water spray fogging arrangement along with three rows of trees in canopy formation.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025
21	AIR QUALITY MONITORING AND PRESERVATION	The existing coal conveyor from berth to stock yard shall be closed with cover since the present water spray appears to be inadequate.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for		Date:

	trailer, trucks, cars etc.	09/08/2025
22	AIR QUALITY MONITORING AND PRESERVATION	The transportation in the proposed facility shall be in closed conveyor only.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025
23	Statutory compliance	Hazardous chemicals except the permissible Petroleum products shall not be stored within CRZ area. All the construction, storage shall be as per the CRZ Notification, 2011.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025
24	Statutory compliance	Oil spill Contingency plan shall be put in place.
PPs Submission: Complied No oil handling is envisaged in proposed RoRo/RoPax development. Oil spill can happen only during bunkering and collision of vessels. Hence, the oil spill scenario will be considered as Tier 1 (less than 700 tons). RoRo/RoPax operation is proposed and oil spill can occur only if there is any accident.		Date: 09/08/2025
25	Statutory compliance	All the recommendation of the EMP, Risk Assessment and DMP shall be complied with letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO.
PPs Submission: Complied Point Noted for compliance. A copy of EMP prepared for the Development of Ro-Ro/Ro-Pax Facility at Hazira by Deendayal Port Authority and copy of Risk assessment and disaster management plan already been communicated with the compliance report dated 05/08/2022.		Date: 09/08/2025
26	WASTE MANAGEMENT	The hazardous wastes generated shall be collected and disposed as per rules, disposable wastes shall be sent to authorized TSDF. MoU in this regard shall be submitted to the Ro, MoEF along with the six monthly monitoring report.
PPs Submission: Complied Currently ferry is operated by ISPL. ISPL stated that, In Compliance. Hazardous waste: Nil Handling Ships galley refuse sent ashore to reception facilities.		Date: 08/09/2025
27	WASTE MANAGEMENT	Controlled cutter suction dredging shall be used along with the enclosure to contain the turbidity.
PPs Submission: Complied Point noted for compliance.		Date: 09/08/2025
28	Statutory compliance	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.
PPs Submission: Complied		Date:

The allocation made under the scheme of 'Environmental Services and Clearance thereof other related Expenditure' during RBE 2024-2025 is Rs. 585 Lakhs.		09/08/2025
29	Marine/Coastal	There shall be no disposal of wastes in to the coastal areas.
PPs Submission: Complied It is assured that no disposal of wastes will be made in to the coastal areas.		Date: 09/08/2025
30	Statutory compliance	All the conditions/recommendations stipulated by Gujarat Coastal Zone Management Authority (GCZMA) No.ENV-10- 2011-877-E dated 01.06.2013 shall be complied with.
PPs Submission: Complied The compliance of the conditions/recommendations stipulated by GCZMA vide letter dated 01/06/2013 applicable to this project is attached herewith as Annexure 3.		Date: 09/08/2025
31	Statutory compliance	Hydrocarbon monitors with provision for alarms set at specific concentrations shall be installed at strategic locations on the berth and around storage tanks as per ISGOTT and OISD.
PPs Submission: Complied N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.		Date: 09/08/2025
32	WASTE MANAGEMENT	The dredging materials shall be utilized for reclamation and excess shall be disposed at the site identified by CWPRS.
PPs Submission: Complied No dredging carried out during this period		Date: 08/09/2025
33	Marine/Coastal	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
PPs Submission: Complied Currently, the Ro-Ro Ro-pax facility is under operation.		Date: 09/08/2025
34	WASTE MANAGEMENT	Sewage shall be treated and the Treatment Facility shall be provided in accordance with the Coastal Regulation Zone Notification, 2011. The disposal of treated water shall confirm the regulation of State Pollution Control Board.
PPs Submission: Complied Septic Tanks has already been provided for treatment of sewage.		Date: 09/08/2025
35	Statutory compliance	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.
PPs Submission: Complied DPA is already having dedicated EMC. Further, DPA has also appointed expert agency for providing Environmental Experts from time to time. Recently, DPA appointed M/s Precitech Laboratories Pvt. Ltd., Vapi for three years vide work order dated 5/2/2021 (Copy of Work Order has already been communicated with the compliance report dated 05/08/2022). In addition, DPA has also appointed Manager (Environment) on contractual basis for a period of 3 years and further		Date: 09/08/2025

extendable for 2 years (Copy of the offer of the appointment has already been communicated with the compliance report dated 05/08/2022).

General Conditions

Sr.No.	Condition Type	Condition Details
1	MISCELLANEOUS	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
PPs Submission: Complied Point Noted.		Date: 09/08/2025
2	Statutory compliance	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.
PPs Submission: Complied DPA had already uploaded compliance report submitted dated 5/8/2022 to the Integrated Regional Office, MoEFCC, GoI, Gandhinagar. However, for subsequent period also, it is assured that w.r.t. subject project, the status of compliance to the various stipulated environmental conditions will be uploaded by DPA in website www.deendayalport.gov.in.		Date: 09/08/2025
3	Statutory compliance	Ministry of Environment and Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
PPs Submission: Complied Point Noted.		Date: 09/08/2025
4	Statutory compliance	A copy of the clearance letter shall be marked to concern Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.
PPs Submission: Complied N/A.		Date: 09/08/2025
5	Statutory compliance	Gujarat Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.
PPs Submission: Complied -		Date: 09/08/2025
6	MISCELLANEOUS	This clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.
PPs Submission: Complied Point Noted.		Date: 09/08/2025
7	WATER QUALITY MONITORING AND	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.

	PRESERVATION	
PPs Submission: Complied Currently, the Ro-Ro Ro-pax facility is under operation.		Date: 09/08/2025
8	Statutory compliance	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
PPs Submission: Complied The Board of Deendayal Port Authority vide resolution no. 101 in its meeting held on 16/1/2021 had accorded approval to the project (Copy of Board Resolution has already been communicated with the compliance report dated 05/08/2022). Accordingly, DPA issued work order to the contractor M/s Marymatha Infrastructure Pvt. Ltd., JV M/s BMS Projects Pvt. Ltd., Cochin vide letter no. CN/WK/1600/Pre-Bid/10 dated 15/4/2021 (Copy of work order has already been communicated with the compliance report dated 05/08/2022.). Currently, the Ro-Ro Ro-pax facility is under operation.		Date: 09/08/2025
9	Statutory compliance	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.
PPs Submission: Complied Point Noted.		Date: 09/08/2025
10	Statutory compliance	A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.
PPs Submission: Complied DPA has assigned the work of monthly environmental monitoring to GEMI, Gandhinagar for a period of 3 years vide work order dated 18/04/2023. The work is in progress, and the latest monthly monitoring report submitted by GEMI, Gandhinagar, is attached herewith as Annexure 5.		Date: 30/09/2025
11	MISCELLANEOUS	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
PPs Submission: Complied Point Noted.		Date: 09/08/2025
12	Statutory compliance	Full support shall be extended to the officers of this Ministry/ Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.
PPs Submission: Complied It is assured that full support will be extended to the officers of this Ministry/ Regional Office at Bhopal/Gandhinagar during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.		Date: 09/08/2025
13	Statutory compliance	In the event of a change in project profile or change in the

		implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
PPs Submission: Complied Point Noted.		Date: 09/08/2025
14	Statutory compliance	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
PPs Submission: Complied Point Noted for compliance.		Date: 09/08/2025
15	Statutory compliance	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the Gujarat Pollution Control Board and may also be seen in the website of the Ministry.
PPs Submission: Complied Deendayal Port Authority had already given advertisement in two newspapers i.e. GUJARAT SAMACHAR (Surat Edition (In Gujarati)) dated 07/04/2022 and THE TIMES OF INDIA (Surat Edition (In English)) dated 08/04/2022, w.r.t. bifurcation of EC and CRZ Clearance accorded by the MoEFCC, GoI dated 4/4/2022. The copies of the above advertisement given had already been informed to the integrated Regional Office, MoEFCC, GoI, Gandhinagar vide letter dated 23/4/2022 (Copy has already been communicated with the compliance report dated 05/08/2022)		Date: 09/08/2025
16	Statutory compliance	The proponent shall upload the status of compliance of the stipulated Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF and CC, the respective Zonal Office of CPCB and the SPCB.
PPs Submission: Complied The status of compliance to the various stipulated environmental conditions are being uploaded by DPA in website www.deendayalport.gov.in (DPA had already uploaded compliance report submitted dated 5/8/2022 to the Integrated Regional Office, MoEFCC, GoI, Gandhinagar) and will also be updated the same periodically. Further, the same will be sent to the Regional Office, MoEFCC, Gandhinagar and to the CPCB, Vadodara and GPCB, Gandhinagar.		Date: 09/08/2025
17	Statutory compliance	The environmental statement for each financial year ending 31" March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of Clearance conditions and shall also be sent to the respective Regional Office of MoEF and CC by e-mail.
PPs Submission: Complied Point noted. The Ro-Ro Ro-pax facility is under operation. As per bifurcated EC and CRZ Clearance dated 4/4/2022 issued by the MoEFCC, GoI, DPA has obtained CCA (PCB Id: 88242) from GPCB vide Order dated 10/07/2023 with validity up to 26/07/2027 (Copy - Annexure 6)		Date: 09/08/2025
18	Statutory compliance	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban

		Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.
PPs Submission: Complied A copy of Bifurcation of EC and CRZ Clearance accorded by the MoEFCC, GoI dated 4/4/2022 had already been uploaded in the website of DPA i.e. www.deendayalport.gov.in.		Date: 09/08/2025
19	Statutory compliance	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF and CC, the respective Zonal Office of CPCB and the SPCB
PPs Submission: Complied DPA had already uploaded compliance report submitted dated 05/08/2022 to the Integrated Regional Office, MoEFCC, GoI, Gandhinagar. However, for subsequent period also, it is assured that w.r.t. subject project, six monthly reports on the status of compliance to the various stipulated Clearance conditions including results of monitoring data will be submitted to the Regional Office, MoEFCC, Gandhinagar and to the CPCB, Vadodara and GPCB, Gandhinagar.		Date: 09/08/2025
Visit Remarks		
Last Site Visit Report Date:		N/A
Additional Remarks:		
Note: This acknowledgement is as per the details submitted by project proponent. In no way is this document to be considered as conclusion on any action on the compliance of the project. This is strictly for the project proponent's reference purpose.		

ANNEXURE- 1



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382010

Phone : (079) 23222425

(079) 23222152

Fax : (079) 23232156

Website : www.gpcb.gov.in

Application For CTE after EC

CTE-55353

File No : GPCB/ (PCB ID. - 88242)

To,

M/s. Deendayal Port Authority.

, Essar Bulk Terminal Ltd, Adani Hazira Port Rd, Hazira Gam, Suvali, Hazira, Gujarat
394270,

City : Hazira ,

Dist : Surat ,

Taluka : Chorasi

Sub: Consent to Establish (After obtaining Environment Clearance) under Section 25 of Water Act 1974 and Section 21 of Air Act 1981.

Ref: (1) Your online application No. 257450 dated 12/05/2022

(1) Environment Clearance issued by Central Authority vide their letter no. F.No.11-46/2011-IA.III Dated 04/04/2022

Sir,

Without prejudice to the powers of this Board under the Water (Prevention and Control of Pollution) Act-1974, the Air Act-1981 and the Environment (Protection) Act-1986 and without reducing your responsibilities under the said Acts in any way, this is to inform you that this Board grants **Consent to Establish (After obtaining Environment Clearance) under Section 25 of Water Act 1974 and Section 21 of Air Act 1981** for manufacturing of products as mentioned into the Environment Clearance (EC) granted vide letter under reference no (2) above.

Consent To Establish Is Granted Subject To The Following Conditions: -

- 1) The validity period of this CTE shall be Seven Years from the issue of this order.
- 2) Applicant shall strictly comply with all conditions stipulated by competent authority in the order of Environment Clearance issued vide letter under reference No. : 2 above.
- 3) The applicant shall however , not without the prior concern of the Board. Bring into use any new or altered outlet for the discharge of effluent or gaseous emission or sewage waste from the proposed industrial plant. The applicant is required to make applications to this Board for this purpose in the prescribed forms under the provisions of the water Act - 1974, the Air - 1981 and the Environment (Protection) Act - 1986.



For and on behalf of
Gujarat Pollution Control Board

J.D.OZA
ROH Head - Surat

- This order is issued to , Essar Bulk Terminal Ltd, Adani Hazira Port Rd, Hazira Gam, Suvali, Hazira, Gujarat 394270, City : Hazira, Dist : Surat, Taluka : Chorasi (88242) for CTE amendment after obtaining EC.

ANNEXURE- 2

FINAL REPORT
for the Project entitled
Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority, Kandla
(As per EC & CRZ Clearance Dt.01.01.2024. Annexure-B, Specific condition No.7)

DPA Work order No. EG/WK/4751/Part (Revamping-EC onwards)/69. Dt. 10.06.2024



Submitted by



Gujarat Institute of Desert Ecology
Mundra Road, Bhuj-370 001
Dist: Kachchh, Gujarat, India

Submitted to



Deendayal Port Authority
Gandhidham- 370201
Dist: Kachchh, Gujarat-, India

February
2025



Gujarat Institute of Desert Ecology

Certificate

This is state that the Final Report for project entitled "Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority, Kandla" has been prepared in line with the Work order issued by the Deendayal Port Authority Vide: Ref. No. EG/WK/4751/Part (Revamping-EC onwards)/69. Dt.10.06.2024. In order to comply with the stipulated condition of the EC & CRZ Clearance dated 1/1/2024 read with CRZ Recommendation dated 25/8/2022 - Condition no.7.

The work order is for a period of Nine months (10.06.2024 - 09.03.2025) for the above-mentioned study.

Authorized Signatory

DIRECTOR

Gujarat Institute of Desert Ecology
Bhuj - Kachchh.



Project Team

Project Coordinator: Dr. V. Vijay Kumar, Director

Project Personnel

Principal Investigator

Dr. B. Balaji Prasath, Senior Scientist

Co-Investigator

Dr. Kapilkumar Ingle, Project Scientist-II

Team Members

Dr. L. Prabhadevi, Advisor

Mr. Dayesh Parmar, Senior Scientific Officer

Mr. Ketan Kumar Yogi, Junior Research Fellow

Contents

1. Background of the study	1
1.1. Mangrove status in Gujarat and Gulf of Kachchh	2
1.2. Rationale of the project	3
2. Objectives	4
3. Study Area	4
4. Methodology	6
4.1. Field Studies	6
4.1.1. Site Overview:	6
4.1.2. Geographical Patterns:	6
4.1.3. Landscape Assessment:	6
4.2. Plantation Techniques	6
4.2.1. Raised bed method (Otila method)	6
4.2.2. Transplantation of nursery raised saplings (Poly bag method)	7
5. Site visit	8
5.1. On-site observations	8
5.2. Analysis of water and sediment samples	9
5.2.1. Water analysis	9
5.2.2. Sediment/ soil analysis	9
6. Summary of the Report	34
7. Future Considerations for Mangrove Plantation	38
7.1. Carry out regular monitoring of mangrove plantation	38
7.2. Regular gap filling to be done	38
8. References	38

Snapshot of the Project," Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority, Kandla"

S.No	Components of the Study	Remarks
1	Deendayal Port letter sanctioning the project	EG/WK/4751/Part (Revamping-EC onwards)/69, dated 10.06.2024
2	Duration of the project	Nine months (10.06.2024 - 09.03.2025)
3.	Location of Mangrove Plantation Site	The location finalized for mangrove plantation is shown in Figure 1. Suitable site was selected based on water and sediment quality, intertidal fauna, and propagules.
4.	Total Area	50 Hectares
5.	EC & CRZ Clearance Reference	As per EC & CRZ Clearance Dt. 01.01.2024, Annexure-B, Specific condition No. 7
6	Field Studies	
6a	Site Overview	Inspection to understand site conditions and potential risks (e.g., grazing).
6b	Geographical Patterns	Study existing mangrove species to determine their distribution and identify suitable planting locations.
6c	Landscape Assessment	The stability of the root system of existing mangroves were be examined.
7	Plantation Techniques	
7a	Raised Bed Method (Otl Method)	Create earthen mounts to plant 15-30 seeds; suitable for areas with low to moderate water currents.
7b	Transplantation of Nursery Raised Saplings	Grow saplings in polythene bags; nature for 3-4 months before transplanting; higher success rate

1. Background of the study

Mangroves are among the most productive ecosystems, providing various ecosystem services and resources to both the ocean environment and humankind. This unique ecosystem occurs in the tropics and subtropics, where land meets the oceans, often bordering estuaries and backwaters. Mangrove forests have the remarkable ability to rise upward in place or move landward or seaward in response to sea level changes (Woodroffe *et al.* 2016). Mangroves typically grow on wet, muddy substrates with minimal water fluctuations, specifically in the mudflat regions of tropical and subtropical areas. These are dense forests of trees and shrubs that are tolerant to salt, usually flourishing in tidal areas. The importance derived from these forests is critical, including coastal protection, biodiversity conservation, and climate change mitigation. All mangroves produce fertilizer from rotting litter fall and root growth deceiving ambient water sediment. Mangrove ecosystems support various plant and animal species, breeding, nursery and feeding grounds for numerous marine and terrestrial organisms. Despite their ecological importance, mangrove forests face different threats such as deforestation, pollution, and climate change. Specific measures have been taken towards conserving these valuable ecosystems including them into biosphere reserves and Ramsar sites.

According to the Forest Survey of India (FSI, 2019), the global mangrove cover is approximately 14.79 million hectares. Asia leads with 5.55 million hectares, followed by Africa with 3.24 million hectares, North and Central America with 2.57 million hectares, and South America with 2.13 million hectares. South Asia has the highest mangrove area, constituting about 6.8% of the world's total mangrove cover. Anthropogenic pressures have reduced global range of these forests to less than even half of their original total cover throughout the globe as mentioned by Ragavan *et al.* (2016) while Singh (2020) observed that almost 75% of the tropical coast has been taken up by mangrove forests. India's mangrove ecosystems are incredibly important, covering around 4,992 km², which makes up about 0.15% of the country's total land area. Despite occupying a relatively small fraction of India's geographical area, mangroves are hotspots of biological activity, supporting a wide range of flora and fauna. They help in sequestering carbon, thus mitigating climate change effects. Major mangrove areas in India include the Sundarbans in West Bengal, which is the largest mangrove forest in the world.

The present study on "Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority, Kandla" is being conducted to comply with the specific conditions outlined in the EC & CRZ Clearance dated 01.01.2024 and CRZ Recommendation condition no. 7 as given in Annexure B.

1.1. Mangrove status in Gujarat and Gulf of Kachchh

Gujarat state has the longest coast (1650 km²) with largest coastal area (28,000 km²) under cover of mangroves. Gujarat mangrove ecosystem is the second largest after Sundarbans in West Bengal (ISFR 2019). Though contentious, around 15 mangrove species are reported from 13 coastal districts of Gujarat. Of these, the southern coast of Gulf of Kachchh and South Gujarat coast are important for mangrove diversity. The species *Avicennia marina* is the most populous along the Gujarat coast. Along the coastal stretch of Gulf of Kachchh (GoK) has the most considerable mangrove extent of 986 km² out of 1140 km². Kachchh district, constituting the northern coast (northern shore) of GoK alone has 798 km² of mangroves constituting 70% of the whole Gujarat mangroves. Waterlogged mud with low oxygen levels supports such vegetation in tropical and subtropical regions. In the Kachchh coast has various habitats such as expansive mudflats and small sandy beaches with different physico-chemical variables like extreme salinity temperature inundation factor. This vibrating ecosystem can allow the species to thrive and exhibit many adaptive modifications.

Biodiversity-oriented planting schemes aim to boost species richness through ongoing plantation and meticulous monitoring activities. Restoring mangrove ecosystems with dominant species like *Avicennia marina*, *Ceriops tagal*, and *Rhizophora mucronata* plays a crucial role in enhancing species diversity. By increasing the variety of plant species, these schemes not only create a more resilient and productive ecosystem but also help in providing essential resources and services to local populations, such as fish breeding habitats, wood, and other forest products. Continuous planting and monitoring ensure that these ecosystems remain healthy and sustainable, benefiting both the environment and the people living in coastal regions. Mangrove biodiversity seeks attention towards such spots on the Kachchh coast, which require supplementation of plant cover at selected sites. For instance, although successful efforts at restoring mangroves exist, the presence of *A. marina* alone in most parts corroborates the role of high salinity of the water because of limited fresh water influx annually. The arid coastal conditions lack of

continuous freshwater flow through the river inhibits the spread and growth of mangroves which are constantly exposed to tidal inundation. The plantation of mangroves as well as creation of awareness regarding the importance of mangrove and their ecosystem services are the crucial tasks to avoid such loss.

1.2. Rationale of the project

Deendayal Port Authority (DPA) has been one of India's largest ports in terms of cargo volume handled. Being located in Gujarat state on the northwest coast of India, the port is one of the biggest creek-based ports in India. In India, it is one among twelve major ports and situated at Gulf of Kachchh's tail end, Gujarat's western part. The greatest advantage of this location is a high semi-diurnal tidal range of about 6 to 7 meters which allows for sufficient draft in the dredged channels at the Port. DPA has been and still is undergoing continuous development and expansion particularly over recent times and is located in the creek environment encompassing mangroves (193.1 km²) and mudflats (312.9 km²).

Over the last seven decades, it should be noted that due to these vast resources available at its doorstep; the port authorities have a desire to conserve, protect and enhance these coastal habitats. The coastal belt in and around Kandla region is characterized by a network of creek systems and mudflats which are covered by sparse halophytic vegetation like scrubby to dense mangroves, creek water and salt encrusted land mass which forms the major land component. The surrounding environment in a radius of 10 km from the Port is mostly built-up areas consisting salt works, human habitations and Port related structures on west and north, creek system, mangrove formations and mudflats in the east and south.

Deendayal Port as part of the expansion of the infrastructure facility has significant movements of materials and people within the area and construction activities as well. Additionally, as part of the environmental policy intended to accomplish 50 ha mangrove plantation and the task is entrusted with the Gujarat institute of Desert ecology, Bhuj, Kachchh district. Similar efforts towards conserving and preserving mangrove cover in the prospective areas have been implemented by the Deendayal Port Authority (DPA) to maintain numerous unheralded ecological services by these marine plants. Total mangrove plantation till date by DPA through several implementing agencies at Sat Saida Bet, Nakti Creek and Kantiyajal.. To ensure the project follows the

most contemporary standards and practices in the field. In accordance with the CRZ Recommendation Condition, Mr. Nischal Joshi of the Gujarat Ecology Commission (GEC) was consulted for his expert opinion during the initial stages of the work.

2. Objectives

Within the overall objective of mangrove plantation in the DPA port limits the following activity wise objectives are envisaged.

- Assess the technical suitability of the proposed land for mangrove plantation
- Assess the physico-chemical properties of soil and nearby water and tidal pattern in the proposed plantation site.
- Formulate site specific plantation strategy and execute it with the adopting appropriate techniques.

3. Study Area

The location finalized for mangrove plantation is shown in Figure 1, as per their suitability including water and sediment quality characteristics, occurrence of intertidal fauna, availability of propagules, signs of natural regeneration etc. Further, based on the water quality characteristics reported elsewhere, the site is better choice for the plantation of mangrove species, *A. marina*. In the studies conducted earlier, the salinity levels of this area is reported to be ranging between 35 - 40 ppt which is suitable for the selected species. The pH of the pour water is recorded to be in the range of 6.0 - 8.5. In addition to the above said criteria, plantation in general should be established in Intertidal areas where a good tidal flushing is happening atleast 15 days in a month.



Figure.1 Proposed location for Mangrove plantation activities at DPA area

4. Methodology

4.1. Field Studies

4.1.1. Site Overview:

- The inspection were provide an overall understanding of the site, not only for the plantation but also for potential risks (such as camel or cattle grazing).
- Accessibility for post-plantation monitoring were be evaluated to ensure ease of assessment.

4.1.2. Geographical Patterns:

- Existing mangrove species in the area were be studied to understand their presence and distribution.
- Geographical patterns were be analyzed to identify suitable locations for planting mangroves.

4.1.3. Landscape Assessment:

- Rainwater runoff into the creeks and the influencing zones were be observed to assess its impact on the mangrove ecosystem.
- The stability of the root system of existing mangroves were be examined.
- Sources of freshwater within the area were also be considered.

4.2. Plantation Techniques

Three methods preferred for the sake of mangrove plantation which were be as follows in this study period:

4.2.1. Raised bed method (Osla method)

- This is popular method of mangrove plantation in Gujarat useful for a few species such as *A. marina* and provide better result compare to other methods.
- In this method, earthen mounts of a specific height were be made which support to plant 15 to 30 seeds/ propagules.
- This method is suitable in the areas where the current of water is low and moderate (Plate 1).

4.2.2. Transplantation of nursery raised saplings (Poly bag method).

- This technique has higher success rate unlike other methods and therefore, nursery of the various species is required to grow the saplings (Plate 2).
- This technique is time consuming and laborious compared to direct dibbling and raised bed methods.
- On the open intertidal mudflats, the saplings were be grown in polythene bags through sowing the matured seeds or propagules.
- The saplings were be nurtured 3-4 months before transplantation and after attaining a height 30-45 cm in polythene bags.
- Site specific conditions were determining the number of saplings to be transplanted, however, 2500 saplings per ha is generally followed.
- In some occasions also nursery raised saplings were be used for gap filling and thereby increasing the survival rate of the plants table1.

After being successfully raised in the nursery, saplings between 30 and 45 cm tall should be chosen at different times to be transplanted at the intended location. Below are the specifics of the plantation's sapling height and germination period (plate 3). A total of 46 nursery beds were established, with each bed containing 800 to 1,200 polybags. Each polybag is sown with 3 to 4 seeds, facilitating optimal seedling production (Figures 8-13). In addition, ota raised method, in each bed sown 5 – 6 seeds were raised in plantation site (Figures 15-17)

Table 1: Details of sapling for plantation

Species	Germination period (days)	Germination percentage	Height (cm)of saplings
<i>Avicennia marina</i>	6-10	70-80	30-45
<i>Rhizophora mucronata</i>	30-35	50-60	60

With these methods, the extra seeds were also spreaded in the plantation area where the older trees are present and generally the area where natural regeneration of seeds happens.

5. Site visit

Before the initiation of mangrove plantation activity, a through pre-project survey was conducted to examine the proposed plantation site. In this survey, the crucial technical factors like land elevation, tidal pattern, physical and chemical properties of soil and water (by laboratory analysis), access to the site, level of protection such as cattle grazing, human disturbance and other potential risks, etc. were observed. This survey helps to decide the suitability of site for mangrove plantation in DPA port limit.

5.1. On-site observations

- The indicators of regular flooding of site by tide water was observed in on-site visit. The site area was wet and with plenty of mud which is required for plantation.
- There was no presence of very hard, dried soil surface in the site was observed anywhere.
- The presence of a few natural mangrove (*A. marina*) trees was observed around and in the plantation site which denotes the site is suitable for the plantation.
- The presence of crab holes and mudskippers holes is the indicator that the soil of the site is soft and regularly get wet due to tides.
- The pneumatophores of nearby mangroves were found in the nearby area which indicate that there is no sediment deposition and buried pneumatophores in this area.
- Nearby area also shows the presence of halophytic/ salt marsh plants such as *Sesuvium* and also *Salicornia* nearby creek.
- The *Sesuvium* leaves were green and fresh, also not thicker which represent the good condition of the site.
- The presence of sub-creek system may ensure the availability of tidal water which were be primary need of the plantation.
- A few natural regeneration plants were also observed in the site.
- The presence of the jackal foot marks observed which denotes the overall area have a good ecosystem and where the jackal food (crabs) sources are available.

5.2. Analysis of water and sediment samples

5.2.1. Water analysis

The water samples were collected from the plantation site in pre-cleaned polyethene bottles and rinsed with sample water, and transported to the laboratory in icebox for further analysis such as pH analysis by pH meter, salinity was determined by refractometer. The pH of water sample was found 7.25 and salinity 18 psu. Although there is no domestic freshwater source, and tidal water salinity generally higher, due to the rainy season the salinity shows lower values. However, the lower salinity is also in favour of germination of mangrove seeds.

5.2.2. Sediment/ soil analysis

Sediment samples were collected by using a non-metallic plastic spatula from random locations; three from each transect to cover the whole study area. The collected samples were air-dried at room temperature (Jackson, 1958), homogenized using an agate mortar and pestle, sieved through a standard sieve of 2 mm mesh (Tandon, 2005). The particles with size less than 2mm were retained in pre cleaned plastic bottles for further analysis for various parameters. Total Organic Carbon (TOC), pH, texture, bulk density, etc were analysed.

Texture of sediment: The texture of soil/sediment is one of the key factors when choosing a site for plantation mangroves. Generally, mangrove ecosystems typically have the types of soils which includes muds or clay or sandy mud, etc. The texture of soil significantly impacts the survival and growth of mangroves. The presence of clay texture which makes soil muddy may expected to offer a stable base for mangrove roots to flourish under tidal conditions. Thus, evaluating the soil conditions at the plantation site is crucial before starting mangrove planting activities. Here we collected 3 samples, and all shows good amount of clay percentage in them which may be favourable for the plantation.

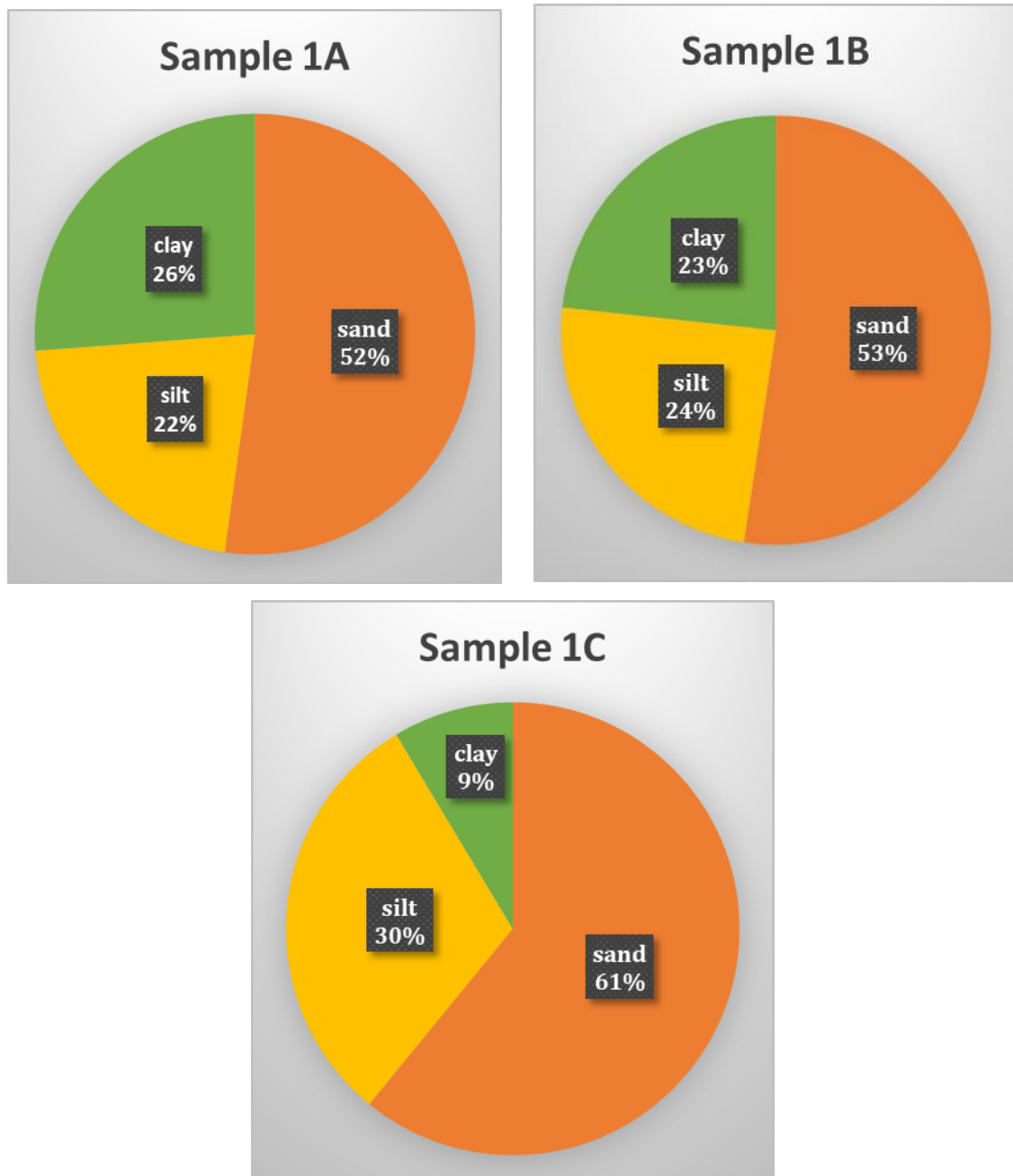


Figure 2: Sediment textural composition in the sampling sites

Bulk density of soil: It refers to the amount of soil organic matter within a given volume of soil. This property can vary significantly and is influenced by the soil's texture, structure, and organic matter content. Soils with high organic matter tend to have lower bulk density, while compacted soils exhibit higher bulk density.

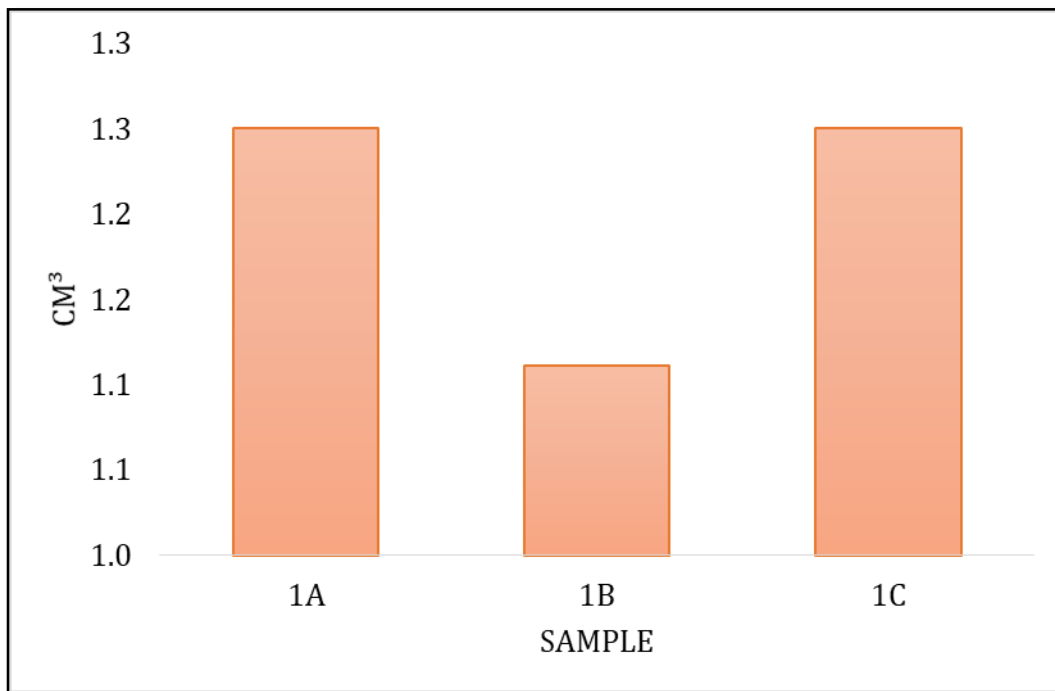


Figure 3: Bulk density of sediment samples

Total Organic Carbon: Organic carbon levels are influenced by living organisms, and the diversity of life forms in mudflats affects the total organic carbon (TOC) estimates. In all samples, the TOC percentage was ranged from 2.7 % to 2.85%

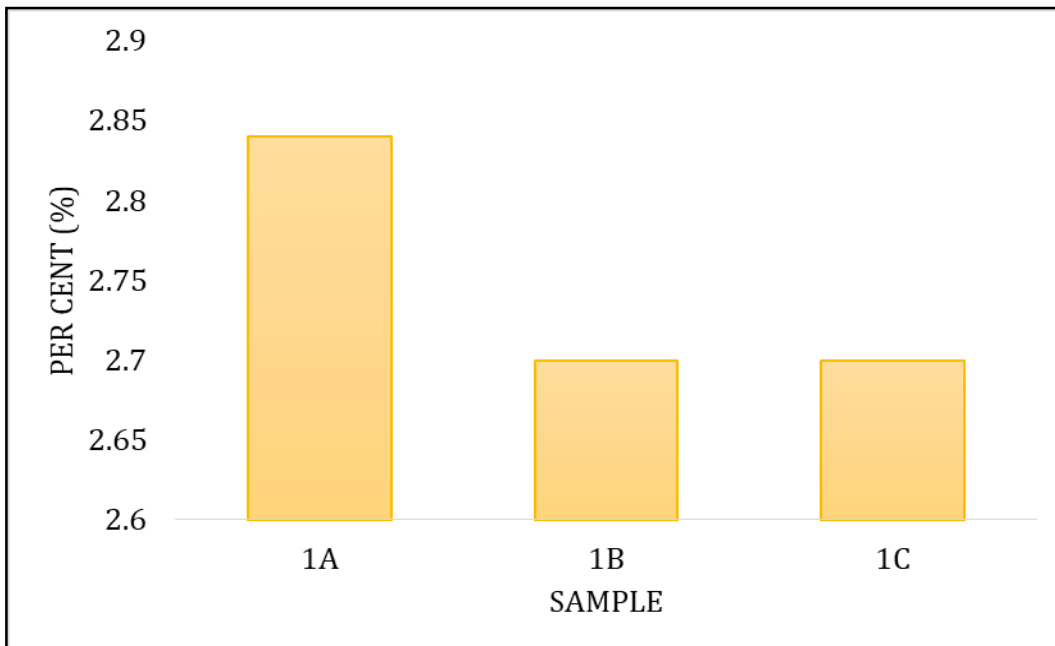


Figure 4: Total Organic Carbon content of sediment samples



Plate 1: Selection of suitable sites for mangrove plantation in DPA area based on sediment characteristics, tidal pattern, cattle grazing etc



Plate 2: Site identification, planning and field observation at mangrove plantation site on July 17th to 31st, 2024



Plate 3: Mangrove Seed Collection at Kandla on 1st to 07th August, 2024



Plate 4: Team involved in collection and separation of healthy mangrove seeds on 8th to 17th August, 2024



Plate 5: Women involved in processing of mangrove seeds on 17th to 25th August, 2024



Plate 6: Preparation and filling of bags for submerged Nursery Development Activity on 25th to 30th August, 2024



Plate 7: Labour Involvement in filling of bags for nursery preparation at Kandla on 25th August to 5th September, 2024



Plate 8: Seed sowing of *Avicennia marina* in polybags at nursery at Kandla on 6th to 15th September, 2024



Plate 9: Site submerged during high tide on 15th September, 2024



Plate 10: Germination of *A. marina* seeds in polybags and germination during visit of GUIDE team at Kandla on 15th to 25th September, 2024



Plate 11: Nursery of *A. marina* saplings in natural tidal inundation at Kandla on 5th to 25th October, 2024



Plate 12: Insect pests and diseases in *A. marina* leaf and stem in saplings during visit of GUIDE team at Kandla on 25th October to 5th November, 2024



Plate 13: Labour Involvement in Ota bed raised method at Kandla 1st to 07th September, 2024



Plate 14: Seed sowing of *A. marina* in Orla beds at nursery at Kandla on 10th to 25th September, 2024



Plate 15: Germination of *A. marina* in Orla beds observed during visit of GUIDE team at Kandla on 5th to 25th October,



Plate 16: Mangrove Growth of *A. marina* prior to Transplanting from Nursery to Plantation Site by the GUIDE Team at Kandla on 30th November



Plate 17: Labour Participation in Loading Nursery Bags onto Boats for Transportation to Plantation Sites at Kandla on 1st December to 15th December, 2024



Plate 18: Labour Involvement plantation the *A. marina* at Kandla on 1st December, 2024 to 31st January, 2025



Plate 19: Labour Involvement plantation the *A. marina* at Kandla on 1st December, 2024 to 31st January, 2025



Plate 20: Labour Involvement in *A. marina* Plantation during GUIDE Team Visit to Kandla on 15th January, 2025



Plate 21: *A. marina* Plantation during GUIDE Team and DPA Team Visit to Kandla on 15th January, 2025



Plate 22: Mangrove outplanting, including row establishment and saplings placing inside hole, levelling soil surface at Kandla on 10th February, 2025

6. Summary of the Report

The aim of the report is to assess the situation of growing mangrove saplings at DPA Gulf of Kutch. In order to comply with the stipulated condition of the EC & CRZ Clearance dated 1/1/2024 accorded by the MoEF&CC, GoI read with CRZ Recommendation dated 25/8/2022 for “Augmentation of Liquid Cargo Handling capacity from 8 to 23.8 MMTPA through modernization of existing Pipeline network at Oil Jetty area of DPA, Kandla”), DPA assigned work of “Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority reg.”, to GUIDE, Bhuj vide work order dated 10/6/2024.

The DPA has initiated a program for plantation of mangroves to improve these ecosystems within the limits of its port. The general focus of this project is to evaluate mangrove plantation in an area of 50 Hectares for Deendayal Port Authority, site conditions for planting, study the soil and water characteristics, and formulate and execute a site-specific planting plan utilizing nursery grown transplant, otla method and other forms. The objective is to increase the mangrove species, improve the resilience of the ecosystem and provide the local population with valuable resources and services, all while ensuring the sustainability of mangrove cover over the long term. The increased ecological stability and productivity of the region, and provide necessary resources and services to the local and marginalized communities throughout the work in a selected, defined and timetabled manner to observe the speed of the work done. The Mangrove Plantation in an area of 50 Hectares of *Avicennia marina* and *Rhizophora mucronata* at scientifically identified location (Satsaida bet) is completed.

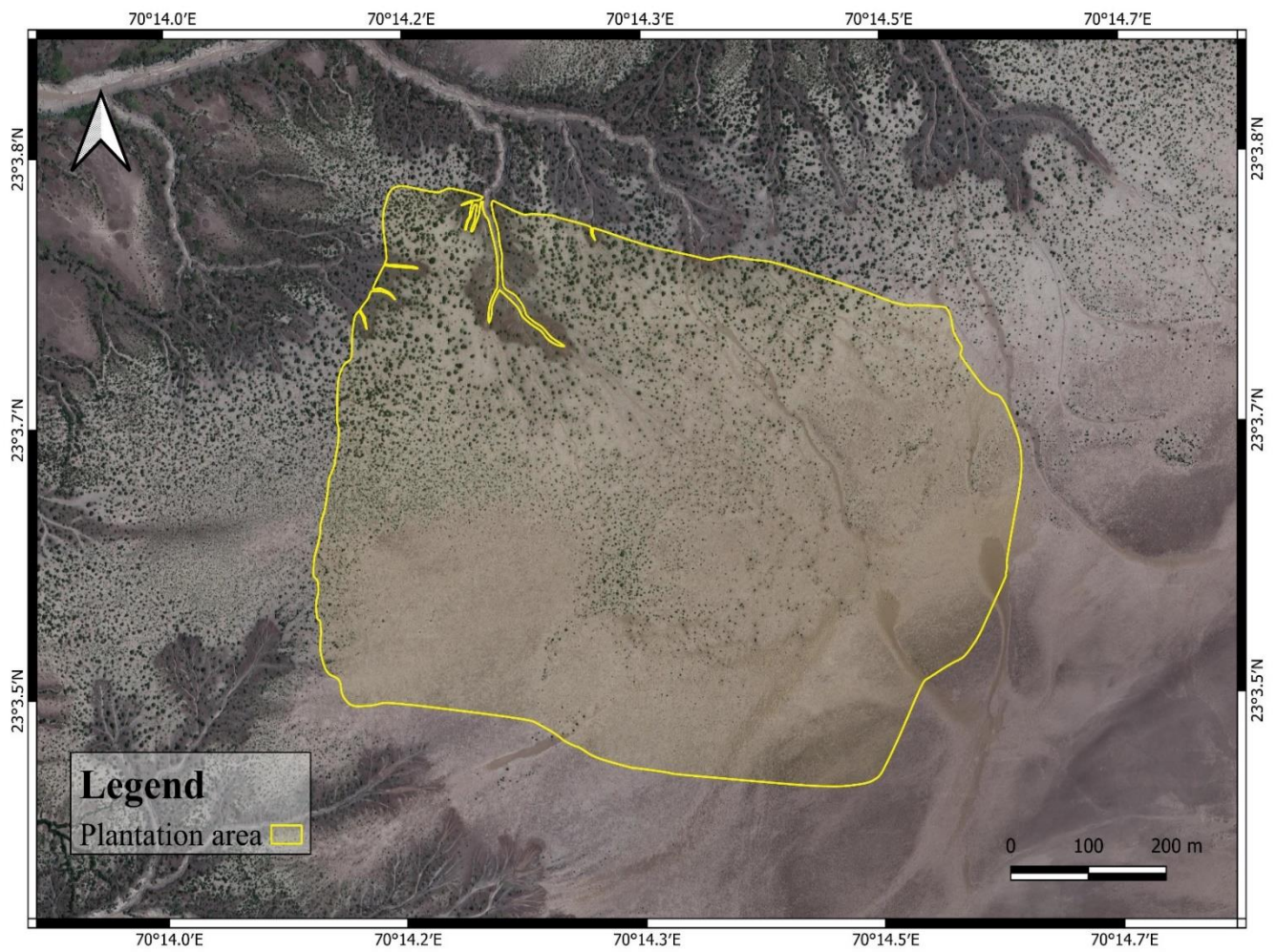


Figure 5: Mangrove plantation site area at Kandla, Gujarat, India



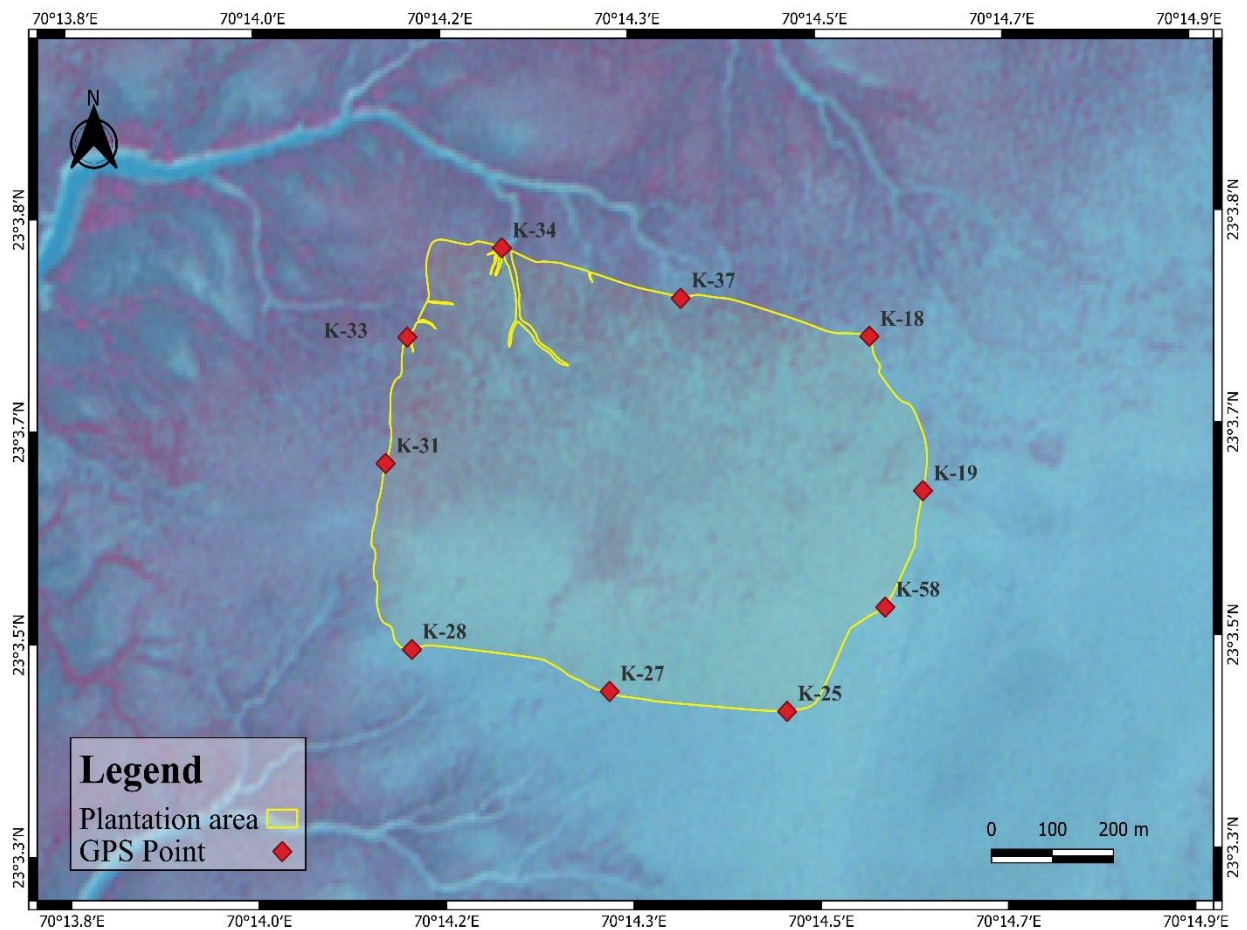
Plate 24: Growing saplings during GUIDE Team Visit to Kandla on 10th February, 2025



Plate 25: Labour Involvement plantation the *Rhizophora mucronata* at Kandla on 31st January to 28th March, 2025

Table: 2 GPS Points of Mangrove Project Site at Kandla, Gujarat, India

No	Point No.	Longitude	Latitude
1	K-18	70.243	23.062
2	K-19	70.244	23.06
3	K-23	70.243	23.058
4	K-25	70.241	23.057
5	K-27	70.239	23.057
6	K-28	70.235	23.058
7	K-31	70.235	23.061
8	K-33	70.235	23.062
9	K-35	70.237	23.064
10	K-37	70.24	23.063

**Figure 6:** Mangrove plantation site area with GPS location points at kandla, Gujarat, India

7. Future Considerations for Mangrove Plantation

DPA needs to focus on the mangrove plantation project in Kandla. In ensuring that, this report puts forward the steps that need monitoring for the future.

7.1. Carry out regular monitoring of mangrove plantation

The regular monitoring of mangrove plantations is must in the plantation site to ensure growth status of the planted mangroves. It will also help in detection of any signs of disease or damage early. Regular monitoring also helps to understand any threats to mangrove such as potential erosion or grazing etc, also help to protect the local ecosystem and biodiversity. It will useful in the measurement of effectiveness of conservation efforts.

7.2. Regular gap filling to be done

Maintenance of the plantation is crucial for its continued success. Regular upkeep is needed, including filling in gaps where plants may have failed to establish. In addition to *Avicennia marina*, it's important to plant a variety of mangrove species to boost biodiversity. This increased diversity enhances the ecosystem's resilience to environmental changes, such as fluctuations in salinity, temperature, and sea level rise. Regular monitoring and management practices ensure the plantation's long-term health and ecological stability, contributing to the protection of coastal areas and marine life habitats.

8. References

ISFR (2019) India state of forest report. Ministry of Environment Forest and Climate Change Dehradun

Ragavan P, Saxena A, Jayaraj RSC, Mohan PM, Ravichandran K, Saravanan S, Vijayaraghavan A (2016) A review of the mangrove floristics of India. Taiwania 61(3)

- Singh JK (2020) Structural characteristics of mangrove forest in different coastal habitats of Gulf of Khambhat arid region of Gujarat, west coast of India. *Heliyon* 6(8):e04685. <https://doi.org/10.1016/j.heliyon.2020.e04685>
- Woodroffe CD, Rogers K, McKee KL, Lovelock CE, Mendelssohn IA, Saintilan N (2016) Mangrove sedimentation and response to relative sea-level rise. *Annual review of marine science* 8(1):243–266
- APHA (2017). *Standard Methods for the Examination of Water and Wastewater*, 23rd edition. American Public Health Association, 1546.
- Strickland, J.D.H. and Parsons, T.R. (1972) *A Practical Handbook of Seawater Analysis*. 2nd edition. Ottawa, Canada, Fisheries Research Board of Canada, 310pp. (Bulletin Fisheries Research Board of Canada, Nr. 167 (2nd ed)). DOI: <http://dx.doi.org/10.25607/OBP-1791>
- Tandon, V.R. (2005) Medicinal Uses and Biological Activities of *Vitex negundo*. *Natural Product Radiance*, 4, 162-165.
- Jackson, M.L. (1958) *Soil Chemical Analysis*. Prentice-Hall Inc., Englewood Cliffs, NJ, 498 p.

ANNEXURE- 3

Compliance report (Period from October 2024 to March 2025)

Project: Development of Ro-Ro/Ro-Pax Facility at Hazira by Deendayal Port Authority (600 m water front – 170 m berthing jetty and other allied structure viz. approach jetty, pontoons, link span etc. and 5 Ha. area (onshore facility)).

Status of Project: Under Operation Stage (RoRo/RoPax facility: 170 m berthing jetty and other allied structure viz. approach jetty, pontoons, link span etc. and 5 Ha. area (onshore facility)). As per bifurcated EC & CRZ Clearance dated 4/4/2022 issued by the MoEF&CC, GoI, DPA has obtained CCA (PCB Id: 88242) from GPCB vide Order dated 10/07/2023 with validity up to 26/07/2027.

Reference:

- MoEF&CC, GoI, vide letter dated 4/4/2022 issued Bifurcation of EC&CRZ Clearance accorded to M/s Essar Bulk Terminal Limited vide letter dated 6th May, 2014 by MoEF&CC, GoI in the name of Deendayal Port Trust (Now Deendayal Port Authority).
- Condition no. (xv) under Specific Conditions "*All the conditions/recommendations stipulated by Gujarat Coastal Zone Management Authority (GZCMA) No. ENV 10-2011-877-E dated 01/06/2013*" of Environmental and CRZ Clearance accorded to M/s Essar Bulk Terminal Limited vide letter dated 6th May, 2014 by MoEF&CC, GoI.

Status of compliance of conditions stipulated in the CRZ Recommendation dated 01/06/2013:

Sl. No.	EC Condition	Compliance
1.	The provisions of the CRZ Notification of 2011 shall be strictly adhered to by M/s EBTL. No activity in contradiction to the provisions of the CRZ Notification shall be carried out by M/s EBTL.	With regard to Ro-Ro/Ro-Pax Facility developed by DPA, the provisions of the CRZ Notification of 2011 are being strictly adhered to by DPA and no activity in contradiction to the provisions of the CRZ Notification is being carried out.
2.	Natural drainage system shall be designed in such a way that there shall be no damage to the existing mangrove patches nearby site.	The GMB had allotted land of 24 Hectares to Deendayal Port Authority devoid of Mangroves. However, due care is being taken so that Natural Drainage System will be maintained.
3.	The Essar Bulk Terminal Limited shall take up mangrove plantation in 500 ha of land in consultation with GEC/Forest department.	As per the directions of the GCZMA and MoEF&CC, GoI, to date, DPA has undertaken a Mangrove Plantation in an area of 1600 Hectares since the year 2005. The details have already been communicated with the earlier compliance reports submitted.

		Further, DPA has assigned work to M/s GUIDE, Bhuj vide work order dated 10/06/2024 for "Mangrove Plantation in an area of 50 Hectares for Deendayal Port Authority reg." The work is completed and the final report is attached herewith as Annexure 1. For regular monitoring of mangroves, DPA engaged M/s GUIDE, Bhuj during the year 2017 & subsequently, vide work order dated 3/5/2021. The final report submitted by M/s GUIDE has already been communicated with the compliance report dated 05/08/2022. Further DPA has assigned work to M/s GUIDE, Bhuj vide work order dated 10/06/2024 for "Monitoring of Mangrove Plantation 1600 Ha carried out by DPA" for the Period of 10/06/2024 to 09/06/2025. The work order has already been communicated with last compliance report dated 08/05/2025.
4.	Coal, ore and other material handling shall be done through totally closed system.	N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.
5.	All necessary permissions from different Government Departments/agencies, including GMB, shall be obtained by M/s EBTL, before commencing the activities.	The Ministry of Ports, Shipping & Waterways, Government of India appointed Deendayal Port Authority (Erstwhile: DPT) as its nominee to take over the Project assets under the Concession Agreement (at Ghogha and Dahej terminals and the maintenance dredging at Dahej terminal) and also the assets at Hazira for the Ro-Pax ferry service. For the purpose, the 600m waterfront along with 24 ha backup land is allotted to Deendayal Port Authority by the Gujarat Maritime Board, GoG at Hazira for developing Ro-Ro/Ro-Pax Facility at Hazira Copy of GMB has already been communicated along with earlier compliance report. As directed in the Bifurcated EC & CRZ Clearance issued to DPA by the MoEF&CC,

		GoI dated 4/4/2022 , DPA has obtained the CCA from the Gujarat Pollution Control Board (under Water Act 1974 and Air Act 1981) in the name of DPA for development of 600 m waterfront and 24 ha back up area vide GPCB letter no. GPCB/CCA-SRT-2458/ID-88242/74790 dated 13/07/2023 (Copy – Annexure 2).
6.	All the recommendations and suggestions given by WAPCOS in their Environmental Impact Assessment reports for conservation/ protection and betterment of environment shall be implemented strictly by M/s EBTL.	Point noted.
7.	The construction and operational activities shall be carried out in such a way that there is no negative impact on mangroves, if any, and other important coastal / marine habitats. Construction activity shall be carried out only under the guidance/ supervision of the reputed institute / organization.	The GMB had allotted land of 24 Hectares to Deendayal Port Authority devoid of Mangroves. However, due care is being taken so that there is no negative impact on mangroves, if any, and other important coastal/ marine habitat. The Ro-Ro/Ro-pax facility is under operation.
8.	M/s EBTL shall strictly ensure that no rivers are blocked due to any activity at the proposed site.	It is assured that; due care is being taken by DPA so that no rivers are blocked due to any activity at the project site.
9.	The construction debris and / or any other type of waste shall not be disposed of in to the sea, creek or in the CRZ area. The debris shall be removed from the construction site immediately after construction is over.	Currently, the Ro-Ro/Ro-pax facility is under operation.
10.	The construction camps shall be located outside the CRZ area and the construction labour shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours.	Currently, the Ro-Ro/Ro-pax facility is under operation.
11.	M/s EBTL shall bear the cost of the external agency that may be appointed by this department for supervision / monitoring of proposed	Currently, the Ro-Ro/Ro-pax facility is under operation.

	activities and the environmental impacts of the proposed activities.	
12.	The groundwater shall not be tapped within the CRZ areas by the EBTL to meet with the water requirements in any case.	Water requirements are met through private tankers.
13.	M/s EBTL shall take up massive greenbelt developmental activities in consultation with Forest Department / GEER Foundation / Gujarat Ecology Commission. A comprehensive plan for this purpose has to be submitted to the Forest and Environment Department.	DPA had already developed required plantation (area of about 7000 m²) within the Ro-Ro/Ro-Pax Terminal area .
14.	The EBTL shall have to take up bio-shielding development programme as part of CSR in consultation with Forest Department / PCCF and an action plan in this regard shall have to be submitted to the MoEF, GoI and this department.	Not Applicable. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.
15.	The EBTL shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forest and Environment Department and the District Collector / District Development Officer.	As per the CSR Guidelines issued from time to time by the MoPSW,GoI, DPA since the year 2011-12 had carried out various CSR activities (Annexure 3) .
16.	A separate budget shall be earmarked for environmental management and socio-economic activities including the greenbelt/ mangrove plantation and details thereof shall be furnished to this Department as well as the MoEF, GoI. The details with respect to the expenditure from this budget head shall also be furnished along with the compliance report.	The allocation made under the scheme of "Environmental Services & Clearance thereof other related Expenditure" during RBE 2024-2025 is Rs. 585 Lakhs. The expenditure made under the scheme of "Environmental Services & Clearance thereof other related Expenditure" is Rs. 522 Lakhs from October 2024 to March 2025.
17.	A separate Environmental Management Cell with qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	DPA is already having dedicated EMC. In this regard, DPA has also appointed expert agency for providing Environmental Experts from time to time. Currently, DPA appointed M/s Precitech Laboratories Pvt. Ltd., Vapi for three years vide work order dated 5/2/2021 (Copy of work order has

		already been communicated with the compliance report dated 05/08/2022). In addition, DPA has also appointed Manager (Environment) on contractual basis for a period of 3 years & further extendable for 2 years (Copy of offer of appointment has already been communicated with the compliance report dated 05/08/2022.) Further, DPA had assigned the work of monthly environmental monitoring to M/s A 2 Z Envirotech vide Work Order dated 15/09/2022. The copy of the monitoring report has already been communicated with the earlier compliance report submitted. Recently, DPA has assigned the work of monthly environmental monitoring to GEMI, Gandhinagar for a period of 3 years vide letter dated 18/04/2023. The work is in progress and the latest monitoring report submitted by GEMI is attached herewith as Annexure 4.
18.	Environmental Audit 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 M/s EBTL to this department as well as to the MoEF, GoI.	Point noted for compliance.
19.	A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by M/s EBTL on a regular basis to this Department as well as to the Ministry of Environment and Forest, Government of India.	It is assured that w.r.t. subject project, six monthly report on compliance of the conditions mentioned in this letter will be furnished by DPA on a regular basis to GCZMA as well as to the Regional Office, MoEF&CC, GoI.

20.	Any other condition that may be stipulated by this Department / Ministry of Environment and Forest, Government of India from time to time for Environmental Protection / management purpose shall also have to be complied with by M/s EBTL.	Point noted.
-----	--	--------------

ANNEXURE- 4

List of CSR Works for the Oct 2024 to Till March-2025		
Sr.No	Name of work	Approved cost (Rs in Lakhs)
1	Request for construction of relocatable of sports arena at Gandhidham Military Station,HQ 98 Artillery Brigade Military Station Gandhidham	₹ 28.00
2	Proposal for construction of Police Community Hall at Police Headquarters Shinay.Office of the Superintendent of Police, East – Kutch Gandhidham.	₹ 100.00
3	Proposal for providing AWG system at their check posts located in the Runn of Kutch,Commandant BSF Station Gandhidham	₹ 82.70
4	Proposal for providing 4000 pieces of Tripal/Tarpaulin,Matri Sena Charitable Trust	₹ 32.00
5	Proposal for Upgrading Satellite Eye Hospital at Bhuj.1.Request for financial support for the addition of cornea and retina outpatient departments (OPD), a spectacle dispensing unit, and a medicine counter as part of our OPD activities, & equipment purchase.	₹ 35.08
6	Proposal for financial assistance for purchase of C Arm and OT table to start Orthopedic at St. Joseph's Hospital Gandhidham,ST. Joseph's Hospital Trust, Gandhidham.	₹ 28.78
7	Proposed to establish a women empowerment center, through Ujjas Mahila Sangh,Gandhidham	₹ 119.48
8	CSR fund for extension of building of pre- primary unit of S.H.N. Academy School being managed by Indian Institute of Sindhology at Adipur	₹ 71.55
9	CSR Grant for 'Strengthening of School Ecosystem at Primary School Level in Kachchh District,Ladies Environment Action Foundation (LEAF), Gandhinagar	₹ 50.00
Total Amount		₹ 547.59

ANNEXURE- 5



सत्यमेव जयते

Forests & Environment Department
Government of Gujarat

Monthly Environmental Monitoring Plan **(EMP report)**

For

**“Preparing and Monitoring of Environmental
Monitoring and Management Plan for
Deendayal Port Authority at Dahej-Hazira-
Ghogha for a period of 3 years”**

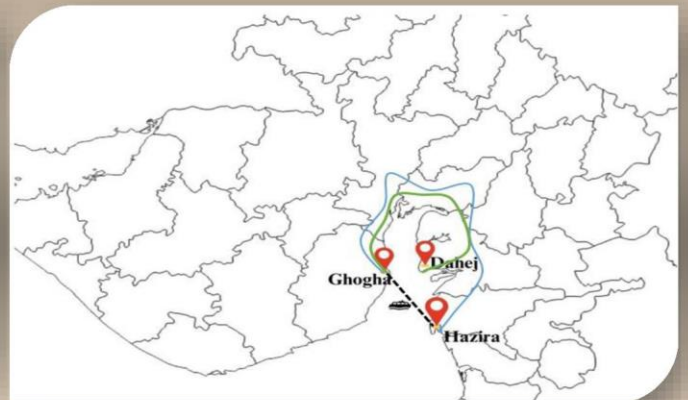
(13th December '24 to 12th January '25)

(Final Report)

Report Issue No: GEMI/835(9)/2025/167

Submitted to:

Deendayal Port Authority (DPA), Kandla



Gujarat Environment Management Institute (GEMI)

(An Autonomous Institute of Government of Gujarat)

GEMI Bhavan, 246-247, GIDC Electronic Estate, Sector-25, Gandhinagar-382025

“An ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 Certified Institute”



© Gujarat Environment Management Institute (GEMI) March 25

All rights reserved



Gujarat Environment Management Institute (GEMI)

(An Autonomous Institute of Government of Gujarat)

(An ISO 9001:2015 & ISO 14001:2015 & ISO 45001 : 2018 Certified Institute)
(QCI-NABET Accredited EIA Consultant Institute Center)

Certificate

This is to certify that the Monthly Environment Monitoring Plan (EMP) report for the period 13th December 2024 to 12th January 2025 for the work entitled, **“Preparing and Monitoring of Environmental Monitoring and Management Plan for Deendayal Port Authority at Dahej-Hazira-Ghogha for a period of 3 years”** has been prepared in line with the work order no. **EG/WK/4751/Hazira & Ghogha/285** dated 18/04/2023 allotted by Deendayal Port Authority.

The report has been delivered as per the terms and conditions of the work order Sr. No. 4(3).

S. S. O. & Lab Head'

Authorized Signatory

“We Provide Environmental Solutions”

Head Office : "GEMI BHAVAN", Plot Number : B - 246 & 247, Electronic Estate, G.I.D.C., Sector - 25, Gandhinagar - 382024.
Laboratory : "GEMI'S LABORATORY", Plot Number : B-64, Electronic Estate, G.I.D.C., Sector - 25, Gandhinagar - 382024.
Phone : 079-23240964 (O) 079 - 29910462 (Lab) **E-mail :** info-gemi@gujarat.gov.in **Website :** www.gemi.gujarat.gov.in

ABOUT THIS DOCUMENT

Gujarat Environment Management Institute (GEMI) has been assigned with the project **“Preparing and Monitoring of Environmental Monitoring and Management Plan for Deendayal Port Authority at Dahej-Hazira-Ghogha for a period of 3 years” (Final EMP report for 13th December 24 to 12th January 25) by Deendayal Port Authority, Kandla.** Under the said project the report titled “Monthly Environmental Monitoring Plan Report (*Final EMP report for 13th December 24 to 12th January 25*)” is prepared.

Name of the Report: Monthly Environmental Monitoring Plan (EMP report) for
“Preparing and Monitoring of Environmental Monitoring and
Management Plan for Deendayal Port Authority at Dahej-Hazira-
Ghogha for a period of 3 years”
(*Final EMP report for 13th December 24 to 12th January 25*)

Version: 1.0

Report No: GEMI/835(9)/2025/167

Report Issue Date: 11/03/2025

Prepared by: Mr. Nirav Nakar, Assistant Environmental Engineer

Contribution by: Mr. Harsh Pathak (Project Assistant)
Ms. Nishi Shah (Project Assistant)
Mr. Hitesh Dhabe (Project Assistant)
Mr. Het Trivedi (Project Manager, Ghogha)
Mr. Milan Vadaliya (Project Manager, Hazira)

Reviewed by: Ms. Jalpa Darji, Deputy Environmental Engineer & Unit Head - 2
Dr. Nitasha Khatri, Senior Scientific Officer & Lab Head

Approved by: Dr. Jaipal Singh, IFS, PCCF & Director



This page intentionally left blank

Table of Contents

Chapter 1. Introduction.....	1
1.1 Introduction	2
1.2 Locations for environmental monitoring	3
1.3 Details of environmental monitoring components.....	8
1.4 Sample collection, preservation, storage and transportation to GEMI's Laboratory	9
1.5 Environmental monitoring plan for 13 th December 2024 to 12 th January 2025	12
Chapter 2. Results and observations of environmental monitoring at Dahej, Hazira & Ghogha	13
2.0 Monitoring of various environmental components.....	14
2.1 Ambient air monitoring.....	14
2.2 Drinking water monitoring.....	18
2.3 Noise level monitoring.....	20
2.4 Soil quality monitoring	20
2.5 Marine Water, Sediment & Ecology Monitoring	22
2.5.1 Marine Water Quality Monitoring	22
2.5.2 Marine sediment quality monitoring.....	27
2.5.3 Marine ecological monitoring.....	30
2.6 Meteorological monitoring.....	33
2.7 Monitoring of DG stack emissions	38
References.....	39
ANNEXURE-I: Meteorological monitoring data	40



This page intentionally left blank

List of Tables

Table 1: Locations of environmental monitoring components	3
Table 2: Detailed plan of environmental monitoring components	8
Table 3: Details of sample collection and analysis method for each environmental component	10
Table 4: Environmental monitoring plan for Dahej, Hazira, and Ghogha for 13 th December 24 to 12 th January 25.....	12
Table 5: Result of ambient air quality monitoring	15
Table 6: Results of drinking water quality monitoring.....	18
Table 7: Results of noise monitoring.....	20
Table 8: Ambient air quality norms with respect of noise	20
Table 9: Results of soil quality monitoring.....	21
Table 10: Soil quality standard	21
Table 11: Result of marine water quality monitoring.....	23
Table 12: Water quality criteria: Primary water quality criteria for designated best uses for coastal waters [As per “The Environment (Protection) Act, 1986]	25
Table 13: Result of Marine Sediment Quality Monitoring	27
Table 14: Sediment Quality Guidelines (SQG) of the US Environmental Protection Agency (EPA) 1977	29
Table 15: Results of marine ecological monitoring for Biomass, NPP, GPP, Pheophytin, Chlorophyll-a, Secchi depth & Particulate oxidizable organic carbon	30
Table 16: Results of marine ecological monitoring for Benthic macroinvertebrates, Phytoplankton, and Zooplankton	30
Table 17: Results of meteorological monitoring.....	33
Table 18: Result of DG stack emissions.....	38

List of Figures

Fig. 1: Sampling locations at Ghogha	4
Fig. 2: Sampling locations at Hazira	5
Fig. 3: Sampling locations at Dahej	6
Fig. 4: Photographs of environmental monitoring	7
Fig. 5: Sampling locations with their respective phytoplankton genera counts	31
Fig. 6: Representation of benthic macrofauna obtained during monitoring period.....	31
Fig. 7: Windrose diagram of Dahej.....	35
Fig. 8: Windrose diagram of Hazira.....	36
Fig. 9: Windrose diagram of Ghogha.....	37



This page intentionally left blank



Chapter 1. Introduction

1.1 Introduction

Deendayal Port Authority (DPA), Erstwhile Kandla Port Trust, is one of the 13th major ports in India and is located on the west coast of India, in the Gulf of Kutch at 23°01'N and 70°13'E in the state of Gujarat in India. DPA has commissioned Ro-Ro/Ro-Pax facilities at Hazira and Ghogha, Gujarat. This waterfront is proposed to be operated for berthing and unberthing of ROPAX Ferry vessels to load and unload vehicles along with embarking and disembarking passengers. The travel time between Ghogha and Hazira has reduced from 10 hours to 3.15 hours with the start of the Ro-Ro ferry service. The road distance from Surat to Bhavnagar is 360 kilometers. Whereas the sea route distance is 67 nautical miles only. So, Ro-Ro/Ro-Pax vessels are deployed to reduce travel time and thereby, reduce carbon emission. In compliance with the conditions stipulated in statutory clearances viz. Environmental/CRZ Clearance from the Ministry of Environment & Forest, CRZ recommendations from the state Forest & Environment Department, and NOC from the State Pollution Control Board (SPCB), and to ensure implementation of the project in an environmentally sustainable manner in & around the project site, it is important to monitor the environmental status and prepare an effective environmental monitoring and management plan of the port facility for sustainable development.

In this regard, DPA proposes to formulate a detailed and effective environmental monitoring and management plan by conducting monthly environmental monitoring for its onward submission to the statutory bodies.

Under the said study, monitoring of the various aspects of the environment such as Ambient air, DG stack emissions, meteorology, drinking water, soil, noise, and marine environment- Water, Sediment & Ecological characteristics for the locations at Hazira, Dahej & Ghogha for 3 years needs to be carried out.

This report includes the monthly Environmental Monitoring Plan (EMP) report for monitoring carried out for the month of “13th December 24 to 12th January 25”.

1.2 Locations for environmental monitoring

Finalized monitoring locations as per the preliminary site visit report are shown in **Table 1** and **Figures 1 to 3**. The monitoring photographs are shown in **Figure 4**.

Table 1: Locations of environmental monitoring components

Locations	Sample code	Latitude	Longitude
Ambient Air Monitoring			
Admin building at Ghogha Ro-Ro ferry	AM-G	21.673483	72.284497
Terminal building at Hazira Ro-Ro ferry	AM-H1	21.077458	72.657147
Staff accommodation at Ro-Ro ferry at Hazira	AM-H2	21.0775717	72.6551994
Admin building at Ro-Ro ferry service at Dahej	AM-D	21.666383	72.561889
Drinking Water Monitoring			
Canteen building at Ghogha Ro-Ro ferry	DW-G	21.677216	72.283060
Terminal building at Hazira Ro-Ro ferry	DW-H	21.077399	72.657189
Canteen building at Ro-Ro ferry service at Dahej	DW-D	21.66435	72.563489
Noise Monitoring			
Admin building at Ghogha Ro-Ro ferry	N-G	21.673481	72.284464
Terminal building at Hazira Ro-Ro ferry	N-H1	21.077458	72.657147
Staff accommodation at Ro-Ro ferry at Hazira	N-H2	21.0775717	72.6551994
Admin building at Ro-Ro Ferry Service at Dahej	N-D	21.666383	72.5561889
Meteorological Data Monitoring			
Admin building at Ghogha Ro-Ro ferry	M-G	21.673483	72.284497
Terminal building at Hazira Ro-Ro ferry	M-H	21.077458	72.657147
Admin building at Ro-Ro Ferry Service at Dahej	M-D	21.666383	72.561889
Soil Quality Monitoring			
Terminal building at Ghogha Ro-Ro ferry	S-G	21.67496	72.284388
Near Terminal building at Hazira Ro-Ro ferry	S-H	21.076353	72.657294
Ro-Ro ferry service at Dahej	S-D	21.666037	72.563489
Marine Water, Ecology and Sediment Monitoring			
Near Ro-Ro ferry terminal at Ghogha	MA-G1	21.67954	72.29433
Away from Ro-Ro ferry terminal at Ghogha and along the ferry route from Ghogha to Hazira	MA-G2	21.665054	72.336313
Near Ro-Ro ferry terminal at Hazira	MA-H1	21.07577	72.65839
Away from Ro-Ro ferry terminal at Hazira and along the ferry route from Hazira to Ghogha	MA-H2	21.072114	72.657794
Near Ro-Ro ferry Service at Dahej	MA-D	21.65988	72.56365
DG stack emission Monitoring			
Near substation-3 at Ghogha Ro-Ro ferry	DG-G	21.6739638	72.2835000
Generator Room near Terminal building at Hazira Ro-Ro ferry	DG-H	21.0775041	72.6563279
Near Substation-1 at Dahej Ro-Ro ferry	DG-D	21.665902	72.562056

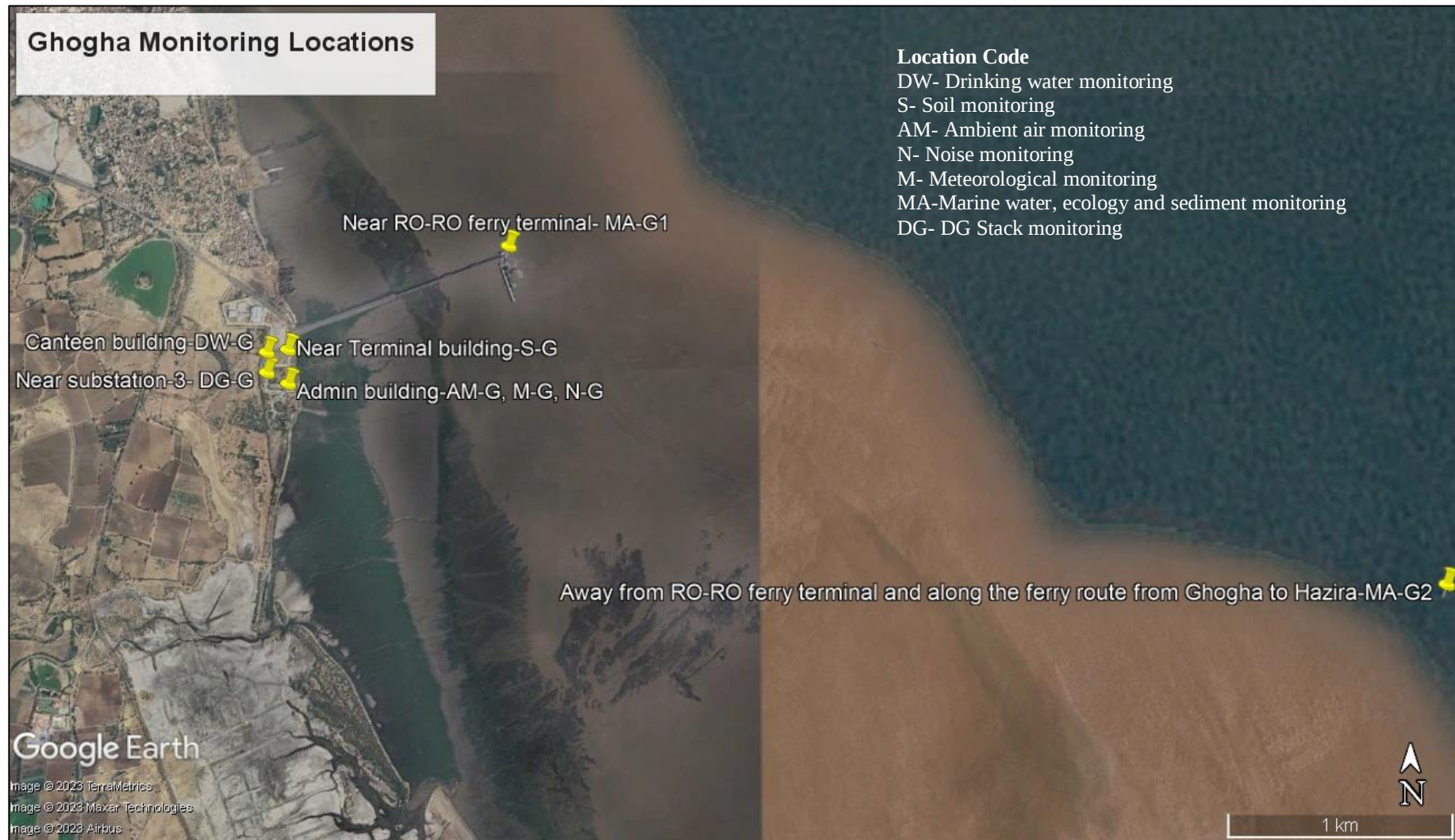


Fig. 1: Sampling locations at Ghogha



Fig. 2: Sampling locations at Hazira



Fig. 3: Sampling locations at Dahej

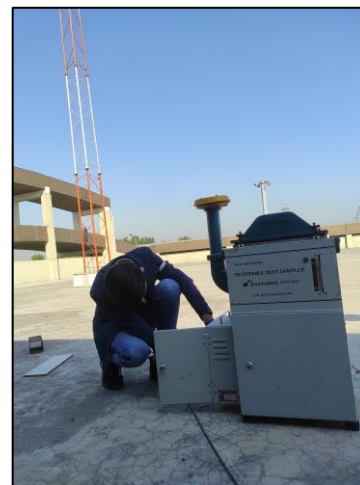
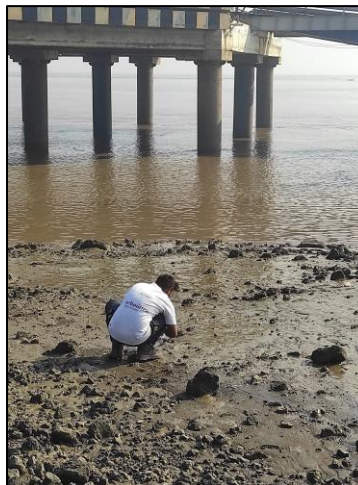


Fig. 4: Photographs of environmental monitoring

1.3 Details of environmental monitoring components

Detailed plan of environmental monitoring components and its parameters is shown in Table 2.

Table 2: Detailed plan of environmental monitoring components

Sr. No	Parameter	No. of locations	Frequency	Parameters
1.	Ambient air quality monitoring (4 locations)	1 at Ghogha, 2 at Hazira and 1 at Dahej	Twice a week	PM ₁₀ , PM _{2.5} , Sulphur dioxide, Oxides of nitrogen, Carbon monoxide
			Once in a month	Hydrocarbons, Benzene, Volatile Organic Compound, Non-methane VOC
2.	Drinking water monitoring (3 locations)	1 at Ghogha, 1 at Hazira and 1 at Dahej	Once in a month	Odor, Color, pH, Turbidity, TDS, TSS, Conductivity, Chloride, Calcium as Ca, Magnesium, Total hardness, Sulphate as SO ₄ , Nitrate as NO ₃ , Nitrite as NO ₂ , Fluoride as F, Sodium as Na, Iron as Fe, Potassium as K, Manganese, Total chromium, Hexavalent chromium, Copper, Cadmium, Arsenic, Lead, Zinc, Mercury, Salinity, Free residual chlorine, Microbiological (MPN)
3.	Noise level monitoring (4 locations)	1 at Ghogha, 2 at Hazira and 1 at Dahej	24 hrs period once in a month	Leq (Day) & (Night)
4.	Soil quality monitoring (3 locations)	1 at Ghogha, 1 at Hazira and 1 at Dahej	Once in a month	Total Organic Matter, Organic Carbon, Inorganic Phosphate, Texture, pH, Conductivity, Particle size distribution & Silt content, SAR, Water holding capacity, Aluminum, Chromium, Nickel, Copper, Zinc, Cadmium, Lead, Arsenic, Mercury
5.	Meteorological data monitoring (3 locations)	1 at Ghogha, 1 at Hazira and 1 at Dahej	Daily	Wind speed, Wind direction, Rainfall, Humidity, Temperature, Solar radiation
6.	DG emissions (3 locations)	1 at Ghogha, 1 at Hazira and 1 at Dahej	Once in a month	Particulate Matter, Sulphur dioxide, Oxides of nitrogen, Carbon monoxide, Carbon dioxide
7.	Marine water quality (5 locations)	2 at Ghogha, 2 at Hazira	Once in a month	Odor, Color, pH, Turbidity, TDS, TSS, Conductivity, DO, Particulate organic carbon, COD, BOD, Silica,

Sr. No	Parameter	No. of locations	Frequency	Parameters
		and 1 at Dahej		Phosphate, Sulphate as SO ₄ ⁻ , Nitrate as NO ₃ , Nitrite as NO ₂ , Sodium as Na, Potassium as K, Manganese, Iron as Fe, Total chromium, Hexavalent chromium, Copper, Cadmium, Arsenic, Lead, Zinc, Mercury, Oil & grease, Floating material (scum), Microbiological (MPN), Density
8.	Marine water quality for biological monitoring (5 locations)	2 at Ghogha, 2 at Hazira and 1 at Dahej	Once in a month	Chlorophyll-a, Pheophytin, Productivity (Net & Gross), Biomass; Relative abundance, species composition and diversity of phytoplankton; Relative abundance, species composition and diversity of zooplankton; Relative abundance, species composition and diversity of benthic invertebrates; (Meio, Micro and Macro benthos), Particulate oxidizable organic carbon, Secchi disk depth
9.	Sediments quality (5 locations)	2 at Ghogha, 2 at Hazira and 1 at Dahej	Once in a month	Texture, Organic Matter, Inorganic Phosphate, Silica, Phosphate, Sulphate, Nitrite, Nitrate, Calcium, Magnesium, Sodium, Potassium, Aluminum, Copper, Chromium, Nickel, Zinc, Cadmium, Lead, Arsenic, Mercury

1.4 Sample collection, preservation, storage and transportation to GEMI's Laboratory

Sampling of water and wastewater samples was carried out by 'GEMI's sampling protocol for water and wastewater' approved by the Government of Gujarat vide letter no. ENV-102013-299-E dated 24-04-2014 under the provision of the Water (Preservation and control of pollution) Act 1974. Soil sampling was conducted as per the 'Soil sampling manual by GEMI' published in November 2016. Whereas, for the other components of the environment such as ambient air, noise, & marine ecology, the guidelines/manuals brought out by CPCB were followed. The sampling was carried out by GEMI's trained manpower. The details of the environmental samples and their respective standards are summarized in **Table 3**.

Table 3: Details of sample collection and analysis method for each environmental component

Sr. No.	Type of sample		Manual/ Standards and Protocols	Instruments
1.	Ambient air	IS 5182 (Part 23): 2006	PM ₁₀	Respirable Dust Sampler (RDS) conforming to IS:5182 (Part-23): 2006
		IS:5182 (Part:24):2019	PM _{2.5}	Fine Particulate Sampler (FPS) conforming to IS:5182 (Part-24): 2019
		IS:5182 (Part-2):2001	SO _x	Gaseous attachment conforming to IS:5182 (Part-2):2001
		IS:5182 (Part-6):2006	NO _x	Gaseous attachment conforming to IS:5182 (Part-6): 2006
		GEMI/SOP/AAQM/11; Issue no 01, Issue date 17.01.2019: 2019	Carbon monoxide	Sensor based Instrument
		IS 5182 (Part 11): 2006	Benzene	Low flow air sampler conforming to IS:5182 (Part-11): 2006
		IS 5182 (Part 11): 2006	VOC	Low flow air sampler conforming to IS:5182 (Part-11): 2006
		IS: 5182 (Part 17): 1979	Hydrocarbon	Aluminized plastic bags with on/off valve conforming to IS 5182 (Part 17):1979
		IS: 5182 (Part 17): 1979	Non-methane VOC	Aluminized plastic bags with on/off valve conforming to IS 5182 (Part 17):1979
2.	DG emissions		IS: 11255 and USEPA Method	Sensor based flue gas analyzer (Make: TESTO, Model 350) Stack Monitoring Kit
3.	Meteorological data		Installation of automatic weather stations to get periodic meteorological data as per the requirement	Automatic Weather Stations (AWS)

4.	Water (Drinking water, Surface water)	Sampling protocol for water & wastewater approved by the Government of Gujarat vide letter no. ENV-102013-299-E dated 24-04-2014 under the provision of Water (Preservation and Control of Pollution) Act 1974.	For drinking water- Titration apparatus, pH meter and conductivity meter Sample collection method: Grab sampling For marine water - Niskin sampler
5.	Soil and Marine sediments	Soil sampling manual by GEMI published in November 2016	For sediment sample collection –Van veen grab sampler
6.	Noise	IS 9989:2014	Noise meter
7.	Marine ecology	Technical guidance book – An introduction to aquatic biomonitoring using macro-invertebrates, 2021 by CPCB	The sampling of the benthic invertebrates will be carried out with the help of D-frame nets, whereas the sampling of zooplankton and phytoplankton shall be carried out with the help of plankton nets (60 micron and 20 micron).

1.5 Environmental monitoring plan for 13th December 2024 to 12th January 2025

The Environmental monitoring was carried out for Ambient air, Soil, Drinking water, Noise, Meteorology, DG stack, and Marine environment – water, sediment and ecology. The detailed environmental monitoring plan for month of 13th December’ 24 to 12th January’ 25 is given in **Table 4**.

Table 4: Environmental monitoring plan for Dahej, Hazira, and Ghogha for 13th December 24 to 12th January 25

Sampling and Monitoring Team	Mr. Het Trivedi- Project manager (Ghogha), Mr. Milan vadaliya- Project manager (Hazira), Mr. Harsh Pathak- Project Assistant (Dahej)			
	Actual Monitoring Dates			
Task	Project sites			
Monitoring of Drinking water, Soil, Noise, Marine Water, Sediments and ecology	Dahej	Hazira-1	Hazira-2	Ghogha
Soil monitoring	17-12-2024	17-12-2024	-	23-12-2024
Drinking water	17-12-2024	17-12-2024	-	23-12-2024
Marine water and marine sediments and marine ecology	17-12-2024	17-12-2024	17-12-2024	23-12-2024
Noise monitoring	19-12-2024	24-12-2024	26-12-2024	31-12-2025
Monitoring of DG stack	20-12-2024	13-12-2024	-	31-12-2024
Monitoring of ambient air	16-12-2024	16-12-2024	16-12-2024	15-12-2024
	18-12-2025	18-12-2024	18-12-2024	18-12-2024
	23-12-2025	23-12-2024	23-12-2024	23-12-2024
	26-12-2025	26-12-2024	26-12-2024	30-12-2024
	30-12-2025	30-12-2024	30-12-2024	01-01-2025
	03-01-2025	01-01-2025	01-01-2025	03-01-2025
	06-01-2025	06-01-2025	06-01-2025	06-01-2025
	09-01-2025	08-01-2025	08-01-2025	08-01-2025
Meteorological monitoring	13 th December’24 to 12 th January’25			

Chapter 2. Results and observations of environmental monitoring at Dahej, Hazira & Ghogha

2.0 Monitoring of various environmental components

Monitoring of various environment components was carried out at the locations listed in **Table 1** above. Details of each component have been mentioned below.

2.1 Ambient air monitoring

Air monitoring was carried out at four locations, 1 at Dahej, 2 at Hazira, and 1 at Ghogha. The monitoring cycle was twice a week for 24-hour sampling. Sampling for benzene, hydrocarbon, non-methane VOC, and VOC was done once in a month. **Table 5** shows the results of ambient air monitoring.

Table 5: Result of ambient air quality monitoring

Sr. No.	Parameters	NAAQ Standards, 2009 (Industrial, Residential, Rural & Other areas) for 24 hours	Location code: (AM-D)							
			Sampling Date							
			16-12-2024	18-12-2025	23-12-2025	26-12-2025	30-12-2025	03-01-2025	06-01-2025	09-01-2025
1	PM ₁₀ (µg/m ³)	100 (µg/m ³)	192.07	189.06	204.36	148.9	207.22	206.21	191.28	155.55
2	PM _{2.5} (µg/m ³)	60 (µg/m ³)	103.86	68.35	71.25	69.36	80.03	119.45	75.95	52.24
3	SO ₂ (µg/m ³)	80 (µg/m ³)	65.60	63.22	49.78	18.35	21.32	48.30	20.84	11.75
4	NO _x (µg/m ³)	80 (µg/m ³)	37.70	18.45	18.90	25.61	22.75	46.57	28.57	16.40
5	CO (µg/m ³)	2000 (µg/m ³)	480	460	456	480	465	500	470	470

Sr. No.	Parameters	NAAQ Standards, 2009 (Industrial, Residential, Rural & Other areas) for 24 hours	Location code: (AM-H1)							
			Sampling Date							
			16-12-2024	18-12-2024	23-12-2024	26-12-2024	30-12-2024	01-01-2025	06-01-2025	08-01-2025
1	PM ₁₀ (µg/m ³)	100 (µg/m ³)	253.12	317.06	291.08	372.46	295.67	262.40	309.67	218.37
2	PM _{2.5} (µg/m ³)	60 (µg/m ³)	116.50	152.47	143.65	208.40	143.23	113.52	89.67	84.65
3	SO ₂ (µg/m ³)	80 (µg/m ³)	20.26	18.28	12.48	16.74	27.07	32.08	17.90	23.52
4	NO _x (µg/m ³)	80 (µg/m ³)	16.33	23.57	6.71	34.67	31.30	29.31	25.72	35.48
5	CO (µg/m ³)	2000 (µg/m ³)	450	460	460	460	450	460	450	450



Sr. No.	Parameters	NAAQ Standards, 2009 (Industrial, Residential, Rural & Other areas) for 24 hours	Location code: (AM-H2)							
			Sampling Date							
			16-12-2024	18-12-2024	23-12-2024	26-12-2024	30-12-2024	01-01-2025	06-01-2025	08-01-2025
1	PM ₁₀ (µg/m ³)	100 (µg/m ³)	238.36	298.85	301.12	343.08	268.89	250.73	286.78	232.15
2	PM _{2.5} (µg/m ³)	60 (µg/m ³)	114.56	158.25	135.82	197.43	140.22	111.27	95.29	88.19
3	SO ₂ (µg/m ³)	80 (µg/m ³)	24.26	21.45	18.95	19.58	26.86	28.19	18.75	22.37
4	NO _x (µg/m ³)	80 (µg/m ³)	26.18	19.74	8.25	28.24	29.22	27.53	24.28	29.45
5	CO (µg/m ³)	2000 (µg/m ³)	480	490	440	480	460	490	470	480

Sr. No.	Parameters	NAAQ Standards, 2009 (Industrial, Residential, Rural & Other areas) for 24 hours	Location code: (AM-G)							
			Sampling Date							
			15-12-2024	18-12-2024	23-12-2024	30-12-2024	01-01-2025	03-01-2025	06-01-2025	08-01-2025
1	PM ₁₀ (µg/m ³)	100 (µg/m ³)	95.36	156.89	173.54	93.40	123.46	117.35	129.23	118.00
2	PM _{2.5} (µg/m ³)	60 (µg/m ³)	63.04	103.16	115.04	42.76	82.37	88.64	48.22	79.82
3	SO ₂ (µg/m ³)	80 (µg/m ³)	12.83	12.92	15.71	13.57	14.07	20.09	13.94	11.59
4	NO _x (µg/m ³)	80 (µg/m ³)	10.26	14.41	7.50	12.98	9.37	10.75	9.10	9.64
5	CO (µg/m ³)	2000 (µg/m ³)	440	510	480	470	490	510	450	510

Sr. No.	Parameters	NAAQ Standards, 2009 (Industrial, Residential, Rural & Other Areas) for 24 hours	Location Code: (AM-D)	Location Code: (AM-H1)	Location Code: (AM-H2)	Location Code: (AM-G)
			Sampling Date			
			16-12-2024	18-12-2024	18-12-2024	30-12-2024
1	Benzene ($\mu\text{g}/\text{m}^3$)	5 ($\mu\text{g}/\text{m}^3$)	<4.0	<4.0	<4.0	<4.0
2	Hydrocarbons ($\mu\text{g}/\text{m}^3$)	-	<4.0	<4.0	<4.0	<4.0
3	Non-methane VOC ($\mu\text{g}/\text{m}^3$)	-	<4.0	<4.0	<4.0	<4.0
4	VOC ($\mu\text{g}/\text{m}^3$)	-	<4.0	<4.0	<4.0	<4.0

Observations:

- The results of ambient air quality were compared with the National Ambient Air Quality Standards (NAAQS), 2009 specified by the Central Pollution Control Board (CPCB).
- Dahej:
 - The concentration of SO_2 , NO_x , CO, Benzene, Hydrocarbons, Non-methane VOC, and VOC were within the standard limit in all the samples.
 - PM_{10} was higher than the standard limit of $100 \mu\text{g}/\text{m}^3$ in all samples.
 - $\text{PM}_{2.5}$ was higher than the standard limit of $60 \mu\text{g}/\text{m}^3$ in most samples.
- Hazira:
 - The concentration of SO_2 , NO_x , CO, Benzene, Hydrocarbons, Non-methane VOC, and VOC were within the standard limit in all the samples.
 - PM_{10} and $\text{PM}_{2.5}$ were higher than the standard limit of $100 \mu\text{g}/\text{m}^3$ and $60 \mu\text{g}/\text{m}^3$ respectively in all samples.

- Ghogha:
 - The concentration of SO₂, NO_x, CO, Benzene, Hydrocarbons, Non-methane VOC, and VOC were observed within the standard limit in all the samples.
 - PM₁₀ and PM_{2.5} were higher than the standard limit of 100 µg/m³ and 60 µg/m³ respectively in most samples.
- The high concentration of PM₁₀ and PM_{2.5} could be attributed to vehicular movement in the port area, and surrounding road dust, causing the dispersion of emitted particulate matter in the ambient air.

Preventive measures:

- Water sprinkling on roads, end-to-end pavement of roads, and tree plantations can considerably reduce dust suspension and its emission during vehicular movement.
- Practice should be initiated by using a mask as a preventative measure, to avoid the health risk associated with the inhalation of dust particles to the person working in the port area.

2.2 Drinking water monitoring

Drinking water sampling was carried out once a month at three locations i.e., 1 at Dahej, 1 at Hazira, and 1 at Ghogha. The analysis results were compared with the stipulated standards as per IS 10500:2012 and mentioned in **Table 6** below.

Table 6: Results of drinking water quality monitoring

Sr. No.	Parameters	Unit	Acceptable limit	Permissible limit	Location Code and Sampling Date		
			Standards IS 10500:2012		DW-D 17-12-2024	DW-H 17-12-2024	DW-G 23-12-2024
1	pH	-	6.5-8.5	No Relaxation	8.08	8.32	7.76
2	EC	µS/cm	-	-	268	324	2400
3	TDS	mg/L	500	2000	142	172	1290
4	Chloride	mg/L	250	1000	25.62	63.07	433.62
5	Total Hardness	mg/L	200	600	105	35	435
6	Calcium as Ca	mg/L	75	200	55	5	175
7	Magnesium as Mg	mg/L	30	100	50	30	260
8	Turbidity	NTU	1.00	5.00	1.24	0.6	BQL● (QL=0.5)
9	Fluoride as F	mg/L	1	1.5	BQL● (QL=0.3)	BQL● (QL=0.3)	1.19
10	SO ₄	mg/L	200	400	BQL● (QL=10)	BQL● (QL=10)	265.69
11	Na	mg/L	-	-	11.13	51.14	291.40

Sr. No.	Parameters	Unit	Acceptable limit	Permissible limit	Location Code and Sampling Date		
			Standards IS 10500:2012		DW-D	DW-H	DW-G
					17-12-2024	17-12-2024	23-12-2024
12	K	mg/L	-	-	BQL● (QL=5)	BQL● (QL=5)	BQL● (QL=5)
13	NO ₃	mg/L	45	No relaxation	6.22	11.48	20.16
14	NO ₂	mg/L	-	-	BQL● (QL=0.1)	BQL● (QL=0.1)	BQL● (QL=0.1)
15	Odour	TON	Agreeable	Agreeable	1	1	1
16	Hg	mg/L	0.001	No relaxation	BQL● (QL=0.0005)	BQL● (QL=0.0005)	BQL● (QL=0.0005)
17	Salinity	PSU	-	-	0.13	0.16	1.23
18	Free Residual Cl ⁻	mg/L	0.2	1	BQL● (QL=2)	BQL● (QL=2)	BQL● (QL=2)
19	Pb	mg/L	0.01	No relaxation	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)
20	Cd	mg/L	0.003	No relaxation	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)
21	Fe	mg/L	0.3	No relaxation	BQL● (QL=0.1)	BQL● (QL=0.1)	BQL● (QL=0.1)
22	Total Cr	mg/L	0.05	No relaxation	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)
23	Hexavalent Cr	mg/L	-	-	BQL● (QL=0.01)	BQL● (QL=0.01)	BQL● (QL=0.01)
24	Cu	mg/L	0.05	1.5	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)
25	Zn	mg/L	5.00	15.00	BQL● (QL=0.5)	BQL● (QL=0.5)	BQL● (QL=0.5)
26	As	mg/L	0.01	0.05	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)
27	Color	Hazen	5.00	15.00	5	1	1
28	TSS	mg/L	-	-	BQL● (QL=2)	BQL● (QL=2)	8
29	Microbiological (MPN) (Total Coliforms)	CFU/100 ml	Shall not be detectable in any 100 ml sample		3200	950	3300
30	Mn	mg/L	0.1	0.3	BQL● (QL =0.04)	BQL● (QL =0.04)	BQL● (QL =0.04)

BQL – Below Quantification Limit, QL– Quantification Limit

Observations:

- The samples were collected from the respective drinking water sources at the monitored locations. The following were observed from the analysis of drinking water samples.
- At all three locations, Dahej, Hazira, and Ghogha, all parameters were within the standard acceptable limit, except the following.

- At Gogha, the concentration of Mg (260 mg/L) exceeded the permissible limit of 100mg/L. TDS, Chloride, Hardness, Calcium, and SO₄ exceeded their respective acceptable limit but remained within the permissible limit.
- The concentration of Total coliform content at Dahej, Hazira, and Ghogha was detected as 3200, 950, and 3300 CFU/100 ml respectively.

Preventive measures:

- The presence of the Total Coliforms in all samples indicates microbiological contamination. Therefore, regular cleaning and maintenance of the RO system is recommended. It is required to ensure an efficient operation of the disinfection system to prevent the contamination of water from coliform.

2.3 Noise level monitoring

Noise monitoring was conducted at all four locations, i.e., 1 at Dahej, 2 at Hazira, and 1 at Ghogha. The monitoring was conducted once a month at all the locations for 24 hours. The results of the noise monitoring are mentioned in **Table 7**. The results were compared with the prescribed limit of noise level as per the noise standards of Environment Protection Rules, 2000 as given in **Table 8**.

Table 7: Results of noise monitoring

Sr. No.	Location Code	Date of Monitoring	Day Time			Night Time		
			Max.	Min.	Leq.	Max.	Min.	Leq.
1	N-D	19-Dec-24	60.3	58.7	59.8	37.0	35.5	36.5
2	N-H1	24-Dec-24	56.9	38.8	50.9	44.6	37.4	39.9
3	N-H2	26-Dec-24	60.3	48.4	56.7	50.7	44.1	50.4
4	N-G	31-Dec-24	60.1	57.5	58.7	38.2	36.4	37.5

Table 8: Ambient air quality norms with respect to noise

Area Code	Type of area	Noise dB(A) Leq	
		Day time	Night time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silent zone	50	40

Observations:

- Average Leq noise levels, for Day-time and Night-time at all locations, Dahej, Hazira, and Ghogha, were found below the maximum permissible limits defined for “Industrial area”.

2.4 Soil quality monitoring

Soil quality monitoring was carried out at all three locations, 1 at Dahej, 1 at Hazira,

and 1 at Ghogha once a month. **Table 9** shows the analysis results of soil quality.

Table 9: Results of soil quality monitoring

Sr. No.	Parameters		Unit	Location Code & Date of Sampling		
				S-D	S-H	S-G
				17-12-24	17-12-24	23-12-24
1	Organic Carbon		%	0.12	0.2	0.77
2	Total Organic Matter		%	0.21	0.35	1.33
3	Inorganic Phosphate (Av. Phosphorous)		kg/Ha	0.64	1.04	0.99
4	Particle size distribution & silt content	Sand %	-	20.97	63.68	48.4
5		Silt %	-	34	21.28	28.72
6		Clay %	-	45.03	15.04	22.88
7	Texture	Type of soil	-	Clay	Sandy Loam	Loam
8	pH		-	9.95	9.43	8.65
9	Conductivity		dS/m	0.77	0.51	0.28
10	SAR		meq/L	1.72	0.94	0.17
11	Water Holding Capacity		%	63.99	44	64
12	Al		mg/kg	10603.23	6949.12	28464.78
13	Cr		mg/kg	53.34	49.3	95.9
14	Ni		mg/kg	27.06	23.91	46.96
15	Cu		mg/kg	50.09	40.15	84.16
16	Zn		mg/kg	38.38	37.79	70.15
17	Cd		mg/kg	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)
18	Pb		mg/kg	3.15	3.15	7.1
19	As		mg/kg	2.16	2.46	10.46
20	Hg		mg/kg	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)

BQL – Below Quantification Limit QL- Quantification Limit

To classify the soil quality, the soil quality standards- “Soil fertility class by Soil Health card 2015” & “Standard limit EU 2002” were adopted and shown in **Table 10** below.

Table 10: Soil quality standard

Soil fertility class by Soil Health Card (SHC 2015)				
Sr. No.	Parameter	Range & Interpretation of Result		
1	pH	Acidic <6.5	Normal 6.5-8.2	Alkaline >8.2
2	Electrical Conductivity (dS/m)	Normal <1	Medium 1-3	Harmful >3
3	Available Phosphorus (kg/Ha)	Low < 28	Medium 28-56	High >56
4	Organic Carbon (%)	Low < 0.5	Medium 0.5-0.75	High > 0.75
5	Zinc (mg/kg)	Low < 0.5	Medium 0.5-1.0	High >1.0

6	Copper (mg/kg)	Low < 0.2	Medium 0.2-0.4	High >0.4
Standard limit EU 2002				
7	Chromium (mg/kg)	150		
8	Lead (mg/kg)	300		
9	Cadmium (mg/kg)	3.0		
10	Nickel (mg/kg)	75		

Observations:

- The soil texture was identified as ‘Clay’ type at Dahej, ‘Sandy Loam’ type at Hazira and ‘Loam’ at Ghogha.
- The pH value in soil was found ‘Alkaline’ at Dahej, Hazira and Ghogha.
- Electrical Conductivity at Dahej, Hazira, and Ghogha was found to be in the 'Normal' category.
- Available phosphorus falls under the ‘Low fertility’ quality class at all three locations.
- The Organic carbon content in the soil was found in the ‘Low Fertility’ class at the Dahej and Hazira locations, and the ‘High Fertility’ class at the Ghogha location.
- The values of Zn and Cu were found in the 'High fertility' class at all three locations.
- The heavy metals including Cr, Pb, Cd, and Ni were detected within permissible limits at all three locations.
- The overall quality of the soil at all three locations was found to have low essential nutrients, hence less suitable for plant growth.

2.5 Marine Water, Sediment & Ecology Monitoring

Marine water, sediment, and ecology monitoring was carried out at five locations, 1 at Dahej, 2 at Hazira, and 2 at Ghogha. The results and observations are mentioned below.

2.5.1 Marine Water Quality Monitoring

The analysis results of the marine water are presented in **Table 11** below. The results of marine water quality were compared with the water quality criteria for the designated best use for the coastal water stipulated by the ‘Environment (Protection) Act, 1986’ shown in **Table 12**.

Table 11: Result of marine water quality monitoring

Sr. No.	Parameters	Unit	Location code & date of sampling				
			MA-D	MA-H1	MA-H2	MA-G1	MA-G2
			17-12-24	17-12-24	17-12-24	23-12-24	23-12-24
1	EC	µS/cm	39,500	46,400	46,500	41,600	41,800
2	DO	mg/L	6.3	8.1	7.9	7.0	6.5
3	pH	-	7.73	7.90	7.91	7.72	7.78
4	Color	Hazen	5	5	5	5	1
5	Odor	TON	1	1	1	1	1
6	Turbidity	NTU	495	205	200	482	364
7	TDS	mg/L	26,752	32,106	32,045	27,826	27,996
8	TSS	mg/L	278	114	176	618	526
9	Particulate Organic Carbon	mg/L	4.26	1.36	2.05	2.54	3.23
10	COD	mg/L	35.5	48.2	27.3	34.3	32.4
11	BOD	mg/L	BQL● (QL=3)	BQL● (QL=3)	BQL● (QL=3)	BQL● (QL=3)	BQL● (QL=3)
12	Silica	mg/L	>5 (QL=5)	2.89	4.73	>5 (QL=5)	>5 (QL=5)
13	PO ₄	mg/L	1.04	1.02	0.64	3.57	1.70
14	SO ₄	mg/L	1863.7	2188.75	2372.25	2064.70	1759.20
15	NO ₃	mg/L	6.85	4.12	4.26	5.60	6.16
16	NO ₂	mg/L	BQL● (QL=0.1)	BQL● (QL=0.1)	BQL● (QL=0.1)	BQL● (QL=0.1)	BQL● (QL=0.1)
17	Na	mg/L	9645	9589	9582	9155	8474
18	K	mg/L	169	163	174	169	152
19	Mn	mg/L	0.24	0.16	0.12	BQL●	BQL●

Sr. No.	Parameters	Unit	Location code & date of sampling				
			MA-D	MA-H1	MA-H2	MA-G1	MA-G2
			17-12-24	17-12-24	17-12-24	23-12-24	23-12-24
						(QL=0.04)	(QL=0.04)
20	Fe	mg/L	2.27	2.75	3.51	0.68	0.88
21	Total Cr	mg/L	BQL● (QL=0.005)	0.0053	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)
22	Hexavalent Cr	mg/L	BQL● (QL=0.01)	BQL● (QL=0.01)	BQL● (QL=0.01)	BQL● (QL=0.01)	BQL● (QL=0.01)
23	Cu	mg/L	0.026	0.007	0.006	BQL● (QL=0.005)	BQL● (QL=0.005)
24	Cd	mg/L	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)
25	As	mg/L	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)
26	Pb	mg/L	0.003	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)	BQL● (QL=0.002)
27	Zn	mg/L	BQL● (QL=0.5)	BQL● (QL=0.5)	BQL● (QL=0.5)	BQL● (QL=0.5)	BQL● (QL=0.5)
28	Hg	mg/L	BQL● (QL=0.0005)	BQL● (QL=0.0005)	BQL● (QL=0.0005)	BQL● (QL=0.0005)	BQL● (QL=0.0005)
29	Oil & grease	mg/L	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)
30	Microbiological (MPN) (Total Coliforms)	MPN/ 100 ml	1600	110	13	11	17
31	Density	kg/m ³	>1000 (QL=1000)	>1000 (QL=1000)	>1000 (QL=1000)	>1000 (QL=1000)	>1000 (QL=1000)
32	Microbiological (MPN) (Fecal Coliforms)	MPN/ 100 ml	140	21	2	11	4
33	Floating material (Scum, Petroleum products)	-	ND	ND	ND	ND	ND

BQL – Below Quantification Limit, QL- Quantification Limit, ND- Not detected

Table 12: Water quality criteria: Primary water quality criteria for designated best uses for coastal waters [As per “The Environment (Protection) Act, 1986]

Parameters	SW-I	SW-II	SW-III	SW-IV	SW-V
pH	6.5 – 8.5	6.5 – 8.5	6.5 – 8.5	6.0 – 9.0	6.0 – 9.0
Dissolved oxygen (as O ₂), mg/l, min	5 or 60% of saturation value, whichever is higher	4 or 50% of saturation value, whichever is higher	3 or 40% of saturation value, whichever is higher	3 or 40% of saturation value, whichever is higher	3 or 40% of saturation value, whichever is higher
Color & Odour	No noticeable color or offensive odour	No noticeable color or offensive odour	No noticeable color or offensive odour	No noticeable color or offensive odour	None in such concentrations that would impair any usages specifically assigned to this class
Floating matters	No visible, obnoxious floating debris, oil slick, scum	Nothing obnoxious or detrimental for use purpose	No visible, obnoxious floating debris, oil slick, scum	10 mg/l max. (including Oil & grease & scum / petroleum products)	-
Oil & grease, mg/L max. (including petroleum products)	0.1	-	-		-
Suspended solids	None from sewage & industrial origin	-	-	-	-
Heavy metals •Mercury, mg/L (as Hg) •Lead, mg/L (as Pb) •Cadmium, mg/L(as Cd)	•0.001 •0.001 •0.01	-	-	-	-
Turbidity, NTUmax.	-	30	30	-	-

Parameters	SW-I	SW-II	SW-III	SW-IV	SW-V
Fecal coliforms, MPN/100ml,max	-	100	500	500	500
BOD, mg/L, 3 days at 27°C, max	-	3	-	5	-
Dissolved iron,mg/L max (as Fe)	-	-	0.5	-	-
Dissolved manganese, mg/L max (as Mn)	-	-	0.5	-	-
Sludge deposits,solid refuse, floating solids, oil & grease,scum	-	-	-	-	None except for such a small amount that may result from discharge of appropriately treated sewage & or industrial waste
SW-I: Salt pans, shell fishing, mariculture, and ecologically sensitive zone SW-II: Bathing, contact water sports, and commercial fishing SW-III: Industrial cooling, recreation (non-contact), and aesthetics SW-IV: Harbor waters SW-V: Navigation and controlled waste disposal					

Observations:

Analysis results of the pH, DO, BOD, and floating materials showed the suitability of marine water for Harbour Waters. There were no oil slicks or floating trash at the sampling locations.

2.5.2 Marine sediment quality monitoring

The quality of the marine sediment samples collected from Dahej, Hazira & Ghogha from 13th December'24 to 12th January'25 has been summarized in **Table 13**.

Table 13: Result of Marine Sediment Quality Monitoring

Sr. No.	Parameters	Unit	Location code and sampling date				
			MA-D	MA-H1	MA-H2	MA-G1	MA-G2
			17-12-24	17-12-24	17-12-24	23-12-24	23-12-24
1	Texture	-	Silt Loam	Clay Loam	Clay Loam	Silt Loam	Silt Loam
2	Organic matter	%	1.45	1.26	1.58	1.23	1.36
3	Inorganic phosphate (Av. phosphorus)	kg/Ha	1.59	1.21	1.39	1.45	1.37
4	Silica	g/kg	486.82	495.52	504.34	490.5	514.1
5	Phosphate (Total phosphorous)	mg/kg	162.69	303.41	308.65	334.9	453.72
6	Sulphate	mg/kg	69.93	134.63	125.08	130.49	162.66
7	NO ₂	mg/kg	0.55	0.44	0.33	1	0.79
8	NO ₃	mg/kg	5.56	6.76	5.56	6.7	5.69
9	Ca	mg/kg	2200	2500	2600	2500	2600
10	Mg	mg/kg	1708	2257	2562	2135	2440
11	Na	mg/kg	4002.58	6509.23	11775.1	9867.31	11108.9
12	K	mg/kg	1267.37	2431.04	3951.25	2873.01	3207.83
13	Al	mg/kg	9482.93	26686.15	30994.4	33843.82	35732.3
14	Cr	mg/kg	47.04	89.2	95.83	102.52	105.19
15	Ni	mg/kg	21.14	36.32	38.14	42.26	42.67
16	Zn	mg/kg	39.5	72.04	68.31	68.8	69.21
17	Cd	mg/kg	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)	BQL● (QL=1)
18	Pb	mg/kg	2.58	3.87	3.44	3.15	3.24
19	As	mg/kg	1.98	3.67	3.74	4.82	8.26
20	Hg	mg/kg	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)	BQL● (QL=0.005)
21	Cu	mg/kg	37.32	72.14	72.14	73.52	74.13

BQL – Below Quantification Limit QL- Quantification Limit

Observations:

The marine sediment quality at Dahej, Hazira, and Ghogha was compared based on the obtained results, and the following were observed.

- Organic matter in sediment consists of carbon and nutrients in the form of carbohydrates, proteins, fats, and nucleic acids. Sediment organic matter is derived from plant and animal detritus, bacteria, or plankton formed in situ, or derived from natural and anthropogenic

sources in catchments. Organic matter was found to be 1.45 % at Dahej, 1.26 to 1.58 % at Hazira and 1.23 to 1.36 % at Ghogha.

- Inorganic phosphate was found to be 1.59 kg/Ha at Dahej, 1.21 to 1.39 kg/Ha at Hazira and 1.37 to 1.45 kg/Ha at Ghogha. The capacity of sediment to retain or release phosphorus is one of the important factors, which influence the concentration of inorganic/organic phosphorus in the overlying waters (Saravanakumar, Rajkumar, Serebiah, & Thivakaran, 2008).
- The texture of the sediments was found to be 'Clay loam' at Hazira and 'Silt Loam' At Dahej and Ghogha locations.
- The concentration of Sulphate was found to be 69.93 mg/kg at Dahej, 125.08 to 134.63 mg/kg at Hazira and 130.49 to 162.66 mg/kg at Ghogha. The sulphate concentrations in marine sediment can vary naturally based on geological and hydrological factors.
- Nitrite concentration was found 0.55 mg/kg at Dahej, 0.33 to 0.44 mg/kg at Hazira, and 0.79 to 1 mg/kg Ghogha.
- Nitrate concentration was found to be 5.56 mg/kg at Dahej, 5.56 to 6.76 mg/kg at Hazira, and 5.69 to 6.7 mg/kg at Ghogha.
- Ca was found to be 2200 mg/kg at Dahej, 2500 to 2600 mg/kg Hazira and Ghogha. The source of Ca accumulation in marine sediment may be because of its naturally occurring element and its concentration can vary widely from local geological, hydrological conditions and environmental factors. It depends on various factors, including the composition of the underlying rocks, and the presence of calcareous organisms like coral reefs.
- Mg was observed to be 1708 mg/kg at Dahej, 2257 to 2562 mg/kg at Hazira and 2135 to 2440 mg/kg at Ghogha. Magnesium is an essential component of marine sediments and plays a significant role in marine ecosystem dynamics. The concentration of magnesium in marine sediments can depend on various factors, including the composition of the underlying rocks, sediment type, and local hydrological conditions.
- The values for Sodium in marine sediment were found to be 4002.58 mg/kg at Dahej, 6509.23 to 11775.1 mg/kg at Hazira and 9867.31 to 11108.9 mg/kg at Ghogha. Sodium concentrations in marine sediments are often correlated with salinity levels. It is an essential component of marine ecosystems.
- The value for Potassium was found to be 1267.37 mg/kg at Dahej, 2431.04 to 3951.25 mg/kg at Hazira, and 2873.01 to 3207.83 mg/kg at Ghogha. Potassium is an essential nutrient for plants and the composition of parent materials, sediment types, weathering processes, and local hydrological conditions.
- The Silica in marine sediment was found to be 486.82 g/kg at Dahej, 495.52 to 504.34 g/kg

at Hazira and 490.5 to 514.1 g/kg at Ghogha. Its presence in marine sediments can be attributed to both natural geological processes and biological contributions such as mineral weathering, biogenic silica, aquatic plants, and oceanographic processes.

- The Total phosphorus concentration was found to be 162.69 mg/kg at Dahej, 303.41 to 308.65 mg/kg at Hazira and 334.9 to 453.72 mg/kg at Ghogha. Phosphorus is an essential nutrient for marine ecosystems, playing a crucial role in biological processes. Its presence in marine sediments can have significant implications for nutrient cycling and ecosystem health. It can accumulate on the seafloor due to land runoff, natural weathering, decomposition of organic matter, local geology, etc.
- The sediment quality for the trace metals concentration was compared to the sediment quality guidelines (US Environmental Protection Agency, 1977; Augustynowicz, et al., 2013; Bi, Liu, Guo, & Lu, 2018; Saravanakumar, Rajkumar, Serebiah, & Thivakaran, 2008; Tanmay, Anilava, & Subrata, 2017; Tokatli, 2017; Perin, Bonardi, & Scotto, 1997; Onjefua, et al., 2020; Pazi, 2011), as shown in **Table 14**.

Table 14: Sediment Quality Guidelines (SQG) of the US Environmental Protection Agency (EPA) 1977

Metals	Sediment quality (mg/kg)		
	Not Polluted	Moderately Polluted	Heavily Polluted
As	<3	3-8	>8
Cu	<25	25-50	>50
Cr	<25	25-75	>75
Ni	<20	20-50	>50
Pb	<40	40-60	>60
Zn	<90	90-200	>200
Al	ND	ND	ND
Cd	-	<6	>6
ND- Not detected			

- As per the comparison of the metals to this guideline, a variation in the concentration of the metals was found. The concentrations of Pb & Zn were in the 'Not polluted' quality class at all three locations. Ni and Cd concentrations were in the 'Moderately polluted' quality class. Arsenic level at the Dahej location fell in the 'Not Polluted' class, at Hazira and MA-G1 locations it was classified as 'Moderately Polluted' class, while at the MA-G2 location was in the 'Heavily Polluted' class. The concentration of Cr and Cu were in the 'Moderately Polluted' quality class at Dahej and the 'Heavily Polluted' quality class at Hazira and Ghogha locations. Sediments are highly dynamic, constantly being deposited and carried away by water currents (Labenua, et al., 2023). The possible reasons for the higher concentration of some heavy metals may be attributed to the high sedimentation rate and due to various natural and anthropogenic factors.

2.5.3 Marine ecological monitoring

The various parameters monitored for Marine ecological monitoring are mentioned in **Table 15** and **Table 16** as follows:

Table 15: Results of marine ecological monitoring for Biomass, NPP, GPP, Pheophytin, Chlorophyll-a, Secchi depth & Particulate oxidizable organic carbon

Location code	Sampling date	Biomass	Net Primary Productivity (NPP)	Gross Primary Productivity (GPP)	Pheophytin	Chlorophyll-a	Secchi Depth	Particulate oxidizable organic carbon
		mg/L	mg/L/hr	mg/L/hr	mg/m ³	mg/m ³	meter	mg/L
MA-D	17-12-24	258	BQL	BQL	BQL	1.166	0.06	4.26
MA-H1	17-12-24	238	BQL	BQL	BQL	0.309	0.11	1.36
MA-H2	17-12-24	418	BQL	BQL	BQL	8.443	0.12	2.05
MA-G1	23-12-24	334	BQL	BQL	BQL	20.598	0.07	2.54
MA-G2	23-12-24	290	BQL	BQL	BQL	3.215	0.08	3.23

BQL – Below Quantification Limit

Table 16: Results of marine ecological monitoring for Benthic macroinvertebrates, Phytoplankton, and Zooplankton

Location code	Sampling date	Benthic macroinvertebrates (Counts/L)		Phytoplankton (Counts/L)		Zooplankton (Counts/L)	
		Observation	Individual count	Genera	Individual count	Observation	Individual count
MA-D	17-12-24	-	-	Nil	Nil	Nil	Nil
MA-H1	17-12-24	-	-	Gyrosigma	133333	Nil	Nil
				Navicula			
				Cymatopleura			
				Entomoneis			
MA-H2	17-12-24	-	-	Cyclotella	166666	Nil	Nil
				Navicula			
				Pseudoanabaena			
				Cymatopleura			

Location code	Sampling date	Benthic macroinvertebrates (Counts/L)		Phytoplankton (Counts/L)		Zooplankton (Counts/L)	
		Observation	Individual count	Genera	Individual count	Observation	Individual count
MA-G1	23-12-24	Mollusca Hydrobiidae	4	Nil	Nil	Nil	Nil
MA-G2	23-12-24	-	-	Nil	Nil	Nil	Nil

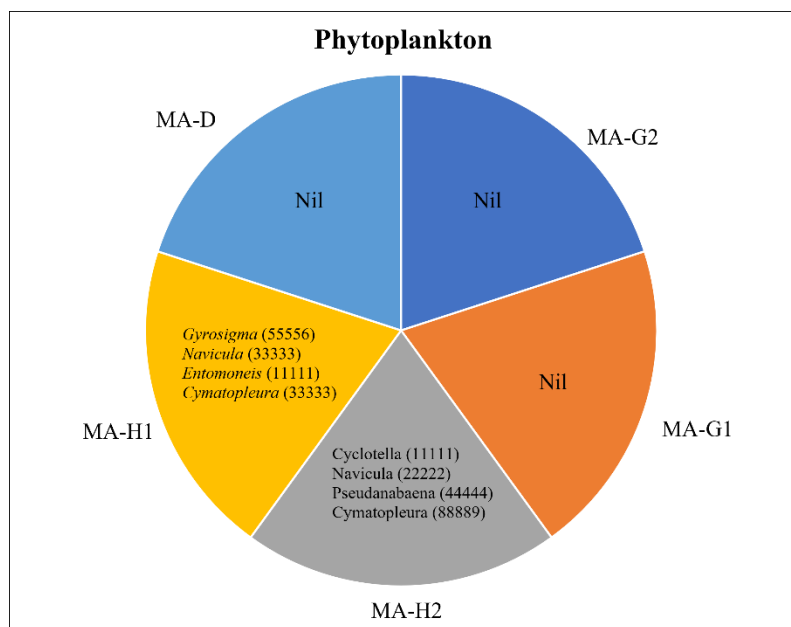


Fig. 5: Sampling locations with their respective phytoplankton genera counts

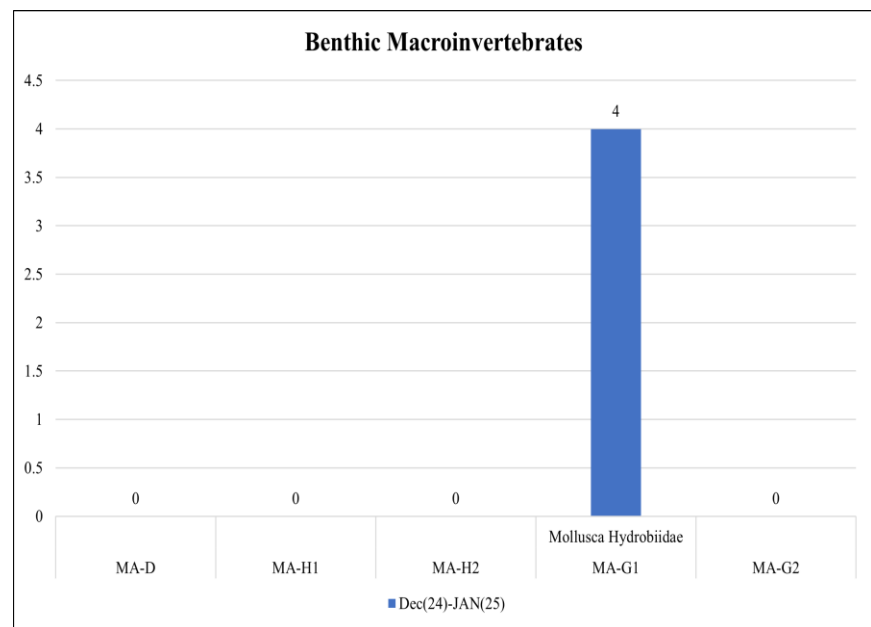


Fig. 6: Representation of benthic macrofauna obtained during monitoring period

Observations and Interpretation:

- Biomass content ranged from 238 to 418 mg/L; this is an indication of a low to moderate population of organisms in the sampling stations. As a reflection, chlorophyll content found is also very less across the monitoring locations. Phaeophytin levels were also not detected in any locations. (Lee, Jones, Rast, & Macero, 1995)
- The phytoplankton counts vary enormously between different monitoring periods. For instance, while Cymatopleura in MA-H2 is one of the highest individuals recorded with 88889 count/L, in other samples, no other genera were found. (Elser, et al., 1990)
- The entire monitoring period shows very low Secchi Depth values which might be attributed to wind-induced currents due to which the water clarity has decreased.
- Monitoring of benthic macroinvertebrates shows the presence of a class. i.e. Mollusca with few individuals of the Hydrobiidae family. This can thrive in a wide range of water temperatures, from cooler to moderately warm waters. This adaptability allows Hydrobiidae to persist across season transitions where other species may not survive.

2.6 Meteorological monitoring

To determine the prevailing micro-meteorological conditions at the project site the Automatic Weather Monitoring Stations (AWS) have been installed at the sites of Dahej, Hazira, and Ghogha at 10 m above the ground.

The summary of hourly meteorological observations recorded at the observatory, Dahej, Hazira, and Ghogha for 13th December 2024 to 12th January 2025 for the significant parameters has been mentioned in **Table 17**.

Table 17: Results of meteorological monitoring

Sr. No.	Location	Month	Wind direction	Wind speed (m/s)			Rain (mm/hr) (Avg.)	Relative humidity (%)			Temperature (°C)			Solar radiation (W/m2) (Avg.)
				Mean	Max	Min		Mean	Max	Min	Mean	Max	Min	
1	M-D	December 24- January 25	South - East	3.78	13.74	0.93	0.00	57.08	60.38	53.89	23.84	24.56	23.13	55.48
2	M-H		North-North-West	10.51	22.43	4.01	0.00	61.94	65.67	58.24	25.72	26.47	24.98	54.92
3	M-G		North	4.31	12.13	1.11	0.00	61.14	64.32	58.13	22.19	23.01	21.30	63.44

Observations:

The monthly average of maximum and minimum daily observed values summarized in **Table 17** have been discussed as follows.

• Temperature

Dahej: The ambient temperature varied from 23.13-24.56°C, with an average temperature of 23.84°C.

Hazira: The ambient temperature varied from 24.98-26.47°C, with an average temperature of 25.72°C.

Ghogha: The ambient temperature varied from 21.30-23.01°C, with an average temperature of 22.19°C.

• Relative humidity

Dahej: The Relative Humidity varied from 53.89-60.38%, with an average humidity of 57.08%.

Hazira: The Relative Humidity varied from 58.24-65.67%, with an average humidity of 61.94%.

Ghogha: The relative humidity varied from 58.13-64.32%, with an average humidity of 61.14 %.

• Rainfall

No rainfall was recorded at Dahej, Hazira, and Ghogha.

• Wind speed

Wind speed and direction play a significant role in transporting the pollutants and thus decide the air quality.

Dahej: The wind speed was recorded in the range of 0.93-13.74 m/s, with an average of 3.78 m/s.

Hazira: The wind speed was recorded in the range of 4.01-22.43 m/s, with an average of 10.51 m/s.

Ghogha: The wind speed was recorded in the range of 1.11-12.13 m/s, with an average of 4.31 m/s.

• Solar radiation

The average solar radiation at Dahej, Hazira, and Ghogha was 55.48, 54.92 and 63.44 W/m² respectively.

• Wind rose diagram

The wind-rose diagram has been drawn based on hourly wind speed and direction data. This wind rose reveals that the prevailing winds predominantly blow from a South-East (SE) direction at Dahej, a North-North-West (NNW) at Hazira, and a North (N) direction at Ghogha.

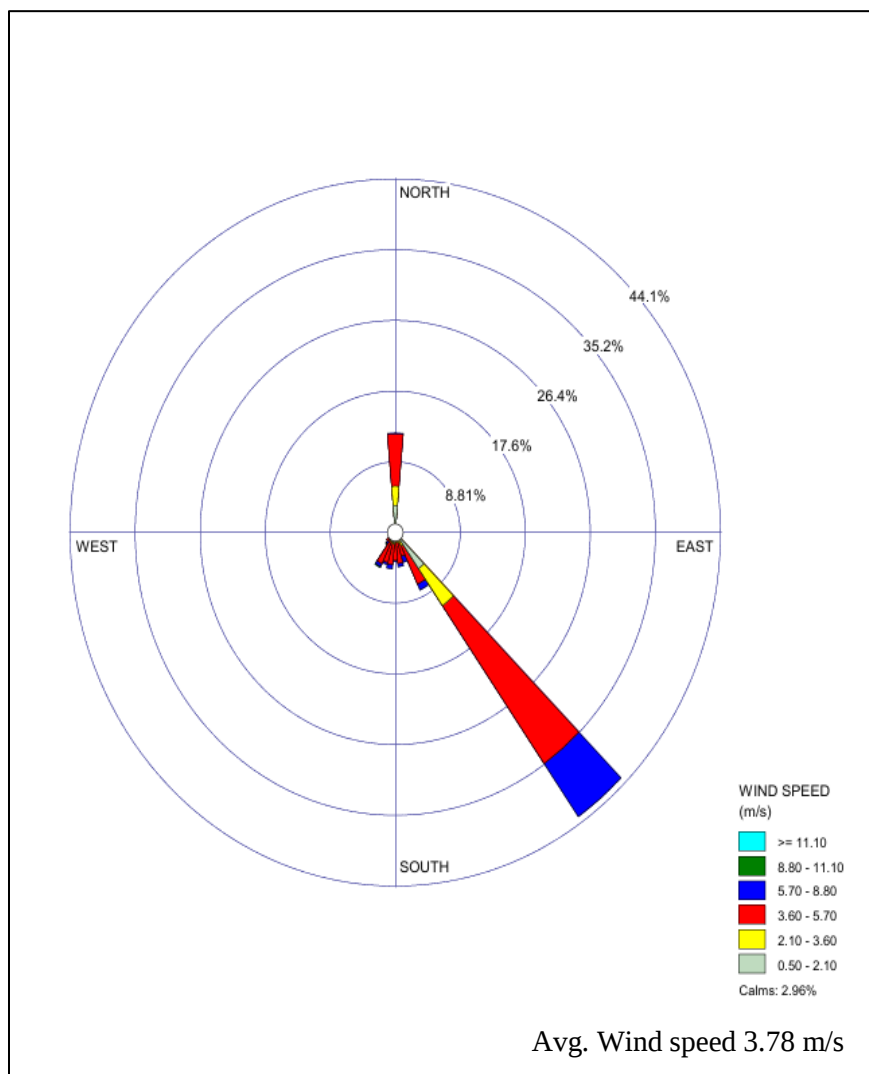


Fig. 7: Windrose diagram of Dahej

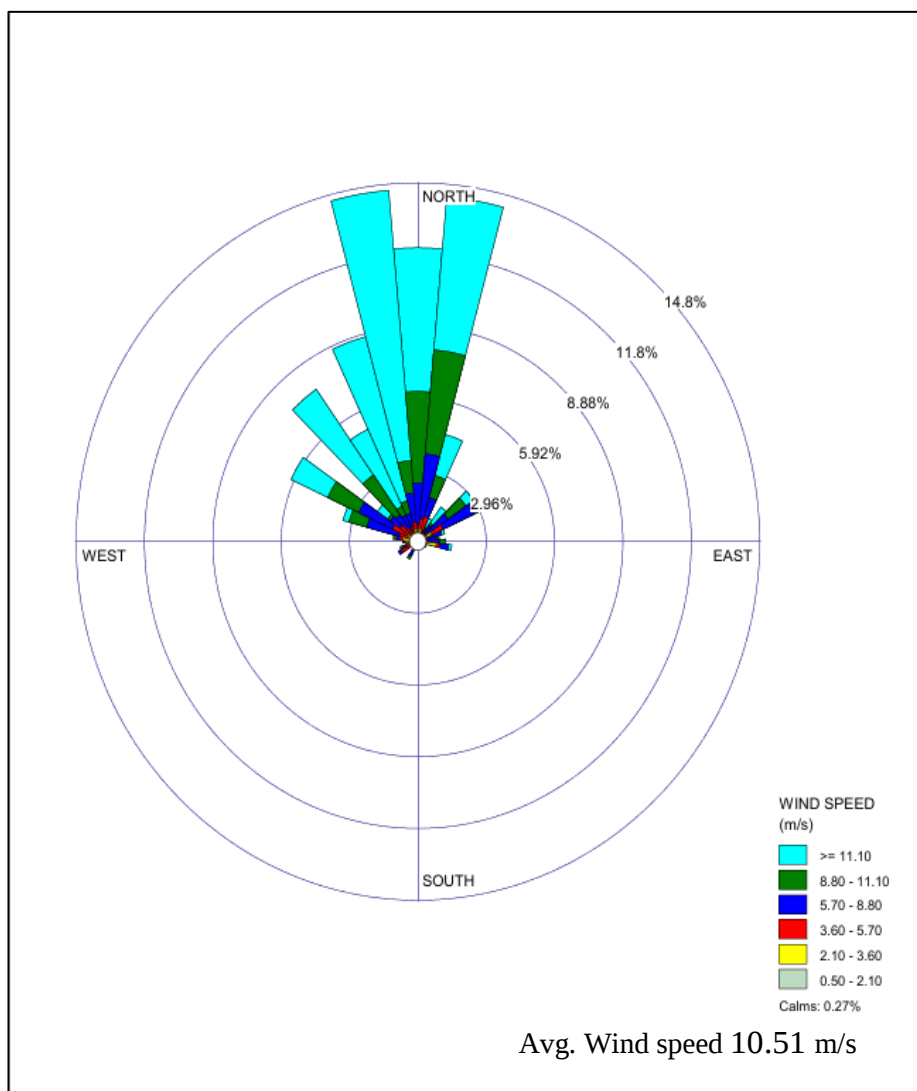


Fig. 8: Windrose diagram of Hazira

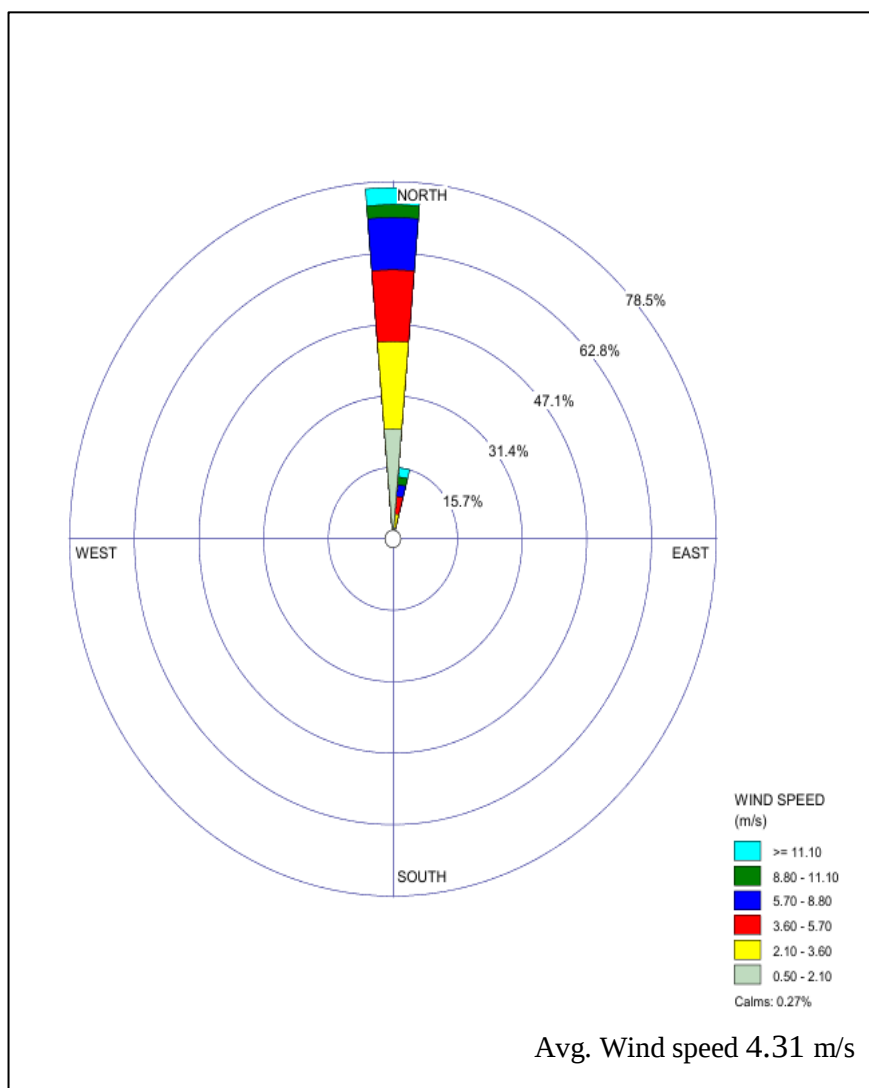


Fig. 9: Windrose diagram of Ghogha

2.7 Monitoring of DG stack emissions

DG sets at the Deendayal Port Authority (DPA) are generally utilized as a secondary power source. The sampling and monitoring of the DG stack emissions were carried out at Dahej, Hazira and Ghogha. The monitoring cycle was once a month. Sampling details of the locations are mentioned in **Table 18**.

Table 18: Result of DG stack emissions

Sr. No.	Parameters	Unit	DG Set standards	Location Code (DG-D)	Location Code (DG-H)	Location Code (DG-G)
				Sampling Date		
				20-12-2024	13-12-2024	31-12-2024
1.	Suspended Particulate Matter (SPM)	mg/Nm ³	150	111	119	120
2.	SO ₂	PPM	100	N.D.	N.D.	N.D.
3.	NO _x	PPM	50	29	28	41
4.	CO	%	-	0.0098	0.0079	0.0069
5.	CO ₂	%	-	1.65	1.26	1.38

N.D. – Not detected

Observations:

The results of DG stack emissions for Hazira, Dahej, and Ghogha are compared with the DG set standards and found within the prescribed limit for SPM, SO₂, and NO_x.

References

- Augustynowicz, J., A., Kolton, A., Baran, A., Kostecka-Gugala, W., & Lasek. (2013). Strategy of Cr detoxification by *Callitriche cophocarpa*. *Central European Journal Of Chemistry*, 295-303. doi:10.2478/s11532-012-0161-8
- Bi, B., Liu, X., Guo, X., & Lu, S. (2018). Occurrence and risk assessment of heavy metals in water, sediment, and fish from Dongting Lake, China. *Environmental Science and Pollution Research*. doi:10.1007/s11356-018-3329-8
- Elser, J., J., Marzolf, R., E., Goldman, & R., C. (1990). Phosphorus and nitrogen limitation of phytoplankton growth in the freshwaters of North America: a review and critique of experimental enrichments. *Canadian Journal of fisheries and aquatic sciences*, 47(7), 1468-1477. doi:10.1139/f90-165
- Hu, L., Wang, H., Cui, J., Zou, W., Li, J., & Shan, K. (2023). Temperature-Dependent Growth Characteristics and Competition of *Pseudanabaena* and *Microcystis*. *Water*, 15(13), 2404. doi:10.3390/w15132404
- Hylleberg, J., & Siegismund, H. (1987, April). Niche overlap in mud snails (Hydrobiidae): Freezing tolerance. *Marine Biology*, 94, 403-407. doi:10.1007/BF00428246
- Labenua, R., S. M., Yaqin, K., Paembonan, R. E., Ismail, F., & Harahap, Z. A. (2023). Distribution of heavy metals Hg, Pb, and Cr in the coastal waters of small islands of Ternate, Indonesia. *Acta Ecologica Sinica*. doi:10.1016/j.chnaes.2023.09.002
- Lee, G., Jones, L., Rast, W., & Macero, A. (1995, March). Secchi depth as a water quality parameter.
- Onjefua, S., Shaningwa, F., Lusilao, J., Abah, J., Hess, E., & Kwaambwa, H. (2020). Assessment of heavy metals pollution in sediment at the Omaruru River basin in Erongo region, Namibia. *Environmental Pollutants and Bioavailability*, 32(1), 187-193. doi:10.1080/26395940.2020.1842251
- Pazi, I. (2011). Assessment of heavy metal contamination in Candarli Gulf sediment, Eastern Aegean Sea. *Environmental monitoring and assessment*, 174, 199-208. doi:10.1007/s10661-010-1450-3
- Perin, G., Bonardi, M., & Scotto, S. (1997). Heavy metal pollution in central Venice Lagoon bottom sediments: evaluation of the metal bioavailability by geochemical speciation procedure. *Environmental Technology*, 18(6), 593-604. doi:10.1080/09593331808616577
- Saravanakumar, A., Rajkumar, M., Serebiah, J., & Thivakaran, G. (2008). Seasonal variation in physico-chemical characteristics of water, sediment and soil texture in arid zone mangroves

of Kachchh-Gujarat. *J. Environ. Biol.*, 29(5), 725-732. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/19295072/>

Tanmay , S., Anilava , K., & Subrata , S. (2017). Toxicity and bioaccumulation of chromium in some freshwater fish. *Human and Ecological Risk Assessment: An International Journal*, 23(7), 1655-1667. doi:10.1080/10807039.2017.1336425

The Oceans, Their Physics, Chemistry, and General Biology. (1942). New York: Prentice-Hall. Retrieved from <http://ark.cdlib.org/ark:/13030/kt167nb66r/>

Tokatli, C. (2017). Bioecological and statistical risk assessment of heavy metals in water, sediment, and fish from Dongting Lake, China. *Environmental Science and Pollution Research*, 34-47.

US Environmental Protection Agency, E. (1977). *Sediment Quality Guidelines (SQG)*.

Wang, C., Lek, S., Lai, Z., & Tudesque, L. (2017). Morphology of Aulacoseira filaments as indicator of the aquatic environment in a large subtropical river: The Pearl River, China. *Ecological Indicators*, 81, 325-332. doi:10.1016/j.ecolind.2017.06.020

ANNEXURE-I: Meteorological monitoring data



Dahej Meteorological Data

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
13-12-2024	00:00:00	22.2	21.7	21.1	45	42.6	40.8	0.1	1011.4	194.4	15.9	4.2	0.6	0
13-12-2024	01:00:00	21.4	21	20.5	46.3	45.2	43.7	0.1	1010.6	198.8	23.9	3.6	1.5	0
13-12-2024	02:00:00	20.6	20.3	19.9	48.9	46.9	45.7	0.1	1010.1	197.9	13.3	4.4	1.4	0
13-12-2024	03:00:00	20.1	19.7	19.5	51	50	48.7	0.1	1009.8	195.9	19.2	3.8	1.2	0
13-12-2024	04:00:00	20.6	19.9	19.5	51.7	50.5	48.2	0.1	1009.7	207.3	33.9	3.4	0.6	0
13-12-2024	05:00:00	21.2	20.6	19.5	51.9	47.2	44	0.1	1010	207.8	26.6	4.8	1.2	0
13-12-2024	06:00:00	19.6	18.7	18.3	58.1	55.7	51.5	0.1	1009.9	205.5	27.9	4.2	1.5	0
13-12-2024	07:00:00	19.5	19.1	18.8	51.9	50.9	50.3	0.1	1010.7	214.4	36.5	3.8	1.4	0
13-12-2024	08:00:00	19	18.6	18.4	53.2	52.4	51.5	4.8	1011.6	218.5	33.9	4.4	1.2	0
13-12-2024	09:00:00	20.3	19.3	18.4	52.9	49.4	46.8	44.8	1012.8	218.5	34.5	6.3	0	0
13-12-2024	10:00:00	23	21.3	20.1	47.3	44.5	40.5	133.1	1014.5	211.5	30.5	6.3	0	0
13-12-2024	11:00:00	25.6	24.1	22.9	40.9	38.8	36.1	202.3	1015	199.4	31.9	7.7	0.5	0
13-12-2024	12:00:00	27.4	26.1	25.1	37.8	36.1	34.2	248.1	1014.9	194.5	32.5	6.3	0	0
13-12-2024	13:00:00	28.6	27.8	27.2	39.9	35.3	32.1	270.3	1014.3	198.1	25.9	5.6	0	0
13-12-2024	14:00:00	29.3	28.8	28.3	39.1	35.8	31.6	260.9	1013.3	194.6	19.2	8.4	0	0
13-12-2024	15:00:00	29.7	29.3	29	36.3	33.8	27.3	219.2	1012.6	189.7	18.6	4.2	1.0	0
13-12-2024	16:00:00	30.1	29.7	29.3	28.3	26.8	24.9	158.5	1011.8	204.1	20.6	3.8	0	0
13-12-2024	17:00:00	29.5	28.8	28	29	27.7	26.2	83.5	1011.2	226	30.5	4.4	0.8	0
13-12-2024	18:00:00	28.2	26.9	25.6	31	29.6	28.1	17	1010.6	193.7	21.9	4.2	1.5	0
13-12-2024	19:00:00	25.8	25.1	24.2	34.4	31.4	29.8	0.1	1011.3	195.4	13.3	3.6	0	0
13-12-2024	20:00:00	24.5	23.9	23.2	36.1	35.2	34	0.1	1011.7	204	17.2	0.5	0	0
13-12-2024	21:00:00	23.4	22.8	22.1	36.9	35.9	34.5	0.1	1012.6	165.9	19.9	3.8	1.1	0
13-12-2024	22:00:00	22.3	21.8	21.5	38.6	37.4	36.1	0.1	1012.8	180.7	19.9	3.4	0.5	0
13-12-2024	23:00:00	21.8	21.6	21.3	37.8	36.6	35.4	0.1	1013.2	177.3	16.6	4.8	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
14-12-2024	00:00:00	21.7	21.5	21.3	36.5	34.8	33.7	0.1	1012.9	207.1	23.9	4.2	1.0	0
14-12-2024	01:00:00	21.6	21	20.1	38.3	36.1	34.2	0.1	1012.1	214	34.5	3.8	2.0	0
14-12-2024	02:00:00	20.3	19.9	19.5	40.1	39.2	38.1	0.1	1011.4	220.8	33.9	4.4	0	0
14-12-2024	03:00:00	19.6	18.9	18.4	43.8	42.2	39.9	0.1	1010.7	221.7	28.5	4.2	0.6	0
14-12-2024	04:00:00	18.6	18.2	17.9	46	45	43.6	0.1	1010.1	215.2	23.9	3.6	0.5	0
14-12-2024	05:00:00	18.1	17.7	17.3	48.5	47.1	45.9	0.1	1009.9	215	19.2	7.7	1.0	0
14-12-2024	06:00:00	17.5	17.3	17.1	49.8	49.1	48.2	0.1	1010	210.7	17.2	6.3	1.0	0
14-12-2024	07:00:00	17.3	16.7	16.4	52.3	51.1	49.3	0.1	1010.4	208.5	23.2	5.6	1.5	0
14-12-2024	08:00:00	16.9	16.6	16.4	51.8	51.3	50.5	3	1011.1	216.5	31.2	9	1.2	0
14-12-2024	09:00:00	19.7	18.2	16.8	51.2	47.5	44.8	45.2	1012.7	210	22.6	9.4	0.5	0
14-12-2024	10:00:00	22.3	20.9	19.5	46.4	41.1	36.3	140	1014.3	210.4	34.5	8.1	0.8	0
14-12-2024	11:00:00	24.5	23.3	22.2	37.6	35.5	33.7	205.9	1014.8	213	25.9	1.1	0.5	0
14-12-2024	12:00:00	27	25.8	24.4	34.4	31.1	28	252.1	1014.7	205.4	27.9	0.3	0	0
14-12-2024	13:00:00	29	27.9	26.9	29	27.1	25.3	272.3	1014.2	200	28.5	3.6	0	0
14-12-2024	14:00:00	30.3	29.6	28.8	25.7	24	22.6	263.4	1013.6	199.1	17.2	4.4	0	0
14-12-2024	15:00:00	30.7	30.2	29.9	29.4	25.4	23.5	222.8	1012.7	206.8	19.2	3.8	0	0
14-12-2024	16:00:00	31.2	30.5	29.9	30	24.7	22.9	152.4	1012.2	226.3	27.9	3.4	0.9	0
14-12-2024	17:00:00	30.2	29.6	28.8	26.8	25.3	23.5	84.7	1011.8	230.4	18.6	4.8	0.8	0
14-12-2024	18:00:00	29	27.8	26.3	27.6	25.6	24.1	16.9	1011.4	230	28.5	4.2	0	0
14-12-2024	19:00:00	26.5	25.7	25	31.5	29.9	27.4	0.1	1011.3	231.3	11.3	3.8	0	0
14-12-2024	20:00:00	25.1	24.7	24.1	34.1	32.7	31	0.1	1011.7	224.9	8.6	4.4	0	0
14-12-2024	21:00:00	24.4	23.7	22.8	39	35.8	33	0.1	1012.2	202.8	9.5	4.2	0.2	0
14-12-2024	22:00:00	22.9	22.3	22	44.1	41.7	38.6	0.1	1012.5	182.2	8.8	3.6	0.4	0
14-12-2024	23:00:00	22.3	22.1	21.9	44.7	42.2	38.2	0.1	1012.5	224.8	5.3	0.9	0.1	0
15-12-2024	00:00:00	22.3	22	21.6	40.4	38.6	37.3	0.1	1012.4	215.3	9.3	3.8	1.4	0
15-12-2024	01:00:00	21.8	21.3	20.9	40.1	38.6	37.4	0.1	1011.9	210	13.3	3.4	0.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
15-12-2024	02:00:00	21	20.3	19.7	42.2	41.1	39.9	0.1	1011.2	211.1	7.3	4.8	1.2	0
15-12-2024	03:00:00	20	19.7	19.5	42.3	41.7	41	0.1	1010.5	211.5	7.3	4.2	0.5	0
15-12-2024	04:00:00	20.1	19.7	19.4	43	42.3	41.1	0.1	1010.2	207.9	12.6	3.8	0.8	0
15-12-2024	05:00:00	20.3	19.9	19.3	42.7	40.1	39.2	0.1	1010.2	208.5	15.2	4.4	0	0
15-12-2024	06:00:00	19.4	19.1	18.6	44.3	42.1	40.9	0.1	1010.4	208.3	15.9	4.2	0.5	0
15-12-2024	07:00:00	19	18.5	18.1	44.3	42.8	40.2	0.1	1010.9	207.7	21.9	3.6	0.6	0
15-12-2024	08:00:00	19.3	18.9	18.6	43.2	41.7	40	2.9	1011.8	204.8	18.6	4.4	1.0	0
15-12-2024	09:00:00	21.7	20.6	19.3	41.6	37.9	35	44.2	1013.8	212.2	29.9	3.8	0.6	0
15-12-2024	10:00:00	23.6	22.3	21.5	37.4	36.2	34.1	144.5	1015.1	205.7	25.2	3.4	0	0
15-12-2024	11:00:00	25.7	24.8	23.4	36.5	33.6	30.5	212.5	1015.9	200.2	21.2	4.8	0	0
15-12-2024	12:00:00	29.3	27.5	25.5	34.8	30.7	26.5	261.2	1016.2	195	13.3	4.2	0	0
15-12-2024	13:00:00	30.7	29.8	29.1	29.2	26.3	22.7	279.9	1015.5	187.6	12.6	3.8	0	0
15-12-2024	14:00:00	32.1	31.1	30.4	30.5	25.9	21.9	267.7	1014.5	187.7	11.3	0.7	0	0
15-12-2024	15:00:00	33.2	31.4	30.2	40.9	32.2	19	228.2	1013.4	142.6	6.6	0.6	0	0
15-12-2024	16:00:00	31.1	30.2	29.4	44.4	38.4	31.4	161	1012.4	142.5	8.6	1	0.5	0
15-12-2024	17:00:00	31.6	31	30.1	35.4	31.5	29.2	89.7	1012.1	138.2	3.3	0.4	0	0
15-12-2024	18:00:00	30.2	28.7	27.2	35.8	33.1	30.9	18.4	1011.5	200.2	6.6	3.8	0	0
15-12-2024	19:00:00	27.4	26.6	25.8	34.1	32.3	31.2	0.1	1011.3	199.2	12.6	3.4	0	0
15-12-2024	20:00:00	26	25.2	24.7	38.5	36.5	34	0.1	1011.9	205.6	8.6	4.8	0.8	0
15-12-2024	21:00:00	24.8	24.4	24.1	41	39.4	38.2	0.1	1012.2	222.2	6.6	4.2	0	0
15-12-2024	22:00:00	24.3	23.8	23.4	45	42.6	40.6	0.1	1012.5	214.2	3.9	3.8	0	0
15-12-2024	23:00:00	23.5	23.1	22.8	48	46.3	44.6	0.1	1012.2	189.3	7.3	4.4	0.6	0
16-12-2024	00:00:00	23	22.4	21.6	53.2	49.8	47.5	0.1	1011.8	184	6.6	4.2	0	0
16-12-2024	01:00:00	21.7	21	20.2	58.2	55	53	0.1	1011	0	11.2	3.6	0.8	0
16-12-2024	02:00:00	20.3	19	18.2	65.2	62.3	58	0.1	1009.6	0	12.8	0.9	0.5	0
16-12-2024	03:00:00	18.3	17.6	17	69.9	68	65	0.1	1009	0	18.3	3.8	0.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
16-12-2024	04:00:00	19.2	18.4	17	70	64.1	60.6	0.1	1009.1	182.8	4.6	3.4	0.5	0
16-12-2024	05:00:00	19	18.5	18.2	62.6	61	59	0.1	1009	185.5	25.3	4.8	0	0
16-12-2024	06:00:00	18.5	18.3	18.1	62.8	59.2	53.4	0.1	1008.9	210.7	11.3	4.2	0	0
16-12-2024	07:00:00	18.4	18	17.6	56.5	54.5	52.7	0.1	1009.4	211.2	11.3	0.8	0.5	0
16-12-2024	08:00:00	18.9	18.1	17.6	56.6	55.4	54.1	2.8	1010.3	188.5	9.3	0.9	0.5	0
16-12-2024	09:00:00	22.3	20.6	18.7	54.4	49.5	41.7	43.1	1012.5	184.8	8.6	0.7	0.6	0
16-12-2024	10:00:00	25.7	23.8	22.2	42.4	39.5	36.6	139.8	1014.2	200.8	7.3	0.8	0	0
16-12-2024	11:00:00	28.4	27.1	25.6	40.2	35	28.7	205.2	1015.4	164.2	6.6	0.2	0	0
16-12-2024	12:00:00	29.1	28.3	27.8	32.4	28.8	24.8	256	1014.7	210.8	10.6	3.8	0	0
16-12-2024	13:00:00	31.7	30.8	29	26.4	24.1	21.3	277	1014.2	199.1	8.6	3.4	0	0
16-12-2024	14:00:00	32.6	32.1	31.6	35.4	27.6	20.9	263.9	1013.3	188.9	9.3	4.8	0	0
16-12-2024	15:00:00	32.8	31.6	31	39.3	35.3	32.2	222.8	1012	142.3	5.3	4.2	0.6	0
16-12-2024	16:00:00	32.1	31.7	31	33.8	30.8	28.5	166.9	1011.5	142.5	4.6	3.8	0.8	0
16-12-2024	17:00:00	31.8	30.2	29.2	36.5	34.3	30.4	89.2	1010.5	143.5	12.8	4.4	1.0	0
16-12-2024	18:00:00	29.4	27.7	26	38.1	33.9	31	18.1	1009.5	143	6.6	4.2	0	0
16-12-2024	19:00:00	26.1	25	24.3	51.9	44.8	37.9	0.1	1009.1	0	25.7	3.6	0.3	0
16-12-2024	20:00:00	25.5	25.1	24.2	50.9	44.2	41.6	0.1	1009.7	177	16.8	4.4	0	0
16-12-2024	21:00:00	25.3	24.9	24.4	46.9	45.9	44.6	0.1	1010	177.2	18.5	3.8	0.7	0
16-12-2024	22:00:00	24.6	24.2	23.9	46	45.3	44.3	0.1	1010.1	169	8.6	1.9	1.6	0
16-12-2024	23:00:00	24.1	23.8	23.3	47.1	45.9	44.7	0.1	1010.2	141.7	22.7	0.6	0	0
17-12-2024	00:00:00	23.5	23.1	22.7	47.7	46.1	44.9	0.1	1009.9	212.2	3.3	0.9	0.7	0
17-12-2024	01:00:00	22.8	22.5	22.3	50.3	48.7	45.6	0.1	1009.5	192.8	5.3	0.9	0.8	0
17-12-2024	02:00:00	22.6	22.4	22.2	50.7	48	45.1	0.1	1009.1	185	1.9	0.8	0.5	0
17-12-2024	03:00:00	22.4	20.6	19	64.7	55.8	46	0.1	1008.6	142.6	22.9	0.7	0.6	0
17-12-2024	04:00:00	19.9	19.4	19	77.7	69.8	64.3	0.1	1008	142.6	31.4	3.6	0.8	0
17-12-2024	05:00:00	20.9	20.5	19.7	76.3	59.5	53	0.1	1008.4	150.3	7.3	4.4	0.7	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
17-12-2024	06:00:00	20.8	20.4	19.6	57.5	53.1	50.7	0.1	1008.5	192	11.3	1.5	1.0	0
17-12-2024	07:00:00	19.8	18.6	17	65.3	55.7	50.3	0.1	1008.4	0	10.2	0.5	0	0
17-12-2024	08:00:00	19.6	17.8	16.8	65.2	60.7	55.6	2.7	1008.8	0	12.3	0.9	0	0
17-12-2024	09:00:00	23	21.2	19.5	61.3	56	50.1	41.2	1011.5	186.4	22.7	4.2	0	0
17-12-2024	10:00:00	25.5	24	22.9	53.9	51.8	49.1	128.1	1012.8	168.1	25.7	3.8	0.7	0
17-12-2024	11:00:00	27.2	26.4	25.4	50.7	47.2	44.1	192.6	1013.7	141.4	15.2	4.4	1.0	0
17-12-2024	12:00:00	29.4	28.4	26.9	47.1	34.5	26.1	246.5	1013.7	165.9	6.6	4.2	0.8	0
17-12-2024	13:00:00	30.1	29.2	28.3	37.4	33.3	30.7	262.8	1012.5	142.9	10.6	3.6	2.9	0
17-12-2024	14:00:00	30.1	29.6	29.3	35.2	33.5	31.4	256.6	1011.2	142.3	13.9	7.7	1.2	0
17-12-2024	15:00:00	31	30.4	30	33.1	26.4	22	224.3	1010.6	142.2	13.3	6	1.4	0
17-12-2024	16:00:00	30.6	29.8	29.1	25.7	24.4	21.6	142.3	1009.9	142.5	11.9	5.4	2.0	0
17-12-2024	17:00:00	30.2	29.8	29.2	28.9	25.8	22.6	95	1009.5	143.2	11.3	8.4	0	0
17-12-2024	18:00:00	29.4	28	26	39.3	33.9	28.5	18.7	1008.8	142	19.4	7	0.8	0
17-12-2024	19:00:00	26	25.1	24.5	48.2	43.4	38.8	0.1	1008.4	142.7	5.9	3.8	0.5	0
17-12-2024	20:00:00	24.7	24.5	24.2	53	49	47.2	0.1	1008.7	144.2	10.6	4.4	1.0	0
17-12-2024	21:00:00	24.4	23.6	23.1	59.9	58.3	52.7	0.1	1009.3	143	22.4	4.2	2.3	0
17-12-2024	22:00:00	23.3	22.8	22.5	62	59	54	0.1	1009.4	136.9	22.8	3.6	0.8	0
17-12-2024	23:00:00	23.4	23.1	22.6	57.2	50.1	48.1	0.1	1009.8	152.9	31.4	4.4	2.5	0
18-12-2024	00:00:00	23.1	22.9	22.7	49.8	47	44.1	0.1	1009.8	157.1	6.6	3.8	1.7	0
18-12-2024	01:00:00	22.9	22	21.4	55	51.7	44.6	0.1	1009.6	143.1	9.3	3.4	1.5	0
18-12-2024	02:00:00	21.7	21.1	20.7	57.8	55.9	52.8	0.1	1009.1	141.7	5.3	4.8	2.8	0
18-12-2024	03:00:00	20.9	20.3	20	60.7	58.4	56	0.1	1008.3	142.6	10.4	4.2	0.9	0
18-12-2024	04:00:00	20.1	19.8	19.6	60.7	58.4	56.9	0.1	1007.9	150.1	11.4	3.8	1.5	0
18-12-2024	05:00:00	19.8	19.3	18.9	64.9	62.5	57.5	0.1	1007.2	142.6	25.2	4.4	0	0
18-12-2024	06:00:00	19.2	19	18.6	67.5	65.8	62.8	0.1	1007.3	0	9.3	2.8	2.3	0
18-12-2024	07:00:00	18.8	18.6	18.4	68.1	66.7	65.6	0.1	1007.6	0	12.3	1.8	1.4	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
18-12-2024	08:00:00	20.4	19.1	18.4	71.4	67.9	65.2	3.1	1008.5	85	9	3.5	2.3	0
18-12-2024	09:00:00	22.9	21.4	20.4	65.7	59.9	54.7	38.1	1010.3	177.7	10.2	3.8	1.6	0
18-12-2024	10:00:00	23.8	21	18.1	54.9	51.8	47.7	117	1011.4	142.6	11.5	2.9	2.0	0
18-12-2024	11:00:00	21.1	20.5	19.5	47.9	41.8	35	178.4	1011.7	102.3	12.4	2.7	2.0	0
18-12-2024	12:00:00	20.6	20.1	19.7	41.3	36.2	33	233.9	1010.7	167	8.6	2.6	1.6	0
18-12-2024	13:00:00	21.8	20	17.9	44.7	35.2	28.7	247.2	1009.7	143.7	9.9	5.7	1.5	0
18-12-2024	14:00:00	19.8	19.3	18.9	39.9	33.5	31.4	256.6	1011.2	182	6.8	5.5	1.5	0
18-12-2024	15:00:00	19.2	19	18.6	39.1	26.4	22	224.3	1010.6	166	21.2	6.3	2.2	0
18-12-2024	16:00:00	18.8	18.6	18.4	36.3	24.4	21.6	142.3	1009.9	167.23	7.5	3.6	1.6	0
18-12-2024	17:00:00	20.4	19.1	18.4	28.3	25.8	22.6	95	1009.5	150.65	19.4	4.4	1.4	0
18-12-2024	18:00:00	22.9	21.4	20.4	29	33.9	28.5	18.7	1008.8	164.55	15.4	3.8	1.8	0
18-12-2024	19:00:00	11.2	3.4	1.3	52.1	50.8	49.5	0.1	1007.3	0	11.2	3.4	1.3	0
18-12-2024	20:00:00	25.4	24.3	23.4	53.4	51.2	48.3	0.1	1007.6	95.5	24.3	4.8	3.0	0
18-12-2024	21:00:00	25.6	25.1	24.5	51.8	50.1	48.7	0.1	1008.4	0	10.2	0.8	0	0
18-12-2024	22:00:00	24.7	23.1	22.2	63.2	57.6	51.3	0.1	1007.9	0	15.5	3.5	2.8	0
18-12-2024	23:00:00	23.5	22.7	22.2	66.8	62.9	57.9	0.1	1007.9	0	10.3	0.7	0.2	0
19-12-2024	00:00:00	23.8	22.7	22	66.2	62	57	0.1	1007.7	0	14.2	0.9	0.7	0
19-12-2024	01:00:00	22.4	22	21.5	71.9	68.9	66.1	0.1	1007.3	142.1	7.3	1.3	0.5	0
19-12-2024	02:00:00	21.7	21	20.2	80.2	73.5	69.9	0.1	1006.7	0	12	3.4	0.6	0
19-12-2024	03:00:00	20.4	19.9	19.6	90	86.4	80	0.1	1005.9	0	6	4.8	0.3	0
19-12-2024	04:00:00	20.1	19.8	19	91.2	90.3	89.3	0.1	1005.9	0	23	4.2	0.1	0
19-12-2024	05:00:00	19.3	19	18.8	94.4	92.7	90.8	0.1	1005.2	0	25.3	3.8	0	0
19-12-2024	06:00:00	19.4	19.1	18.7	98	94.7	93.1	0.1	1005.6	0	24.2	4.4	0	0
19-12-2024	07:00:00	19.5	19.1	18.4	97.9	95	94.1	0.1	1006.3	0	12.3	4.2	0.2	0
19-12-2024	08:00:00	19.6	18.8	18.2	98.4	96.9	95.1	2.6	1007.1	0	11.8	3.6	0.1	0
19-12-2024	09:00:00	22.7	21.1	19.4	95.3	90.5	83	36.1	1009.3	0	20	1.1	0.4	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
19-12-2024	10:00:00	25.4	23.9	22.6	83	73.2	59	103.3	1011.1	0	14.5	0.5	0	0
19-12-2024	11:00:00	27	26.3	25.3	61.4	53.6	45.7	168.8	1011.8	173.6	9.1	2.6	1.8	0
19-12-2024	12:00:00	29.5	28	26.8	49.9	42.8	35.6	217.5	1011.8	142.6	29.3	3.8	1.0	0
19-12-2024	13:00:00	30.7	30.1	29.3	38.6	35.8	33.7	236	1011.2	0	23.4	3.4	1.4	0
19-12-2024	14:00:00	30.7	28.9	27.8	54.2	49.2	34.5	220.9	1009.5	142.6	9.3	4.8	0.6	0
19-12-2024	15:00:00	29.4	28.6	28.3	52.1	50.1	45.2	189.8	1008.5	142.6	9.3	4.2	1.8	0
19-12-2024	16:00:00	30	29.6	29	47.5	44	40.6	136	1007.9	142.6	14.2	3.8	2.0	0
19-12-2024	17:00:00	29.1	28.1	27.4	48.2	46.3	44.1	70.4	1007.3	142.6	24.2	4.4	1.6	0
19-12-2024	18:00:00	27.5	26.3	24.9	51.3	48.5	46.2	12.3	1006.8	0	10	0.8	0	0
19-12-2024	19:00:00	25.1	24.2	23.9	52.6	49.2	45.2	0.1	1006.5	0	11.4	3.6	2.5	0
19-12-2024	20:00:00	24.3	23.7	23.3	51.6	48.8	46.1	0.1	1006.9	0	12.5	2.9	2.2	0
19-12-2024	21:00:00	23.6	23.3	23	54.3	52.6	51	0.1	1007.4	0	12.3	2.6	2.5	0
19-12-2024	22:00:00	23.3	22.9	22.3	59.7	55.6	53.1	0.1	1007.9	0	24.2	3.1	2.3	0
19-12-2024	23:00:00	22.5	22.2	21.9	74.3	66	59.6	0.1	1007.9	142.6	12.2	2.9	2.3	0
20-12-2024	00:00:00	22	21.4	21	80.1	76.9	72.8	0.1	1007.6	142.6	24.5	2.7	1.8	0
20-12-2024	01:00:00	21.8	21.5	20.9	82.7	78.5	71.7	0.1	1007.3	0	21.5	3.4	1.0	0
20-12-2024	02:00:00	21.5	21.1	20.8	82.5	77.7	74.3	0.1	1007.1	142.6	6.6	4.8	0	0
20-12-2024	03:00:00	21.5	21.2	20.9	79.3	77.1	74.6	0.1	1006.8	142.6	4.6	4.2	0	0
20-12-2024	04:00:00	21.2	20.7	20.3	78.4	77.3	76.7	0.1	1006.5	142.7	4.6	3.8	0	0
20-12-2024	05:00:00	20.5	20.3	20.1	83.5	78.8	77	0.1	1006.5	142.7	5.3	4.4	1.5	0
20-12-2024	06:00:00	20.2	20	19.8	85.7	83.1	81.1	0.1	1006.6	142.6	7.9	4.2	0.8	0
20-12-2024	07:00:00	20.2	19.8	19.6	81.2	79.6	78.1	0.1	1007.1	142.2	4.6	3.6	1.9	0
20-12-2024	08:00:00	20.3	19.8	19.5	79.2	78	75.1	2.5	1008.4	142.3	7.3	1.8	1.4	0
20-12-2024	09:00:00	21.9	21	20.1	75.3	71.7	68	35	1009.9	142.2	5.3	4.2	0.8	0
20-12-2024	10:00:00	23.8	22.8	21.8	68.5	65.2	61.6	99.4	1011.2	142.7	7.3	3.8	1.2	0
20-12-2024	11:00:00	25	24.3	23.7	62	59.4	55.8	155.8	1011.7	142.6	9.3	6.6	0.4	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
20-12-2024	12:00:00	26.3	25.7	24.8	56.6	52.8	50.2	199.4	1011.6	142.2	11.3	5	1.2	0
20-12-2024	13:00:00	27	26.6	25.9	50.8	48.5	46	233.5	1010.6	142.4	13.9	5.4	0.6	0
20-12-2024	14:00:00	28.1	27.5	26.7	47.4	43.5	40.2	222.5	1009.2	142.2	19.2	6.6	0.5	0
20-12-2024	15:00:00	28.3	27.8	27.5	41.7	37.7	36	187.8	1008.4	141.8	15.2	5.7	1.0	0
20-12-2024	16:00:00	28.5	28.1	27.7	36.9	35.7	34.4	137.5	1008	142.3	20.6	5.1	1.4	0
20-12-2024	17:00:00	28.1	27.4	26.5	40	37.5	35.6	67.4	1007.4	143	9.3	4.8	1.2	0
20-12-2024	18:00:00	26.7	25.7	24.6	44.9	40.6	37.9	12.7	1006.9	141.2	14.6	4.2	1.6	0
20-12-2024	19:00:00	24.7	24	23.5	52.1	49.4	44.8	0.1	1007	143.2	11.3	3.8	0.5	0
20-12-2024	20:00:00	23.6	23.3	22.9	56.3	53.9	51.7	0.1	1007.6	141.2	7.9	4.4	1.2	0
20-12-2024	21:00:00	23.1	22.9	22.7	56.8	56.2	55.7	0.1	1007.9	143	21.3	4.2	1.6	0
20-12-2024	22:00:00	23	22.8	22.5	57.9	56.7	55.6	0.1	1008.2	143.4	7.3	3.6	2.2	0
20-12-2024	23:00:00	22.7	22.3	22	60.5	58.4	57.3	0.1	1008.2	142.6	11.9	4.4	0	0
21-12-2024	00:00:00	22.2	21.7	21.2	68.9	64.9	60.4	0.1	1007.9	140.8	10.6	1.6	1.0	0
21-12-2024	01:00:00	21.4	21	20.6	72.6	70.7	68.6	0.1	1007.3	141.7	9.3	2.3	1.6	0
21-12-2024	02:00:00	20.8	20.5	20.1	75.7	73.9	72.4	0.1	1006.9	143	15.2	0.4	0.1	0
21-12-2024	03:00:00	20.4	20.1	19.8	78.9	77	75.5	0.1	1006.5	142.2	13.9	4.2	1.0	0
21-12-2024	04:00:00	20.1	19.8	19.5	82.1	80.1	78.7	0.1	1006.3	141.3	4.6	3.8	1.0	0
21-12-2024	05:00:00	19.7	19.5	19.2	85.3	82.6	81.1	0.1	1005.9	142.3	7.9	4.4	0.8	0
21-12-2024	06:00:00	19.6	19.3	19.1	86.2	85.7	85.2	0.1	1006.1	141.5	7.9	4.2	1.0	0
21-12-2024	07:00:00	19.5	19.4	19.2	86.9	86.2	85.6	0.1	1006.8	142	7.9	0.6	0	0
21-12-2024	08:00:00	19.5	19.2	18.9	87.8	85.8	82	2.1	1007.6	142.6	11.2	0.7	0.5	0
21-12-2024	09:00:00	21.1	20.2	19.3	82.1	75.3	70.4	33.8	1009.3	145.2	2.6	1.8	1.2	0
21-12-2024	10:00:00	23.3	22	20.9	70.6	66.8	61.8	96.7	1010.8	143.2	3.3	0.7	0.6	0
21-12-2024	11:00:00	26.2	24.8	23.2	62	57.4	53.3	143.1	1011.8	149.3	5.9	4.8	0.6	0
21-12-2024	12:00:00	27.7	26.5	25.8	56.7	53.8	50.8	196.9	1011.5	137.6	6.6	4.2	0	0
21-12-2024	13:00:00	29.2	28.2	27.6	51.7	49.9	47.7	217	1010.9	135.9	22.5	3.8	1.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
21-12-2024	14:00:00	30.7	29.7	26.2	48.2	40.8	37.4	207.5	1009.9	127.8	6.6	4.4	1.3	0
21-12-2024	15:00:00	31.5	27.6	24.3	47.5	39.6	34.9	165.8	1008.9	136.2	7.3	0.2	0	0
21-12-2024	16:00:00	30	28.8	28.3	54.3	52	46.8	113.1	1008	142.9	7.3	0.9	0.6	0
21-12-2024	17:00:00	28.7	28.2	27.6	57	55.3	53.3	56.4	1007.5	142.2	24.3	4.4	1.4	0
21-12-2024	18:00:00	27.7	26.1	24.6	62.3	58.4	55.6	8.8	1006.9	142.6	21.2	3.8	1.5	0
21-12-2024	19:00:00	24.8	23.6	22.7	82.2	69.4	62	0.1	1007.2	142.6	12.5	2.5	1.5	0
21-12-2024	20:00:00	23.5	22.9	22.6	82.2	79.7	77.1	0.1	1008.3	0	11.2	3.8	2.2	0
21-12-2024	21:00:00	23.8	23.5	23.3	77.7	76.3	74.5	0.1	1008.7	0	22.9	3.4	1.8	0
21-12-2024	22:00:00	23.9	23.3	22.8	80.4	76.2	71.7	0.1	1008.8	0	18.3	4.8	2.0	0
21-12-2024	23:00:00	23.4	22.3	21.3	83.2	79.3	73.7	0.1	1008.6	0	24.6	4.2	1.6	0
22-12-2024	00:00:00	22	21.5	21.1	84.8	82.1	77.5	0.1	1008	0	11.2	3.8	0	0
22-12-2024	01:00:00	21.8	21.1	20.4	86.2	83.5	81.6	0.1	1007.4	0	24.3	4.4	0	0
22-12-2024	02:00:00	21.1	20.8	20.4	90.3	85.9	83.2	0.1	1007	0	25.3	4.2	0	0
22-12-2024	03:00:00	22.3	21.9	21	93.8	89.2	85.7	0.1	1007.1	142.6	3.9	3.6	0	0
22-12-2024	04:00:00	22.2	21.9	21.6	89.2	87.3	85.7	0.1	1006.8	142.6	11.2	0.6	0	0
22-12-2024	05:00:00	22.2	21.9	21.6	87.3	80.8	77.2	0.1	1006.6	142.6	15.2	3.8	0.5	0
22-12-2024	06:00:00	22.4	22.1	21.9	83	79.5	76.2	0.1	1007.3	149	5.3	3.4	0	0
22-12-2024	07:00:00	22.6	22.4	22	81.8	74.1	69.1	0.1	1008.2	141.2	7.3	1.6	0.5	0
22-12-2024	08:00:00	22.5	22	21.3	93.1	82.4	71.9	1.4	1008.8	153.1	11.9	0.4	0	0
22-12-2024	09:00:00	22	21.3	20.8	100.9	97.8	93	23.1	1009.5	174.2	9.3	3.8	0	0
22-12-2024	10:00:00	23.9	22.7	21.2	100.6	92.6	85.9	70	1011.3	163.2	7.3	3.4	0	0
22-12-2024	11:00:00	26	24.7	23.6	86.2	79.4	69.6	116.7	1012	141.1	10.6	4.8	0	0
22-12-2024	12:00:00	27.1	26.6	25.9	69.6	61.4	53	144.9	1012.2	142.6	5.3	4.2	0	0
22-12-2024	13:00:00	28.6	27.4	26.2	59.5	53.2	50.6	162.8	1011.3	144.3	7.9	3.8	0	0
22-12-2024	14:00:00	28.7	27.9	27.2	54.2	50.6	46.3	166.4	1010.2	148.2	7.9	4.4	0	0
22-12-2024	15:00:00	29	28.1	26.8	53.4	47.7	44.1	109	1009.2	142.6	3.3	4.2	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
22-12-2024	16:00:00	27	26.5	26	56.4	53.8	50.8	32.7	1007.9	0	11.2	3.6	0	0
22-12-2024	17:00:00	26.3	26	25.6	60.4	56	53.2	26.7	1007.7	0	15.2	0.9	0	0
22-12-2024	18:00:00	25.8	25	24.2	63.3	60	57	4.7	1007.6	0	5.3	3.8	0	0
22-12-2024	19:00:00	24.3	23.9	23.6	66	62.3	58.8	0.1	1008	0	7.3	3.4	0	0
22-12-2024	20:00:00	23.8	23.5	23.1	73.7	68.1	63.7	0.1	1008.5	0	11.9	0.1	0	0
22-12-2024	21:00:00	23.2	22.7	22.3	76.7	74	72.7	0.1	1009	0	9.3	0.3	0	0
22-12-2024	22:00:00	22.9	22.6	22.1	84.4	81.3	76.5	0.1	1009.2	0	7.3	0.4	0	0
22-12-2024	23:00:00	22.3	22	21.7	87.7	84.4	82.4	0.1	1009	0	10.6	0.8	0	0
23-12-2024	00:00:00	22.4	22.2	22.1	93.7	91.2	87.6	0.1	1008.7	0	5.3	1.6	0.8	0
23-12-2024	01:00:00	22.4	22	21.7	95	93.7	92.7	0.1	1008.2	0	7.9	0.9	0	0
23-12-2024	02:00:00	22.1	21.8	21.5	98.1	95.5	94.7	0.1	1008	0	7.9	1.1	0.2	0
23-12-2024	03:00:00	22.4	22	21.5	98.2	95.8	94.6	0.1	1007.8	0	21.2	1.6	0.8	0
23-12-2024	04:00:00	22.2	21.9	21.6	95.2	94.5	93.8	0.1	1007.5	0	23.5	3.8	0.5	0
23-12-2024	05:00:00	22.3	22.2	22	95.1	88.8	81.3	0.1	1008	141.7	8.6	3.4	0.1	0
23-12-2024	06:00:00	22.3	22	21.8	81.8	76.5	72.6	0.1	1008.2	141.6	11.3	4.8	0	0
23-12-2024	07:00:00	22	21.9	21.7	75.3	73.5	71.9	0.1	1008.7	142.1	12.6	4.2	0.5	0
23-12-2024	08:00:00	22	21.7	21.4	75.9	73	71.5	0.3	1009.5	137.5	5.9	3.8	0	0
23-12-2024	09:00:00	23.1	22.3	21.7	73	69.2	63.8	11.8	1010.4	147.1	1.9	4.4	1.4	0
23-12-2024	10:00:00	24.8	23.7	22.9	67.6	64	59.4	62.8	1011.6	142.6	5.3	4.2	1.5	0
23-12-2024	11:00:00	26.7	25.5	24.6	61.9	58.1	54.1	110.2	1012.4	141.7	5.3	3.6	0.8	0
23-12-2024	12:00:00	27.7	26.9	26.3	56.7	54	51.3	146.9	1012.6	141.7	3.9	0.8	0	0
23-12-2024	13:00:00	28.4	27.7	26.3	54.2	50.6	48	142.7	1012	142.4	8.6	3.8	0	0
23-12-2024	14:00:00	27.9	26.6	25.7	56.8	53	44.1	132.2	1010.4	142.5	13.3	3.4	1.4	0
23-12-2024	15:00:00	28.1	27.8	26.9	44.3	41.2	39.4	125.6	1010	142.3	11.3	3.8	0.3	0
23-12-2024	16:00:00	28.1	27.1	26.6	44.5	42	38.9	70	1009.4	142.6	3.3	3.4	0.8	0
23-12-2024	17:00:00	28.1	27.1	26.2	44.9	41.6	39.2	50.4	1009.1	140.4	6.6	4.8	0.1	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
23-12-2024	18:00:00	26.3	25.6	24.7	49	46.8	44.5	9.8	1008.7	0	12.8	4.2	0.1	0
23-12-2024	19:00:00	24.8	24.1	23.7	55.9	52.3	48.7	0.1	1009.1	142.3	7.9	3.8	0.8	0
23-12-2024	20:00:00	23.9	23.4	22.7	61	57.9	53.7	0.1	1009.8	142.7	8.6	4.4	0.4	0
23-12-2024	21:00:00	23.1	22.9	22.7	60.6	55.5	53.1	0.1	1010.2	141.1	11.3	6.3	0	0
23-12-2024	22:00:00	23.1	22.8	22.5	57.4	56.1	54.1	0.1	1010.6	141.9	10.6	6.3	0	0
23-12-2024	23:00:00	22.7	22.5	22.2	59.9	57.3	54.9	0.1	1010.8	141.7	8.6	7.7	1.6	0
24-12-2024	00:00:00	22.4	21.9	21.4	66.8	64	59.9	0.1	1010.2	142.6	12.2	6.3	0.7	0
24-12-2024	01:00:00	21.7	21.4	21.1	68.4	65	62	0.1	1009.7	142.6	24.7	5.6	0	0
24-12-2024	02:00:00	21.4	21.1	20.8	64.7	61.9	60.2	0.1	1009.4	142.4	9.3	0.7	0.5	0
24-12-2024	03:00:00	21.6	21.1	20.7	67	62.5	59.4	0.1	1008.9	142	11.9	0.2	0	0
24-12-2024	04:00:00	20.8	20.3	20	67.7	65.6	61.5	0.1	1008.5	158.5	1.9	0.6	0	0
24-12-2024	05:00:00	20.2	19.9	19.6	68.7	66	64.2	0.1	1008.6	135.6	5.9	1.9	1.0	0
24-12-2024	06:00:00	19.7	19.4	19	70.1	66.7	64.5	0.1	1008.8	142.8	6.6	2.6	0.9	0
24-12-2024	07:00:00	19.2	18.8	18.6	75.3	72.3	67.3	0.1	1009.1	143.4	14.6	3.9	2.5	0
24-12-2024	08:00:00	19.1	18.7	18.4	73.7	71.8	68.9	1.4	1009.8	142.1	7.9	6.6	1.8	0
24-12-2024	09:00:00	20.5	19.5	18.6	69.1	65.9	63.4	30.9	1011.3	142.3	19.2	5.7	0.6	0
24-12-2024	10:00:00	22.8	21.5	20.3	63.5	59.1	55.8	90.4	1012.9	142.1	7.9	3.4	0.9	0
24-12-2024	11:00:00	24.6	23.8	22.6	56.7	54.1	51.8	151	1013.4	142.3	13.9	4.8	1.4	0
24-12-2024	12:00:00	26.3	25	24.2	53.5	50.8	46.6	198.5	1013.3	141.7	15.2	4.2	1.6	0
24-12-2024	13:00:00	27.4	27	26.2	47	43.5	40.6	222.7	1012.6	138.8	8.6	3.8	1.2	0
24-12-2024	14:00:00	27.2	26.7	26.5	44.6	41.6	39.4	216.4	1011.5	141.6	18.6	7.7	0	0
24-12-2024	15:00:00	27.7	27.2	26.7	41	37	35	186.9	1010.8	141.4	17.2	7	1.2	0
24-12-2024	16:00:00	27.8	27.3	26.9	37.7	35.2	31.6	133.9	1010.3	142	15.2	5.4	0	0
24-12-2024	17:00:00	27.4	26.9	26.5	33.3	27	22.7	70.1	1010	142.9	11.3	6.6	1.2	0
24-12-2024	18:00:00	26.7	25.5	24.1	39.1	31.7	20.7	16.6	1009.8	142.6	6.6	5.7	0.8	0
24-12-2024	19:00:00	24.3	23.5	22.8	45.4	41.9	38.2	0.1	1009.8	142.3	9.9	3.4	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
24-12-2024	20:00:00	23.1	22.9	22.7	46.3	44.7	43.6	0.1	1010.6	141.9	14.9	4.8	1.6	0
24-12-2024	21:00:00	23.1	22.8	22.4	48.9	47.3	44.3	0.1	1011.5	142.3	5.9	4.2	1.5	0
24-12-2024	22:00:00	22.7	22.3	22	55.5	52.6	48.5	0.1	1011.6	141.4	6.6	0.4	0	0
24-12-2024	23:00:00	22.2	22	21.6	60.4	57	54.3	0.1	1011.6	143.1	7.3	1.5	0.8	0
25-12-2024	00:00:00	21.8	21.6	21.3	63	60.7	58.8	0.1	1011.4	142.3	12.6	4.2	1.0	0
25-12-2024	01:00:00	21.5	21.1	20.8	74.1	69.5	62.9	0.1	1010.8	141.9	11.9	3.6	2.0	0
25-12-2024	02:00:00	20.9	20.6	20.2	79	76.3	73.9	0.1	1010.4	142.6	11.3	4.4	0	0
25-12-2024	03:00:00	20.4	20	19.7	84.1	81.3	78.7	0.1	1009.9	143.3	9.3	3.8	1.8	0
25-12-2024	04:00:00	20	19.8	19.6	85	82.7	80.4	0.1	1009.6	138.8	7.9	5.1	1.5	0
25-12-2024	05:00:00	19.8	19.2	18.9	85.1	84.2	81.6	0.1	1009.2	142.8	5.3	7.2	0.6	0
25-12-2024	06:00:00	19.2	19	18.8	85.7	82.6	80.1	0.1	1009.2	142.6	7.9	6.3	0.8	0
25-12-2024	07:00:00	19.1	18.4	18	86.8	84.2	81	0.1	1009.3	142.6	25.4	3.8	1.4	0
25-12-2024	08:00:00	18.6	18.1	17.9	87.3	85	82.2	1.8	1009.8	142.4	5.9	4.4	0.1	0
25-12-2024	09:00:00	20.4	19.4	18.4	82.3	76.1	72.7	31.4	1011.5	141.8	17.9	4.2	1.8	0
25-12-2024	10:00:00	22.9	21.6	20.3	73	68.7	62	95	1013.1	140.7	11.3	3.6	1.8	0
25-12-2024	11:00:00	25.3	23.9	22.6	62.3	57.2	51.9	152.5	1013.8	127.3	9.3	6.6	0	0
25-12-2024	12:00:00	27.8	26.4	25.1	52.8	49.1	45.5	188.8	1014.2	109.6	25.4	5.7	0	0
25-12-2024	13:00:00	29.8	28.7	27.6	45.9	42	38.4	208.5	1013.5	105.2	3.3	0.2	0	0
25-12-2024	14:00:00	30.7	30.1	29.6	43.2	39	36.9	202.6	1012.6	139.6	5.3	0.9	0	0
25-12-2024	15:00:00	30.4	28.9	27.9	51.3	47.6	42.3	165	1011.5	142.5	16.6	0.7	0	0
25-12-2024	16:00:00	28.1	27.9	27.6	52	50.3	49.2	110.1	1010.3	142.2	15.9	3.8	1.5	0
25-12-2024	17:00:00	27.9	27.7	27.2	51.9	49.8	48.4	53.6	1010	141.7	9.3	4.4	0.8	0
25-12-2024	18:00:00	27.4	26.1	25.1	59.9	56.4	51.7	7.4	1009.8	143.5	4.6	1.5	0.6	0
25-12-2024	19:00:00	25.3	25	24.8	62.8	57.8	55.3	0.1	1010.6	142.1	7.3	1.1	0	0
25-12-2024	20:00:00	25.2	24.9	24.7	67.6	65.5	62.7	0.1	1011.4	133.2	8.6	1.7	1.2	0
25-12-2024	21:00:00	25.1	24.9	24.8	68.3	67.2	65.9	0.1	1012.6	141.5	9.3	2.6	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
25-12-2024	22:00:00	25.2	24.7	24.1	67.2	66	65	0.1	1013.1	147.1	13.9	3.4	1.4	0
25-12-2024	23:00:00	24.2	23.8	23.4	70	68.6	67	0.1	1012.8	149.1	17.9	4.8	0	0
26-12-2024	00:00:00	23.6	23.1	22.8	73.7	72	69.8	0.1	1012.3	166.8	9.9	3.8	0.9	0
26-12-2024	01:00:00	23	22.6	22.3	76.5	75.3	73.5	0.1	1011.7	162.7	3.3	3.4	0.7	0
26-12-2024	02:00:00	22.6	22	21.6	80.8	78.6	75.4	0.1	1011.3	148.2	3.9	4.8	0.5	0
26-12-2024	03:00:00	21.9	21.6	21.4	82.7	81.8	80.4	0.1	1010.6	128	9.1	4.2	0	0
26-12-2024	04:00:00	21.7	21.5	21.4	83.1	82.7	82.3	0.1	1010.2	160.1	5.9	3.8	0	0
26-12-2024	05:00:00	21.6	21.4	21.2	84.3	83.5	82.7	0.1	1010.4	116.9	4.6	4.4	1.8	0
26-12-2024	06:00:00	21.4	21.2	21	86.2	85.1	84.2	0.1	1010.7	140.2	1.9	6.3	1.5	0
26-12-2024	07:00:00	21.4	21.2	21	87.1	86.4	85.5	0.1	1011.6	162.7	11.2	6.3	1.2	0
26-12-2024	08:00:00	21.7	21.4	21.2	86.8	86.2	85.5	1.2	1012.1	139.9	10.6	7.7	1.2	0
26-12-2024	09:00:00	23.6	22.5	21.5	86.4	82.3	77.5	25.5	1013.4	41.6	6.6	6.3	1.0	0
26-12-2024	10:00:00	25.3	24.3	23.4	77.6	72.9	68.6	66.6	1015	140.8	12.4	5.6	1.4	0
26-12-2024	11:00:00	27.2	26.2	25.1	68.8	64.5	61.1	106.6	1016	114.5	15.9	1.6	0.8	0
26-12-2024	12:00:00	28.8	27.8	26.9	61.6	58.7	55.1	148.5	1016	53.9	10.2	1.5	0	0
26-12-2024	13:00:00	30.8	29.7	28.7	56	52.4	49.1	167	1015.3	168.2	33.1	3.6	0	0
26-12-2024	14:00:00	31	28.4	27.6	63.6	59.8	49.6	155	1013.7	142.4	12.6	4.4	0	0
26-12-2024	15:00:00	28.3	27.8	27	64.2	61.9	60	123.6	1012.7	142.3	11.9	3.8	1.5	0
26-12-2024	16:00:00	27.5	26.9	26.5	66.2	64.1	62.1	86.3	1011.9	142.2	9.9	3.4	0.8	0
26-12-2024	17:00:00	27.3	26.8	26.2	65.7	64.2	63	44.3	1011.6	142.6	8.6	4.8	0.5	0
26-12-2024	18:00:00	26.4	25.7	25.2	67	65.8	64.1	5.1	1011.3	142.6	5.3	4.2	0	0
26-12-2024	19:00:00	25.4	24.9	24.4	72.1	68.3	65.7	0.1	1011.6	142.6	21.3	3.8	0.5	0
26-12-2024	20:00:00	24.5	24.2	23.9	72.5	71.6	70.3	0.1	1011.9	0	25.4	4.4	1.4	0
26-12-2024	21:00:00	24.9	24.5	23.9	72.1	68.7	67.1	0.1	1012.8	142.5	13.3	6.3	1.2	0
26-12-2024	22:00:00	24.8	24.5	24.1	76.8	73.4	69.8	0.1	1013	142.5	9.9	6.3	1.4	0
26-12-2024	23:00:00	24.3	24.1	23.8	77.7	76.3	74.9	0.1	1013.1	142.8	21.3	7.7	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
27-12-2024	00:00:00	24.3	23.8	23.4	79.2	77.6	76.8	0.1	1012.8	142.6	32.4	6.3	0	0
27-12-2024	01:00:00	23.6	23.3	23.1	82.9	81.3	79	0.1	1012.3	142.3	10.6	5.6	1.6	0
27-12-2024	02:00:00	23.6	23.3	23	84.5	81.9	81	0.1	1012	139.9	2.6	2.6	1.6	0
27-12-2024	03:00:00	23.1	22.8	22.5	88.4	86.7	84.3	0.1	1011.6	142.6	7.3	1.5	0.9	0
27-12-2024	04:00:00	23	22.6	22.3	86.9	86.3	85.9	0.1	1011.1	142.4	9.3	1.9	0.8	0
27-12-2024	05:00:00	22.4	22.1	21.8	87.8	87.1	86.1	0.1	1010.6	142.6	6.6	3.5	1.6	0
27-12-2024	06:00:00	22	21.7	21.5	88.7	87.8	87.3	0.1	1011	142.9	5.9	0.5	0	0
27-12-2024	07:00:00	22	21.7	21.5	87.6	86.8	86.2	0.1	1011.6	142.2	7.3	2.2	1.2	0
27-12-2024	08:00:00	21.6	21.3	21.1	87.8	87.2	86.4	1	1012.1	142.6	8.6	1.2	0.8	0
27-12-2024	09:00:00	22.6	21.9	21.3	86.6	83.5	79.2	26.8	1013.5	142.3	9.3	3.8	1.0	0
27-12-2024	10:00:00	23.3	22.9	22.4	79.5	76.9	72.8	55.3	1015	142.3	11.3	3.4	1.2	0
27-12-2024	11:00:00	23.8	23.3	22.9	73	70.8	69.1	78.5	1015.2	142.4	12.6	4.8	1.4	0
27-12-2024	12:00:00	25.2	24.4	23.1	71.6	65.8	62	149.3	1015.1	142	13.3	4.2	2.0	0
27-12-2024	13:00:00	26.7	25.9	25.1	62.9	59.9	57.6	174.4	1014.7	141.7	14.6	3.8	2.2	0
27-12-2024	14:00:00	27.5	27	26.6	58.8	57	55.6	181.4	1013.7	142.3	16.6	4.4	0.8	0
27-12-2024	15:00:00	28.3	27.5	27	56.1	53.4	50.3	158.3	1012.9	142.3	15.2	4.2	1.2	0
27-12-2024	16:00:00	28.2	27.8	27.4	53	51.3	50.4	108.4	1012.3	141.4	13.3	5.4	0.5	0
27-12-2024	17:00:00	28.4	27.7	26.6	56.6	52.4	50.3	54.6	1011.8	140.5	11.9	6.6	1.0	0
27-12-2024	18:00:00	26.7	25.7	24.8	65.9	60.3	56.1	8.1	1011.5	141.1	12.6	5.7	1.5	0
27-12-2024	19:00:00	24.9	24.4	24	67.8	66.4	65	0.1	1011.9	141.2	9.9	5.1	1.2	0
27-12-2024	20:00:00	24.2	24	23.8	68.1	65.8	63	0.1	1012.4	141.4	8.6	7.2	0.6	0
27-12-2024	21:00:00	24.2	23.8	23.6	64.6	63.7	62.9	0.1	1013.1	142.2	7.9	6.3	1.0	0
27-12-2024	22:00:00	24.1	23.8	23.4	64.5	62.3	60.4	0.1	1013.9	140.8	14.6	3.8	1.4	0
27-12-2024	23:00:00	23.6	23.1	22.7	65.7	64.4	63.2	0.1	1013.9	141.8	13.3	4.4	1.4	0
28-12-2024	00:00:00	23	22.7	22.4	70.4	67.9	65.4	0.1	1013.5	141.8	21.2	4.2	1.4	0
28-12-2024	01:00:00	22.6	22.1	21.9	72.8	71.8	70.2	0.1	1013	142.7	11.3	3.6	1.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
28-12-2024	02:00:00	22.1	21.8	21.6	72.6	71.5	70.8	0.1	1012.8	143	11.9	4.4	0	0
28-12-2024	03:00:00	21.8	21.5	21.2	72.4	71.3	70.4	0.1	1012.2	142.3	7.9	3.8	1.0	0
28-12-2024	04:00:00	21.4	21.1	20.9	74	73	72.2	0.1	1011.6	141.8	11.9	1.6	1.2	0
28-12-2024	05:00:00	21	20.7	20.4	76.3	74.7	73.8	0.1	1011.4	143.3	7.3	0.9	0	0
28-12-2024	06:00:00	20.6	20.3	20	76.7	75.5	74.7	0.1	1011.5	142.7	8.6	1.5	1.2	0
28-12-2024	07:00:00	20.2	19.9	19.6	78.3	76.9	76.2	0.1	1011.7	142.7	9.3	0.9	0.5	0
28-12-2024	08:00:00	19.8	19.6	19.5	79.5	78.8	78.1	1.3	1012.5	141.1	9.3	2.8	1.8	0
28-12-2024	09:00:00	20.8	20.2	19.6	78.9	76.9	75.1	28.6	1014.1	141.9	9.3	3.5	1.5	0
28-12-2024	10:00:00	22.2	21.6	20.7	75.5	71.8	68.9	78.8	1015.5	141.9	14.6	2.2	1.2	0
28-12-2024	11:00:00	24	23	22	69.2	66.7	63.6	132	1016.1	142.3	9.3	4.4	1.5	0
28-12-2024	12:00:00	25.1	24.5	23.8	64.3	62.5	60.5	173	1016.1	142.1	13.3	3.8	0.8	0
28-12-2024	13:00:00	26.2	25.4	24.8	62.2	60.6	58.4	192.9	1015.4	141.4	12.6	3.4	0.6	0
28-12-2024	14:00:00	27.1	26.5	25.8	61.1	59.7	57.7	186.8	1014.3	142.4	13.3	7.2	0	0
28-12-2024	15:00:00	27.7	27.3	26.9	60.1	58.9	57.4	162.1	1013.3	142.6	13.3	6.3	1.2	0
28-12-2024	16:00:00	27.8	27.4	27	61.6	59.8	57.4	112.7	1012.9	142.2	11.3	5.7	0	0
28-12-2024	17:00:00	27.2	26.6	26.1	62.9	62	60.9	57.6	1012.3	142.5	10.6	6.6	1.4	0
28-12-2024	18:00:00	26.2	25.3	24.3	71.4	66.5	62.6	10.6	1011.8	141	7.3	4.2	0	0
28-12-2024	19:00:00	24.5	23.9	23.6	74.7	73.8	71.3	0.1	1012	142.6	28.4	3.6	0.9	0
28-12-2024	20:00:00	24.1	23.9	23.6	74.7	72.4	70.1	0.1	1012.6	142.6	7.3	4.4	0.7	0
28-12-2024	21:00:00	24	23.7	23.3	73.1	71	69.3	0.1	1013.1	141.9	15.2	3.8	0.5	0
28-12-2024	22:00:00	23.4	23.1	22.7	77.1	75	72.7	0.1	1013.7	141.5	15.2	3.4	0	0
28-12-2024	23:00:00	22.9	22.5	22	80.4	78.3	76.8	0.1	1013.6	143.1	15.9	4.8	0	0
29-12-2024	00:00:00	22.2	21.8	21.4	83.2	81.1	79.1	0.1	1013.4	138.7	8.6	4.2	1.8	0
29-12-2024	01:00:00	22	21.8	21.5	79.3	75.4	72.6	0.1	1013.1	137.1	7.9	3.8	1.5	0
29-12-2024	02:00:00	21.7	21.4	21.2	73.1	72.6	72.2	0.1	1012.7	134	9.9	4.4	1.2	0
29-12-2024	03:00:00	21.5	21.2	20.6	76	72.5	71	0.1	1012.2	140.5	5.3	4.2	1.2	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
29-12-2024	04:00:00	20.9	20.6	20.4	77.1	75.7	74.3	0.1	1011.8	141.2	7.9	3.6	1.0	0
29-12-2024	05:00:00	21	20.8	20.6	83.9	81.1	77	0.1	1011.7	141.1	7.9	4.4	1.4	0
29-12-2024	06:00:00	20.8	20.3	20	88.9	84.8	81.6	0.1	1011.8	124.4	9.3	3.8	0.8	0
29-12-2024	07:00:00	20.2	19.8	19.4	93.3	91	88.7	0.1	1012.3	99.9	19.2	3.4	0	0
29-12-2024	08:00:00	20	19.6	19.4	94.2	93.8	93.1	1.7	1013	85.1	21.9	4.8	0	0
29-12-2024	09:00:00	21.8	20.4	19.7	93.5	89.7	85.3	31.7	1014.4	97.5	27.9	4.2	0	0
29-12-2024	10:00:00	23.8	22.6	21.6	85.5	81.1	76.2	88.9	1015.4	111.2	31.2	5.7	1.5	0
29-12-2024	11:00:00	26.7	25.4	23.6	76.3	69.7	64.5	146.6	1016.1	155.7	17.9	6.6	0.8	0
29-12-2024	12:00:00	29.4	28	26.5	64.8	59.4	53.9	192	1016.6	107.6	13.9	4.2	0.5	0
29-12-2024	13:00:00	30.8	30	28.9	56.1	53.6	51.2	217.3	1016.1	79.9	15.9	3.6	1.2	0
29-12-2024	14:00:00	32.3	31.2	29.9	55.7	51	47.6	208.3	1015.5	335.1	11.8	4.4	1.0	0
29-12-2024	15:00:00	32.2	30.8	29.8	54.3	51.7	47.3	182.8	1014.5	142.4	9.9	3.8	0.8	0
29-12-2024	16:00:00	30.4	29.9	29.5	55.2	53.7	52.3	133.3	1013.7	142.6	9.9	5.1	0.6	0
29-12-2024	17:00:00	30.5	29.3	28.4	60.1	56.4	52.3	68.2	1013.3	140	8.6	7.2	0.6	0
29-12-2024	18:00:00	28.6	27.7	26.7	62.5	59.6	58.1	13.7	1012.9	148.5	7.3	4.2	0	0
29-12-2024	19:00:00	26.9	26.3	25.8	65.3	63.9	62.5	0.1	1012.9	146.8	17.9	3.8	0	0
29-12-2024	20:00:00	25.9	25.2	24.6	69	67.3	64.4	0.1	1013.7	152.6	13.3	4.4	0	0
29-12-2024	21:00:00	24.7	24.4	24	70.3	68.7	66.2	0.1	1014.5	126.9	13.9	4.2	0	0
29-12-2024	22:00:00	24.2	23.6	23.1	69.3	67.7	66.3	0.1	1014.7	130.6	29.2	1.5	1.0	0
29-12-2024	23:00:00	23.3	22.9	22.5	70.3	69.1	68.5	0.1	1014.5	103.6	17.2	2.1	1.2	0
30-12-2024	00:00:00	22.7	22.5	22.1	72.2	71.1	69.9	0.1	1014	139	19.2	3.8	1.2	0
30-12-2024	01:00:00	22.2	21.9	21.7	76.8	74.6	72	0.1	1013.3	159.3	20.6	3.4	1.0	0
30-12-2024	02:00:00	22.3	22	21.6	78.6	76.5	75.3	0.1	1012.9	177	19.9	4.8	0.8	0
30-12-2024	03:00:00	21.8	21.5	21.1	82	79.9	78.3	0.1	1012.4	181.5	15.9	4.2	0.6	0
30-12-2024	04:00:00	21.3	20.9	20.4	85.7	83.7	81.8	0.1	1011.7	189.2	14.6	3.8	0	0
30-12-2024	05:00:00	20.6	20.3	20.1	87.8	87.1	85.5	0.1	1011.3	196.8	11.9	4.4	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
30-12-2024	06:00:00	20.4	20	19.8	88.4	87.6	86.9	0.1	1011.3	178.9	13.3	0.4	0	0
30-12-2024	07:00:00	20.2	20	19.7	88.3	87.1	86.4	0.1	1011.7	176.3	16.6	0.9	0	0
30-12-2024	08:00:00	20	19.4	19.1	90.5	89.7	88.1	1.6	1012.4	191.6	9.9	0.7	0.6	0
30-12-2024	09:00:00	21.2	20.1	19.3	89.4	85.2	79.7	31	1014.2	159.8	12.6	0.2	0	0
30-12-2024	10:00:00	24	22.5	21	79.8	74.8	69.4	91.6	1015.9	158	13.3	3.4	0.6	0
30-12-2024	11:00:00	27.3	25.6	23.9	69.5	64	58.1	150.3	1016.7	160.4	9.9	4.8	0	0
30-12-2024	12:00:00	30.2	28.3	27.1	59.1	55.5	49.4	195.1	1017	176.3	11.9	4.2	0	0
30-12-2024	13:00:00	31.3	30.3	29.6	53.9	51.1	48.9	219.6	1016.5	147.4	6.6	3.8	0	0
30-12-2024	14:00:00	31.8	31.3	30.8	50.3	48.1	46.1	213.4	1015.4	138.3	8.6	4.4	0.5	0
30-12-2024	15:00:00	31	30.7	30.3	51.2	50.1	48.9	188.6	1014	142.7	11.3	6.3	0.6	0
30-12-2024	16:00:00	30.9	30.5	30	51.4	50.2	49	138.4	1013.5	142.1	12.6	5.4	0.6	0
30-12-2024	17:00:00	30.2	29.1	28	55.8	53.1	51	75.9	1013.1	143.1	9.9	4.4	0	0
30-12-2024	18:00:00	28.1	27.1	26	64.1	59.8	55.5	16.7	1012.4	141.9	12.6	3.8	0	0
30-12-2024	19:00:00	26.2	25.5	25.1	71.2	67.1	63.9	0.1	1012.2	141.9	3.9	3.4	0	0
30-12-2024	20:00:00	25.5	25.1	24.8	73.4	71.7	69	0.1	1013.3	140.7	22.1	4.8	1.2	0
30-12-2024	21:00:00	25.6	25.3	24.9	72.7	70.8	69	0.1	1013.7	136.5	26.1	4.2	0.6	0
30-12-2024	22:00:00	25.1	24.7	24.5	74.5	73.1	71.2	0.1	1014.4	177.8	7.9	3.8	1.0	0
30-12-2024	23:00:00	24.6	24.3	24	74	72.6	69.9	0.1	1014.5	154.1	9.3	4.4	1.6	0
31-12-2024	00:00:00	24.2	23.8	23.3	70.2	69.5	69	0.1	1014	195.9	20.6	1.6	1.0	0
31-12-2024	01:00:00	23.5	23.1	22.8	71	69.9	69.2	0.1	1013.4	197.2	11.3	0.9	0.5	0
31-12-2024	02:00:00	23	22.5	22.1	74.1	72.8	70.8	0.1	1013	251.3	2.6	1.9	1.2	0
31-12-2024	03:00:00	22.4	21.8	21.3	77.9	75.8	73.4	0.1	1012.2	219.8	1.3	0.4	0	0
31-12-2024	04:00:00	21.4	20.5	19.7	85.3	81.8	77.8	0.1	1011.6	0	6.2	1.8	1.4	0
31-12-2024	05:00:00	20.2	19.7	19.4	87.5	86.6	85.2	0.1	1011.2	0	5.8	4.8	0.5	0
31-12-2024	06:00:00	20.5	20.1	19.7	90.1	88.1	86.8	0.1	1011.5	142.7	5.3	4.2	0.6	0
31-12-2024	07:00:00	20.1	19.8	19.6	90.7	89.7	88.7	0.1	1012	156.5	1.3	2.6	1.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
31-12-2024	08:00:00	20.2	19.6	19.3	93.1	91.8	90.3	1.4	1012.8	0	8.9	0.5	0.3	0
31-12-2024	09:00:00	22.6	21.3	20.1	91.4	85.5	79.9	28.5	1015	143.6	4.6	4.2	0.1	0
31-12-2024	10:00:00	25.8	24	22.4	80	74.2	66.9	86.6	1016.6	184.7	8.4	3.6	0.8	0
31-12-2024	11:00:00	28.5	27	25.6	67	62.7	58.4	139.1	1017.9	142.6	9.9	4.4	0.5	0
31-12-2024	12:00:00	30.4	29.7	28.3	58.7	52.3	46.2	198.2	1018.3	167.5	11.9	3.8	0.8	0
31-12-2024	13:00:00	31.4	30.8	30.1	50.5	48	44.7	216.2	1017.2	141.7	7.9	3.4	0	0
31-12-2024	14:00:00	30.8	30.5	30.2	51.9	49.8	48.1	213.8	1015.7	142.6	13.9	4.8	0	0
31-12-2024	15:00:00	30.8	30.4	30.1	49.3	44.3	39.4	187.2	1014.8	141.7	12.6	6.3	1.0	0
31-12-2024	16:00:00	30.9	30.7	30.4	40.1	38.4	36.3	140	1014.2	142.8	11.9	5.7	1.2	0
31-12-2024	17:00:00	30.6	30	29.2	42.3	40.1	37.9	77.6	1013.9	142.6	15.2	6.6	1.2	0
31-12-2024	18:00:00	29.4	28.5	27.2	51.4	45.6	41.4	16.5	1013.4	142.8	7.9	6.3	1.0	0
31-12-2024	19:00:00	27.4	26.6	26.3	53.7	51.6	50.7	0.1	1013	0	6.2	3.6	0.6	0
31-12-2024	20:00:00	26.5	25.8	25.3	58.6	54.8	50.8	0.2	1013.4	0	5.8	4.4	1.2	0
31-12-2024	21:00:00	25.9	25.7	25.4	58.4	57.3	55.1	0.2	1013.6	0	5.3	3.8	0.8	0
31-12-2024	22:00:00	25.8	25.1	24.7	60.2	57.6	55.3	0.1	1014	141	6.1	3.4	1.8	0
31-12-2024	23:00:00	25	24.6	23.9	65.2	60.7	59	0.1	1014.4	115.8	8.9	4.8	0	0
01-01-2025	00:00:00	24.3	24.1	23.7	63.9	62.1	60	0.1	1013.6	123.9	4.6	4.2	2.0	0
01-01-2025	01:00:00	24.2	23.7	23.3	68.7	64.4	60.2	0.1	1013.2	119.4	8.4	3.8	1.6	0
01-01-2025	02:00:00	23.6	23.3	22.8	73.8	71.1	68.4	0.1	1012.8	22.1	9.9	4.4	1.5	0
01-01-2025	03:00:00	22.9	22.2	18.6	77.4	75.1	73.5	0.1	1011.9	318.9	7.3	4.2	2.3	0
01-01-2025	04:00:00	22.4	21.8	21.2	80.6	78.9	77.2	0.1	1011.5	0	14.6	3.6	2.3	0
01-01-2025	05:00:00	21.4	20.5	17.1	86.9	84.2	80.4	0.1	1011	0	11.9	4.4	2.0	0
01-01-2025	06:00:00	19.3	14.9	13.7	93	90.7	86.7	0.1	1010	0	13.3	2.7	2.0	0
01-01-2025	07:00:00	14.4	12.7	11	92.6	91.6	90.8	0.1	1010.2	71.2	16.6	2.1	1.5	0
01-01-2025	08:00:00	20	18.8	10.7	93.9	93.1	92.4	1.7	1011.6	0	9.9	2.9	1.8	0
01-01-2025	09:00:00	22.4	21	19.8	93.5	88.3	80.9	30.7	1013.4	0	12.6	0.9	0.7	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
01-01-2025	10:00:00	24.5	23.3	22.3	80.9	76.3	72.4	93.4	1014.8	176.8	13.3	0.8	0.1	0
01-01-2025	11:00:00	28.1	26.5	24.5	72.7	64.7	59	147.3	1016.3	203	9.9	0.4	0	0
01-01-2025	12:00:00	29.7	29	28	59.3	56.9	55.4	190.9	1016.7	165.9	11.9	0.9	0	0
01-01-2025	13:00:00	32.5	31.1	29.4	57.2	50.5	45	227.5	1015.9	142.4	6.6	1.2	0.8	0
01-01-2025	14:00:00	31.3	30.1	29.7	57.6	55.5	51.2	219.9	1014	142.7	8.6	4.4	1.8	0
01-01-2025	15:00:00	30.8	30.4	30	56.6	54.5	53.2	194.9	1013.1	142.2	11.3	3.8	1.8	0
01-01-2025	16:00:00	31	30.6	30.2	54.5	52.5	50.7	143.6	1012.4	142.7	12.6	3.4	1.6	0
01-01-2025	17:00:00	30.6	29.8	29.1	55.3	53.3	51.3	77.2	1011.7	142.7	5.3	7.2	1.8	0
01-01-2025	18:00:00	29.2	27.8	26.3	63.4	57.9	54.7	19.8	1011	142.6	9.9	6.3	1.2	0
01-01-2025	19:00:00	26.5	25.4	24.7	70.6	68.1	63.2	0.1	1010.7	0	11.9	3.8	1.2	0
01-01-2025	20:00:00	25.6	25.1	24.7	70.1	57.7	48.5	0.1	1011.6	0	6.6	4.4	1.6	0
01-01-2025	21:00:00	25.7	25.4	25.3	66.9	61.9	54.1	0.1	1012.3	110.6	10.6	4.2	1.6	0
01-01-2025	22:00:00	25.7	25.5	25.3	67.3	64.6	62.4	0.1	1012.8	194	17.9	3.6	0	0
01-01-2025	23:00:00	25.4	25.1	24.7	67	64.6	63.2	0.1	1013.1	200.3	21.9	4.4	2.0	0
02-01-2025	00:00:00	24.8	24.5	24	68	67.2	66.4	0.1	1012.8	214.7	12.6	3.8	0.8	0
02-01-2025	01:00:00	24.2	23.6	23.3	70.8	69.5	67.7	0.1	1012.1	220.3	9.3	3.4	0.1	0
02-01-2025	02:00:00	23.4	23.1	22.7	73.1	71.8	70.6	0.1	1011.9	154.5	9.3	4.8	1.6	0
02-01-2025	03:00:00	23.1	22.9	22.6	70.7	69.3	68.5	0.1	1011.6	210.1	16.6	4.2	0.5	0
02-01-2025	04:00:00	22.7	22.4	22	74.6	72.2	69.7	0.1	1010.9	203.1	14.6	0.3	0	0
02-01-2025	05:00:00	22.1	21.5	20.8	80.4	77.3	74.4	0.1	1010.5	164	0.6	1.6	1.0	0
02-01-2025	06:00:00	20.9	19.7	19.2	87.8	84.2	80.2	0.1	1010.1	0	14.6	0.8	0.3	0
02-01-2025	07:00:00	19.3	19	18.8	92.1	89.7	87.6	0.1	1010.5	0	11.9	0.4	0.1	0
02-01-2025	08:00:00	21.3	20.3	18.9	93	87	81.8	1.5	1011.6	97.3	13.3	0.2	0	0
02-01-2025	09:00:00	23.5	22.3	21.1	81.9	74.8	67.9	27.1	1013.3	191.9	16.6	1.8	1.0	0
02-01-2025	10:00:00	25.9	24.7	23.3	68.3	62.1	56.7	98.2	1014.9	187.3	9.9	2.1	1.4	0
02-01-2025	11:00:00	28.6	27.5	25.8	57.6	55	52.4	159.7	1016.3	186.2	12.6	4.8	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
02-01-2025	12:00:00	31.4	30	28.3	54.9	50.2	46.9	202.1	1016.7	111.8	13.3	4.2	0	0
02-01-2025	13:00:00	32.8	31.7	30.8	50.3	46.2	41.9	223.5	1015.9	121.6	9.9	0.8	0	0
02-01-2025	14:00:00	34.1	33.1	32.4	46.7	42.2	38.6	218.6	1014.8	145.4	11.9	3.2	1.4	0
02-01-2025	15:00:00	34.8	33.3	31.7	52.2	45	37	188.7	1013.6	143	5.3	2.7	1.4	0
02-01-2025	16:00:00	32.1	31.1	30.1	54.9	52.9	50.7	131.4	1012.4	142.6	9.9	4.4	1.8	0
02-01-2025	17:00:00	30.7	30.3	29.9	54.6	52.1	50.7	75.8	1012.3	142.6	4.6	3.8	1.6	0
02-01-2025	18:00:00	30	29	27.7	59.7	55.8	52.3	18	1011.9	142.6	11.4	1.9	1.4	0
02-01-2025	19:00:00	27.8	26.2	25.3	70.3	66.2	59.5	0.1	1011.3	0	25.4	3.8	1.5	0
02-01-2025	20:00:00	25.5	24.8	24.1	76.8	73.3	70.1	0.1	1011.8	0	13.3	3.4	1.6	0
02-01-2025	21:00:00	27.1	26.1	24.2	76.3	63.8	58.1	0.2	1012.5	166.7	9.9	4.8	0	0
02-01-2025	22:00:00	27.3	26.9	26.3	59.9	52.7	48.5	0.2	1013	155.2	7.3	4.2	1.0	0
02-01-2025	23:00:00	27.2	26.9	26.2	50.3	48.3	47.1	0.2	1013.3	177	32.4	3.8	1.6	0
03-01-2025	00:00:00	26.3	25.6	25.2	52.4	51.4	49.4	0.2	1012.9	189.4	10.6	4.4	1.5	0
03-01-2025	01:00:00	25.7	25.4	25.1	49.8	48.9	47.5	0.2	1012.5	189.6	8.9	4.2	1.5	0
03-01-2025	02:00:00	25.4	24.9	24.4	54.3	50.6	47.8	0.2	1012.1	206.8	7.3	3.6	1.6	0
03-01-2025	03:00:00	24.7	24.4	23.9	55.7	53.9	51.7	0.2	1011.7	210.5	9.3	0.9	0.7	0
03-01-2025	04:00:00	24.1	23.1	22.3	58	56.3	53.6	0.2	1011.2	208	6.6	3.8	0.5	0
03-01-2025	05:00:00	22.5	21.8	20.8	59.3	56.5	54.4	0.2	1010.6	0	5.9	3.4	0.8	0
03-01-2025	06:00:00	20.9	19.8	18.6	76.8	66.5	59	0.1	1010.1	0	7.3	1.9	1.0	0
03-01-2025	07:00:00	19.8	19.3	18.7	77.6	76.5	73.8	0.1	1010.6	0	8.6	0.8	0	0
03-01-2025	08:00:00	21.3	20.7	19.6	73.9	69.4	63.4	1	1011.9	164.3	9.3	3.8	1.5	0
03-01-2025	09:00:00	24.1	22.5	21.1	63.8	55.2	47.3	21.8	1013.5	206.3	11.3	3.4	1.8	0
03-01-2025	10:00:00	25.6	24.9	24	53.1	48	44.2	111	1014.8	202.6	12.6	4.8	0	0
03-01-2025	11:00:00	27.8	26.6	25.4	53.2	47.1	38.5	174.5	1015.7	199.7	13.9	4.4	1.6	0
03-01-2025	12:00:00	30.2	28.6	27.6	39.6	36	32.4	219.2	1015.7	200	13.9	1.5	0.9	0
03-01-2025	13:00:00	33.6	31.9	30.1	33.1	29	25.2	234.2	1016	164.7	3.9	0.6	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
03-01-2025	14:00:00	35.2	34.6	33.2	30.4	25	22.3	225.3	1015.3	142.7	7.3	0.9	0.4	0
03-01-2025	15:00:00	34.7	33.4	32.6	41.1	35.7	30.1	193.7	1013.7	142.6	9.3	1.2	0.6	0
03-01-2025	16:00:00	33	32.1	31.4	43.7	42	39.8	143.2	1012.7	142.4	9.9	2	0.5	0
03-01-2025	17:00:00	31.6	31.1	30.6	44.1	42.6	41.2	82.7	1012.1	142.6	45.2	4.4	0	0
03-01-2025	18:00:00	30.9	29.6	27.2	44.5	42.6	40.9	22.7	1011.5	142.6	1.3	4.2	1.0	0
03-01-2025	19:00:00	27.4	26	24.9	60	51	43.9	0.1	1010.3	142.6	7.6	3.5	2.6	0
03-01-2025	20:00:00	26.6	25.5	24.9	60.7	57.7	53.7	0.2	1010.8	0	11.3	0.8	0.1	0
03-01-2025	21:00:00	26.5	24.9	23.2	67.7	59.4	53.6	0.2	1011.2	0	13.9	4.4	2.5	0
03-01-2025	22:00:00	25.4	24.3	23.1	68.5	58.9	52.1	0.2	1011.2	0	19.2	3.8	0.9	0
03-01-2025	23:00:00	25.8	25.5	24.3	55.8	48.2	45.7	0.2	1011.5	200.4	15.2	0.8	0.3	0
04-01-2025	00:00:00	25.8	24.6	23.6	58.6	52.6	46	0.2	1011.1	186.4	20.6	3.8	0	0
04-01-2025	01:00:00	24.9	24.6	24.4	55.1	52.8	50.1	0.2	1010.5	195.8	9.3	3.4	0	0
04-01-2025	02:00:00	25	24.6	24	50.4	47.7	46.4	0.2	1010.3	207.7	14.6	4.8	0	0
04-01-2025	03:00:00	24.1	21.4	19.7	71.5	62.7	48.9	0.1	1009.2	0	11.3	4.2	0	0
04-01-2025	04:00:00	20	19.5	19	78.3	74.2	71.4	0.1	1008.3	0	7.9	3.8	0.3	0
04-01-2025	05:00:00	20.1	19.5	19.1	81.7	77.7	74.2	0.1	1008.4	0	21.3	4.4	0.1	0
04-01-2025	06:00:00	19.8	19.5	19.1	82.3	79.7	77.6	0.1	1008.7	0	7.3	4.2	0.1	0
04-01-2025	07:00:00	19.6	19	18	82.2	79.4	77.4	0.1	1008.9	0	11.9	3.6	1.0	0
04-01-2025	08:00:00	20	18.2	17.7	83.8	81.7	73.9	1.4	1009.5	0	10.6	3.9	3.5	0
04-01-2025	09:00:00	24.5	22.2	19.8	74	61.3	50.3	20.2	1012.1	190.9	9.3	3.8	0.8	0
04-01-2025	10:00:00	27.2	26	24.4	50.8	42.9	38	111	1014.2	184.3	15.2	3.4	2.0	0
04-01-2025	11:00:00	29.2	28.3	27.1	38.3	35	32	172	1015	144.6	13.9	1.7	0.9	0
04-01-2025	12:00:00	30.5	29.9	29	38.4	35.6	32.7	212.5	1015.1	166.4	4.6	1.8	1.0	0
04-01-2025	13:00:00	32	31.1	30.2	38.3	35.3	32.1	230.5	1014.2	171.3	7.9	3.8	2.0	0
04-01-2025	14:00:00	34	32.8	31.2	38.4	33.5	27.5	228.7	1013.1	192.6	7.9	3.4	1.5	0
04-01-2025	15:00:00	34.3	33.2	32.6	40.2	35.5	32.2	198.9	1012.2	147.5	7.9	4.8	1.5	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
04-01-2025	16:00:00	33.4	33.1	32.6	40.5	35.7	31	148.8	1011.6	147.2	11.2	3.4	0.2	0
04-01-2025	17:00:00	33.7	31.9	30.2	35.4	32.9	30.5	87.2	1010.8	142.4	6.6	2.5	1.6	0
04-01-2025	18:00:00	30.4	29.1	26.6	48.4	41	32.4	24	1010	142.6	14.6	0.8	0.4	0
04-01-2025	19:00:00	26.7	25.4	24.6	55.8	52	47.4	0.1	1009.3	0	11.3	4.4	0.1	0
04-01-2025	20:00:00	25.5	24.8	24.3	55.1	50.2	43.7	0.2	1009.7	0	7.9	3.8	0.8	0
04-01-2025	21:00:00	24.8	23.5	22.9	59.1	54.1	47.7	0.1	1009.9	0	21.3	0.6	0.4	0
04-01-2025	22:00:00	23.7	23.5	23.2	49.6	46.1	43.7	0.1	1010.3	0	7.3	3.8	1.0	0
04-01-2025	23:00:00	24	23.5	23	56.8	50.1	45.8	0.1	1010.5	0	11.9	3.4	2.8	0
05-01-2025	00:00:00	24.3	23.9	23.1	63	59	56.7	0.2	1010.3	141.6	10.6	4.8	0.9	0
05-01-2025	01:00:00	23.9	23.1	22.2	73.3	67.3	62.8	0.1	1009.9	142.9	9.3	4.2	0.9	0
05-01-2025	02:00:00	22.4	22.1	21.8	76.3	75.1	73.1	0.1	1009.4	142.6	15.2	3.8	1.4	0
05-01-2025	03:00:00	22.2	22	21.8	77	74	65.6	0.1	1009.2	142.8	11.9	4.4	2.8	0
05-01-2025	04:00:00	22.2	22	21.7	67.2	65.1	63	0.1	1009	142.5	11.9	4.2	2.8	0
05-01-2025	05:00:00	21.8	21.4	21	68.4	65.8	63.5	0.1	1008.7	143.1	13.3	3.6	2.6	0
05-01-2025	06:00:00	21.1	20.8	20.6	72.5	71.4	68.2	0.1	1008.7	142.7	11.3	2.9	2.6	0
05-01-2025	07:00:00	21	20.8	20.5	77.2	73.7	71.5	0.1	1009.2	142.4	9.3	3.8	2.2	0
05-01-2025	08:00:00	20.9	20.6	20.4	78.3	77.3	76.3	0.6	1009.9	142.8	7.3	3.4	1.4	0
05-01-2025	09:00:00	23	21.9	20.7	77.6	72.7	67.9	29.5	1011.5	141.9	7.3	3.4	2.8	0
05-01-2025	10:00:00	24	23	22.4	70.1	67.7	63.6	57.8	1012.5	142.5	7.9	2.8	2.3	0
05-01-2025	11:00:00	25.6	24.1	23	66.9	61.8	55.7	98.9	1013.2	143.4	9.9	3.8	2.2	0
05-01-2025	12:00:00	26.6	26	25.4	56.7	53.5	49.8	196.3	1013.5	142.2	17.2	3.4	1.6	0
05-01-2025	13:00:00	28.7	27.5	26.4	50.3	46.6	42.7	223.1	1012.9	142.8	13.9	4.8	1.8	0
05-01-2025	14:00:00	30.1	28.9	28	44.6	41.7	36.5	208.1	1011.9	143.3	9.9	7.7	0.5	0
05-01-2025	15:00:00	30.1	29.5	28.7	42.3	35.5	33	171.6	1011.3	143.5	13.3	7.35	0.5	0
05-01-2025	16:00:00	30.3	29.4	28.6	38.1	35.8	34.2	128.7	1010.4	142.8	15.9	6.3	1.6	0
05-01-2025	17:00:00	29.6	29.1	28.5	40.7	38.3	35.8	77.1	1009.9	144.1	15.9	7.7	2.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
05-01-2025	18:00:00	28.7	27.4	26.1	48.5	43.6	40.3	17.3	1009.7	142.8	10.6	3.8	0.7	0
05-01-2025	19:00:00	26.3	25.4	24.9	53.5	50.8	46.8	0.1	1009.7	141.9	4.6	3.4	1.8	0
05-01-2025	20:00:00	25.1	24.7	24.3	59.2	57.5	53.4	0.1	1010.3	141.2	13.3	4.8	2.0	0
05-01-2025	21:00:00	24.5	24.3	24	60.2	58.3	56.4	0.1	1011	142.3	11.3	4.2	0.9	0
05-01-2025	22:00:00	24.2	24	23.6	61.1	59	57.4	0.1	1011.6	144.8	9.3	3.8	1.0	0
05-01-2025	23:00:00	23.7	23.2	22.9	62.8	59	54.4	0.1	1011.7	143.3	7.3	4.4	0.2	0
06-01-2025	00:00:00	23.1	22.7	22.4	57.7	55.8	53.8	0.1	1011.3	144.2	7.3	4.2	0.1	0
06-01-2025	01:00:00	22.6	22.2	21.8	60.6	57.8	54.8	0.1	1010.7	144.3	7.9	0.5	0	0
06-01-2025	02:00:00	22	21.6	21.2	58.4	56.1	54.1	0.1	1010.3	143.7	9.9	1.7	1.0	0
06-01-2025	03:00:00	21.4	20.9	20.5	57.4	52.9	49.6	0.1	1009.9	144.1	17.2	4.1	3.2	0
06-01-2025	04:00:00	20.7	20.2	19.5	59.5	53.8	49.9	0.1	1009.6	144.6	13.9	0.8	0.3	0
06-01-2025	05:00:00	19.7	19.5	19.3	61.6	59.6	58.6	0.1	1009.4	142.6	11.3	4.8	2.2	0
06-01-2025	06:00:00	19.5	18.9	18.5	66.2	64.1	61.5	0.1	1009.4	143.2	11.9	4.2	2.5	0
06-01-2025	07:00:00	19	18.8	18.5	67.6	65.8	64.1	0.1	1009.9	144.4	9.9	3.8	2.5	0
06-01-2025	08:00:00	19.2	18.8	18.4	69.8	68.1	66.8	1.2	1010.7	143.3	7.9	6.6	2.6	0
06-01-2025	09:00:00	21.7	20.3	19.1	67	64.1	60	21.3	1012.9	143.1	12.6	6.3	1.0	0
06-01-2025	10:00:00	22.8	22.1	21.5	60.4	57.8	54.6	102.5	1014.5	142.6	15.2	3.6	3.2	0
06-01-2025	11:00:00	25.1	24	22.7	54.9	50.8	47.9	163.4	1014.9	148.1	11.3	4.4	0.7	0
06-01-2025	12:00:00	26.5	25.7	24.9	49.1	45.5	41.8	205.5	1014.9	149.7	14.6	3.8	1.6	0
06-01-2025	13:00:00	27.2	26.7	26	45.3	43.5	41.4	227.3	1014	145	17.2	5.2	2.2	0
06-01-2025	14:00:00	28.5	27.7	26.7	45.2	42.7	37.9	218.9	1013.1	142.2	20.6	8.4	2.5	0
06-01-2025	15:00:00	28.7	28.3	27.9	41.6	38.9	36.6	188.1	1012.2	143.5	17.9	7	2.3	0
06-01-2025	16:00:00	28.6	28.2	27.8	38.2	35.6	33.2	140.4	1011.6	144.7	23.2	7.1	2.6	0
06-01-2025	17:00:00	28.3	27.7	26.9	38.7	35.5	33.7	79.7	1011.2	143	19.2	7.7	1.5	0
06-01-2025	18:00:00	27.2	26.1	24.8	49.5	43.4	38.6	20.1	1010.5	143.4	12.6	4.2	1.5	0
06-01-2025	19:00:00	25.1	24.9	24.5	48	42.1	40.7	0.1	1010.8	151.1	19.2	3.6	2.5	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
06-01-2025	20:00:00	24.7	24.3	23.9	45.9	43.9	41.3	0.2	1011.3	167.4	21.2	4.4	0.5	0
06-01-2025	21:00:00	24.1	23.2	22.2	65.2	54.2	45.3	0.1	1011.8	147.1	15.6	3.8	3.0	0
06-01-2025	22:00:00	22.4	22.2	22	65.3	62.9	57.7	0.1	1012.1	143.4	12.8	3.4	0.2	0
06-01-2025	23:00:00	22.5	22.1	21.6	57.9	55.9	53.8	0.1	1012.5	152.6	12.6	4.8	0.1	0
07-01-2025	00:00:00	21.8	21.3	20.9	54.6	52.5	51.4	0.1	1012.4	150.4	19.2	4.2	0.6	0
07-01-2025	01:00:00	21.2	20.7	20.2	59.4	57.3	54	0.1	1011.6	153.3	18.6	3.8	1.0	0
07-01-2025	02:00:00	20.4	20.1	19.8	58.8	57.9	57	0.1	1011.3	154.2	13.3	4.4	3.0	0
07-01-2025	03:00:00	20	19.7	19.4	58.8	57.7	56.8	0.1	1011	176	21.9	4.2	0.9	0
07-01-2025	04:00:00	19.6	19.1	18.5	61.1	58.4	56.5	0.1	1010.7	200.7	19.2	3.6	3.0	0
07-01-2025	05:00:00	19.1	18.5	18.2	65.5	64.2	61	0.1	1010.6	217	17.9	4.4	3.2	0
07-01-2025	06:00:00	19.5	19.2	18.5	66.9	63.5	62.2	0.1	1011.2	230.7	41.2	3.8	0.8	0
07-01-2025	07:00:00	18.8	18.5	18.1	69.6	67.7	66.5	0.1	1011.6	234.3	39.2	3.4	2.3	0
07-01-2025	08:00:00	18.7	18.4	17.9	69.9	67.4	65.7	1.8	1012.5	233.6	41.2	4.8	1.2	0
07-01-2025	09:00:00	19.5	18.7	18.2	69.9	68.4	65.5	24.1	1013.9	223.2	42.5	4.2	1.4	0
07-01-2025	10:00:00	21.8	20.7	19.4	65.6	59.5	54.5	99.8	1015.4	231.5	39.2	3.8	0.9	0
07-01-2025	11:00:00	23.8	22.6	21.3	56.1	50.2	45.8	161.8	1016.3	221.5	45.8	4.4	1.8	0
07-01-2025	12:00:00	25.5	24.5	23.7	45.9	43.7	40.8	207.8	1016	190.5	43.8	4.2	1.4	0
07-01-2025	13:00:00	26.9	26.1	25.4	41.2	37.2	32.2	233.6	1015.1	190.1	43.2	3.6	1.5	0
07-01-2025	14:00:00	28.2	27.3	26.4	35.1	32	28.6	237.8	1013.7	186.5	39.9	6.6	0.8	0
07-01-2025	15:00:00	29.1	28.6	27.8	32	29.2	27.1	205.2	1012.9	178.9	39.9	5.7	0.8	0
07-01-2025	16:00:00	29.3	28.9	28.4	28.7	25.5	22.7	155	1012	178.9	39.2	3.4	1.6	0
07-01-2025	17:00:00	29.4	28.8	28.1	26.9	24.5	21.6	93.3	1011.7	183.2	39.2	4.8	1.5	0
07-01-2025	18:00:00	28.3	27.2	25.8	32.1	28.2	25.7	25.6	1011.5	97.4	25.9	4.2	1.5	0
07-01-2025	19:00:00	26	24.6	23.8	43.7	40.1	32	0.1	1011.3	142	15.9	3.8	1.5	0
07-01-2025	20:00:00	23.9	23.1	22.4	48	45.6	43.2	0.1	1011.5	143.2	13.3	6.6	0.7	0
07-01-2025	21:00:00	22.5	22.2	21.8	48.9	47.3	45.3	0.1	1011.7	153.7	17.9	6.3	2.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
07-01-2025	22:00:00	22	21.5	20.9	45.5	42.3	40.3	0.1	1011.9	160.8	25.2	3.6	3.2	0
07-01-2025	23:00:00	21	20.6	20.2	45.6	44.1	43	0.1	1011.8	165.6	25.2	4.4	3.3	0
08-01-2025	00:00:00	20.4	19.9	19.3	50.3	47.1	45.2	0.1	1011.6	185.6	16.6	3.8	2.8	0
08-01-2025	01:00:00	19.7	19.4	19.1	52.4	51	48.6	0.1	1011.1	198.9	16.6	3.4	1.4	0
08-01-2025	02:00:00	20.4	19.9	19.2	49	46.7	44.8	0.1	1010.8	181.8	29.2	4.8	1.1	0
08-01-2025	03:00:00	19.3	18.7	18.3	52.2	51.2	48.6	0.1	1010	175.4	25.2	4.2	3.2	0
08-01-2025	04:00:00	18.7	18.5	18.4	52	50.4	49.6	0.1	1009.7	168.5	29.2	3.8	2.0	0
08-01-2025	05:00:00	18.6	18.1	17.8	54.2	52.4	49.9	0.1	1009.2	178.4	33.2	4.4	2.5	0
08-01-2025	06:00:00	18.1	17.8	17.5	56.7	55.5	53.9	0.1	1008.9	173	28.5	4.2	2.3	0
08-01-2025	07:00:00	17.7	17	16.4	63	59.7	56.3	0.1	1009.5	165.3	24.6	3.6	1.6	0
08-01-2025	08:00:00	16.5	16.2	15.9	65.9	64.7	63	1.7	1010.4	190.8	10.6	6.6	2.0	0
08-01-2025	09:00:00	17.9	17.1	16.3	64.3	60.9	57.9	18.3	1012.5	174.3	26.6	5.7	0.6	0
08-01-2025	10:00:00	21.5	19.5	17.8	58	52.7	46.6	109.6	1014.3	168.2	16.6	5.1	2.2	0
08-01-2025	11:00:00	24.8	23	21.3	46.8	42.4	37.4	173.7	1015	160.5	16.6	7.2	1.8	0
08-01-2025	12:00:00	26.5	25.6	24.3	40.3	37.7	35.5	221	1015.1	149.7	14.6	6.3	0.5	0
08-01-2025	13:00:00	28.6	27.5	26.3	38.3	25.2	18.2	247.8	1014.1	160	21.2	5.7	0	0
08-01-2025	14:00:00	30.4	29.4	28.5	22.5	20.8	19	242.1	1013.2	162.4	21.9	4.4	0	0
08-01-2025	15:00:00	31.2	30.6	29.8	20.8	18	16.5	212.3	1012.5	160	15.2	4.2	0.3	0
08-01-2025	16:00:00	31.4	31	30.5	29.7	23.1	17.2	159.1	1011.8	148.4	13.9	1.8	1.5	0
08-01-2025	17:00:00	31	30.6	29.9	30	26.3	20.7	94.6	1011.6	155	9.3	0.4	0.1	0
08-01-2025	18:00:00	29.9	28.4	27	27.6	24.1	21.3	27.7	1010.7	165	18.6	0.9	0.8	0
08-01-2025	19:00:00	27.1	25.8	24.9	31.7	29.7	27.5	0.1	1010.2	179.3	9.3	3.4	0.2	0
08-01-2025	20:00:00	25.1	24.5	23.6	39.3	33.6	29.3	0.1	1010.5	159.5	15.9	4.8	2.3	0
08-01-2025	21:00:00	23.8	23	22.4	44.3	42.2	38.9	0.1	1010.7	167.5	12.6	4.2	2.8	0
08-01-2025	22:00:00	22.6	22.1	21.6	42.9	41.4	39.6	0.1	1010.8	171.8	9.9	1.3	0.5	0
08-01-2025	23:00:00	21.7	21.1	20.7	46.7	44.2	42	0.1	1010.6	178.9	10.6	2.9	2.5	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
09-01-2025	00:00:00	20.9	20.6	20.4	47.5	44.9	42.8	0.1	1010.3	212.7	10.6	0.9	0.4	0
09-01-2025	01:00:00	20.6	20.3	20	47.1	45.1	43.6	0.1	1009.8	193.1	9.9	1.3	0.2	0
09-01-2025	02:00:00	20.2	19.9	19.5	50	47.6	45.9	0.1	1009.4	194.2	9.9	3.6	2.8	0
09-01-2025	03:00:00	19.8	19.2	18	59.4	52.7	49.8	0.1	1008.9	168.6	6.6	0.8	0.1	0
09-01-2025	04:00:00	18.1	17.2	16.8	66.8	64	59.2	0.1	1008.1	147.6	3.9	0.5	0.1	0
09-01-2025	05:00:00	17.5	17.1	16.2	65	61.8	59.7	0.1	1008.2	154.4	4.6	0.7	0	0
09-01-2025	06:00:00	17.3	16.7	16.1	65.7	63.3	60.7	0.1	1008.5	160.4	7.3	1.8	0.9	0
09-01-2025	07:00:00	17.1	16.8	16.5	65	63.9	62.7	0.1	1009.1	164.3	5.9	3.6	2.3	0
09-01-2025	08:00:00	16.8	16.3	15.7	69.4	65.9	62.6	1.3	1009.6	162.6	5.3	0.4	0.1	0
09-01-2025	09:00:00	20	17.8	15.8	69.7	61.5	51.3	19.1	1011.5	142.7	3.9	2.8	2.2	0
09-01-2025	10:00:00	22.3	20.8	19.9	51.7	49.2	45.7	95.6	1013.3	149.8	12.6	1.3	1.0	0
09-01-2025	11:00:00	25.2	23.7	22.1	46.4	43	40.4	153.4	1014	152.4	10.6	4.4	0.2	0
09-01-2025	12:00:00	27.7	26.5	25.1	42.7	38.9	36	199.3	1014.3	147.7	11.9	3.8	2.5	0
09-01-2025	13:00:00	31.4	29.6	27.4	37.7	33.1	29.8	221.4	1013.8	149.9	7.9	3.4	2.5	0
09-01-2025	14:00:00	33.2	31.9	31.3	32.2	29.7	24.9	220.9	1013.1	140.1	14.5	4.8	1.8	0
09-01-2025	15:00:00	34.3	33.5	33	25.4	22.6	19.8	189.9	1012.6	140.2	6.6	4.2	1.6	0
09-01-2025	16:00:00	33.9	32.2	30.3	42.8	31.2	21.1	136.5	1011.8	142	13.9	3.8	1.5	0
09-01-2025	17:00:00	30.9	30	28.8	48.3	43	31.4	74.1	1011	142.6	13.3	4.4	1.0	0
09-01-2025	18:00:00	29.1	27.3	25.4	63.3	56	46.3	19.3	1010.2	142.6	22.4	4.2	0	0
09-01-2025	19:00:00	25.5	24.6	23.9	63.6	60.4	50.7	0.1	1009.8	142.5	18.9	0.1	0	0
09-01-2025	20:00:00	26.3	25.7	24.5	50.8	44.1	41.2	0.1	1010.7	158.8	11.3	4.4	0	0
09-01-2025	21:00:00	25.9	25.4	24.8	46.1	44.2	42.4	0.2	1011.6	158	15.2	4.2	0	0
09-01-2025	22:00:00	25.7	25	24.7	45.6	41.9	36.3	0.1	1012.3	161.2	17.9	0.5	0.1	0
09-01-2025	23:00:00	25.7	24.9	23.8	39.5	37.5	36.2	0.1	1012.6	148.4	16.6	0.7	0.5	0
10-01-2025	00:00:00	23.9	22.2	21	53.3	48.1	39.2	0.1	1012	146.9	18.6	4.4	0.1	0
10-01-2025	01:00:00	23.1	22.5	21	52.5	44.3	41.7	0.1	1011.4	150.3	15.2	3.8	0.2	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
10-01-2025	02:00:00	23.1	22.6	21.9	46.1	42.8	40.5	0.1	1010.8	144.1	13.3	1.6	0.8	0
10-01-2025	03:00:00	22.9	22.5	21.8	46.1	43.6	42.1	0.1	1010.2	152.3	18.6	3.8	0.4	0
10-01-2025	04:00:00	22.6	22	21.6	45.5	44.3	43	0.1	1010	146.7	17.9	3.4	0.8	0
10-01-2025	05:00:00	22.6	22.1	21.1	49.8	44.9	42.2	0.1	1010	150.2	15.9	4.8	1.0	0
10-01-2025	06:00:00	21.3	21	20.6	49.7	48.6	47.7	0.1	1009.9	149.3	11.9	4.2	2.5	0
10-01-2025	07:00:00	21	20.7	20	52.1	49.8	48.1	0.1	1010.4	142.8	16.6	3.8	0.4	0
10-01-2025	08:00:00	20.1	19.6	19.3	55.4	54	52	1.3	1011.1	143.3	15.2	4.4	1.6	0
10-01-2025	09:00:00	20.9	20.5	19.7	54.2	51.6	50	21.8	1012.6	142.7	15.2	4.2	1.4	0
10-01-2025	10:00:00	23.4	22.2	20.7	53.2	51.2	46.9	79.5	1014.2	143.1	21.9	3.6	0	0
10-01-2025	11:00:00	25.2	24.3	23.3	48.7	45.4	43.4	128.6	1014.9	143.6	18.6	4.4	1.4	0
10-01-2025	12:00:00	28.3	26.6	25.1	45.2	38.6	32.2	160.6	1015	144.7	11.9	4.2	0	0
10-01-2025	13:00:00	30.4	29.2	27.9	33.8	31.6	28.8	194.1	1014.7	139.6	7.9	4.4	0	0
10-01-2025	14:00:00	32.4	31.2	30.3	29.1	27.3	25.3	195.4	1013.8	141.6	5.3	4.2	0.2	0
10-01-2025	15:00:00	33.3	32.8	32.2	27.8	25.9	23.2	174.4	1013.2	195.5	10.6	3.6	1.5	0
10-01-2025	16:00:00	33.3	32.9	32.2	27.1	24.6	23.3	126.6	1012.3	142.6	11.9	4.4	2.5	0
10-01-2025	17:00:00	32.3	30.9	29.5	31.5	29.1	26.2	64.4	1011.3	142.6	7.9	3.8	0	0
10-01-2025	18:00:00	29.6	28	26.5	37.1	33.6	29.8	14.5	1010	142.6	14.5	3.4	1.5	0
10-01-2025	19:00:00	26.7	25.6	24.6	45.8	41.1	36.9	0.1	1009.7	142.6	6.6	4.8	2.5	0
10-01-2025	20:00:00	24.9	24.5	24	47.1	44.8	42.9	0.1	1010.4	142.6	13.9	4.2	2.2	0
10-01-2025	21:00:00	24.3	23.5	23.1	50.9	48.8	45.4	0.1	1011	0	13.3	3.8	2.6	0
10-01-2025	22:00:00	23.4	23	22.1	58.8	52.8	50.5	0.1	1011.4	0	22.4	4.4	2.3	0
10-01-2025	23:00:00	22.5	22.1	21.7	72.2	65.2	58.6	0.1	1011.4	141.5	18.9	4.2	1.0	0
11-01-2025	00:00:00	22.2	21.6	21.2	73.8	71.8	70.3	0.1	1011.3	0	11.3	3.6	2.3	0
11-01-2025	01:00:00	21.5	21	20.4	83.7	78.7	73.7	0.1	1010.7	0	15.2	6.6	2.6	0
11-01-2025	02:00:00	21.3	20.9	20.6	86.1	84.1	82.5	0.1	1010.3	142.6	17.9	5.7	1.0	0
11-01-2025	03:00:00	20.9	20.4	19.7	86.1	84.6	82.7	0.1	1009.8	0	16.6	3.4	0.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
11-01-2025	04:00:00	21	20.4	20	91	88.4	85	0.1	1009.6	0	18.6	4.8	0.2	0
11-01-2025	05:00:00	20.6	20.1	19.7	92.2	91	86.4	0.1	1009.5	0	15.2	4.2	0	0
11-01-2025	06:00:00	20.5	20.1	19.4	87.5	80.4	75.4	0.1	1009.6	142.6	13.3	0.9	0.1	0
11-01-2025	07:00:00	19.7	19.6	19.3	85.7	83.7	79.8	0.1	1010.1	142.6	18.6	1.9	1.5	0
11-01-2025	08:00:00	20.3	19.8	19.6	85	82.8	81.7	0.6	1011	142.6	17.9	3.1	2.3	0
11-01-2025	09:00:00	22.5	21.2	20.2	82.9	79.7	75.6	20.5	1012.6	0	22.4	1.5	1.0	0
11-01-2025	10:00:00	25.1	23.9	22.3	75.6	63.7	53.8	75	1014.3	142.6	7.9	2.8	2.2	0
11-01-2025	11:00:00	26.2	25.3	24.8	61.2	56.7	49.8	127.4	1015.1	142.6	10.6	7.2	0.2	0
11-01-2025	12:00:00	27.6	26.7	26	49.9	45.2	42.3	174.6	1015.1	142.4	15.2	6.3	1.2	0
11-01-2025	13:00:00	29.3	28.2	27.4	44.5	37	32.2	205.6	1014.3	142.6	12.6	5.7	0	0
11-01-2025	14:00:00	30.2	29.6	29	36.4	34.1	31.3	204.3	1013.3	142.5	12.6	6.6	1.0	0
11-01-2025	15:00:00	30.9	29.6	29.1	36	33.1	27.5	176	1012.5	142.5	13.9	6.3	0.8	0
11-01-2025	16:00:00	31.2	30.8	30.4	31.8	27.8	25.2	127.9	1012	142.6	7.9	0.7	0.5	0
11-01-2025	17:00:00	31.1	30.2	29.5	35.6	32.6	28.9	73.1	1011.6	136.1	11.3	2.2	1.8	0
11-01-2025	18:00:00	29.6	28.6	27.2	42	37.6	34.4	18.5	1011.1	197.3	8.7	4.4	0	0
11-01-2025	19:00:00	27.4	25.6	23.8	65.6	52.8	41.3	0.1	1010.3	0	15.9	4.2	0	0
11-01-2025	20:00:00	24	23.2	22.7	67.1	64.2	63	0.1	1010.8	0	12.6	3.6	0.2	0
11-01-2025	21:00:00	22.9	22.5	21.9	69.8	64.3	60.8	0.1	1011.5	142.6	9.9	4.4	0.1	0
11-01-2025	22:00:00	22.2	21.8	21.5	79.3	75.9	67.6	0.1	1012	142.6	10.6	3.8	0.5	0
11-01-2025	23:00:00	22	21.7	21.5	78.3	74.8	72.4	0.1	1012.3	0	10.6	3.4	0.4	0
12-01-2025	00:00:00	22.2	21.9	21.6	72.6	68.4	66.1	0.1	1012.2	142.6	9.9	4.8	0	0
12-01-2025	01:00:00	22	21.6	21.3	68	65.5	63.1	0.1	1011.9	142.6	9.9	4.2	0.1	0
12-01-2025	02:00:00	21.9	21.6	21.3	73	69.1	65.4	0.1	1011.7	142.1	6.6	3.8	0.2	0
12-01-2025	03:00:00	21.6	21.4	21.1	73.2	71.5	69.6	0.1	1011.8	150.2	21.3	4.4	0.4	0
12-01-2025	04:00:00	21.8	21.5	21.2	70.8	67.7	65.7	0.1	1011.5	142.8	21.3	4.2	0	0
12-01-2025	05:00:00	21.5	21.1	20.7	69.4	68.2	66.9	0.1	1011.3	144.2	7.3	3.6	1.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Dahej Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
12-01-2025	06:00:00	21	20.7	20.4	71.4	69.1	67.3	0.1	1011.5	147.7	5.9	6.6	2.0	0
12-01-2025	07:00:00	20.6	20.2	19.5	72.9	71.3	69.7	0.1	1012	159.1	12	5.7	1.5	0
12-01-2025	08:00:00	19.7	19.4	19.2	74.4	73	71.4	1.1	1012.5	164.5	15.8	3.4	1.8	0
12-01-2025	09:00:00	21.1	20.2	19.4	71.5	69.1	66.2	19.4	1014.2	163.1	9.3	4.8	2.0	0
12-01-2025	10:00:00	24.4	22.6	21	66.6	61.9	56.2	92.2	1015.6	152.5	8.6	4.2	1.0	0
12-01-2025	11:00:00	26.9	26	24.2	56.6	49.8	47.3	155.6	1016.8	146	11.9	4.4	0	0
12-01-2025	12:00:00	28.5	27.7	26.7	49.8	45.7	39.5	202.9	1016.9	147.3	11.9	5.7	0	0
12-01-2025	13:00:00	30.1	29.1	28.3	41.1	34.5	28.4	234.9	1016	150.3	23.2	5.1	0	0
12-01-2025	14:00:00	31	30.1	29.4	36.1	32.2	29.4	222.6	1014.9	146.1	25.9	7.2	0	0
12-01-2025	15:00:00	31.2	30.5	30	33.8	31.7	29.6	194.2	1014	144.2	21.2	6.3	1.6	0
12-01-2025	16:00:00	30.5	30	29.7	34.1	30.7	25.3	145.6	1013.2	142.6	22.6	5.7	1.4	0
12-01-2025	17:00:00	30.4	29.4	28.5	30.1	27.5	25.3	79.8	1012.9	154.5	21.9	4.4	1.5	0
12-01-2025	18:00:00	28.7	27.8	26.7	32.8	29.6	26	23.5	1012.6	170.3	21.9	4.2	1.6	0
12-01-2025	19:00:00	26.8	25.8	25.1	36.7	34.6	32.6	0.2	1012.4	175.5	21.2	3.6	1.4	0
12-01-2025	20:00:00	25.3	24.9	24.5	37.1	35.8	34.5	0.2	1013	161	29.2	6.6	1.8	0
12-01-2025	21:00:00	24.7	24	23.4	41.9	38.6	36.5	0.2	1013.3	172.2	23.2	5.7	2.6	0
12-01-2025	22:00:00	23.6	23.2	22.8	46.8	44.4	41.8	0.2	1013.6	169.8	17.2	5.1	0.2	0
12-01-2025	23:00:00	23	22.5	21.9	45.5	44.3	43.1	0.2	1013.4	188.6	22.6	8.4	1.4	0



Hazira Meteorological Data

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
13-12-2024	00:00:00	24.2	23.7	23.1	57.9	52.8	48.3	0	1011.2	352.1	38	19.6	9.3	0
13-12-2024	01:00:00	23.4	22.7	21.9	60.4	57.3	54	0	1010.6	354.3	28.6	16.1	7.3	0
13-12-2024	02:00:00	22.2	21.6	21.2	62.9	59.7	57.3	0	1010	351.4	31.3	17.8	9.3	0
13-12-2024	03:00:00	21.8	21.2	20.7	66.1	63	59.3	0	1009.6	356.3	29.3	16	9.3	0
13-12-2024	04:00:00	21.1	20.6	20.2	68.1	65.7	63.7	0	1009.4	352.6	34	17.4	9.3	0
13-12-2024	05:00:00	20.9	20.5	20.2	69.4	67.5	65.7	0	1009.2	0.8	26	14.7	8.6	0
13-12-2024	06:00:00	20.7	20.2	19.8	74.1	70	66.9	0	1009.5	3.5	25.3	14.9	8.6	0
13-12-2024	07:00:00	20.3	20.1	19.8	73.4	70.6	67.6	0	1010	11.7	25.3	15.5	10.6	0
13-12-2024	08:00:00	20.3	20	19.6	74.2	71.4	67.6	6.2	1011.5	9.4	26.6	15.7	10.6	0
13-12-2024	09:00:00	23	20.7	19.9	70	67.1	56	57.1	1012.9	16.7	34	14.9	10	0
13-12-2024	10:00:00	25.9	25	22.9	58.7	50.5	45.1	121.6	1014.3	47.5	44.6	17.3	3.3	0
13-12-2024	11:00:00	27.5	27.3	25.7	50.1	44.3	41.5	173.6	1014.7	69.2	42.6	11.5	3.3	0
13-12-2024	12:00:00	29	27.8	27.1	49.3	44.2	41	237.4	1014.4	56.2	38.6	11.6	6	0
13-12-2024	13:00:00	29.2	28.7	28	48	42.3	35.8	264.1	1013.7	51.9	34.6	10.9	4	0
13-12-2024	14:00:00	30.2	29.5	28.7	44.9	37.8	32.1	248	1012.7	30	34	15.5	6.6	0
13-12-2024	15:00:00	30.4	30	29.6	43.9	37.6	32.3	215.9	1011.5	47.7	34.6	13.3	4	0
13-12-2024	16:00:00	30.6	30.2	29.9	41.6	35.7	30.2	156.3	1010.9	40.3	39.3	16.5	6	0
13-12-2024	17:00:00	30.4	30	29.4	39.6	35.5	30.4	79.6	1010.3	19.3	33.3	17.3	11.3	0
13-12-2024	18:00:00	29.7	28.6	27.1	42.4	36.6	31.8	14	1010.2	14	27.3	15.6	10	0
13-12-2024	19:00:00	27.6	26.6	25.8	53	47.9	38.4	0	1010.7	10.3	24.6	13.1	6.6	0
13-12-2024	20:00:00	26.1	25.3	24.7	57.4	49.7	44.5	0	1011.5	13.4	27.3	15.3	8.6	0
13-12-2024	21:00:00	25	24.3	22.6	50.5	47.6	44.5	0	1012.1	14.2	27.3	16.7	11.3	0
13-12-2024	22:00:00	24.3	23.7	23.2	53.8	49.4	46.2	0	1012.8	8.9	26.6	15.6	10	0
13-12-2024	23:00:00	23.5	23	22.4	54.7	52.1	49.1	0	1013	10.1	26	15.3	8.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
14-12-2024	00:00:00	23	22.5	22	56.4	53.3	50.4	0	1012.5	9.3	25.3	15.8	10.6	0
14-12-2024	01:00:00	22.3	21.9	21.5	58.7	55.7	51.9	0	1011.6	11.3	24.6	14.9	8.6	0
14-12-2024	02:00:00	22.3	21.7	21	61.1	56.9	53.3	0	1011	9	24	15	10	0
14-12-2024	03:00:00	21.3	20.8	20.1	63.8	60.8	56.7	0	1010.3	3	23.3	14.1	8.6	0
14-12-2024	04:00:00	20.5	20.1	19.7	65	61.9	58.5	0	1009.9	12.9	23.3	14.1	8.6	0
14-12-2024	05:00:00	21.2	20.7	20	62.1	55.6	52.3	0	1009.9	14.5	29.3	15	8	0
14-12-2024	06:00:00	21.8	21.1	20.2	56.9	52.4	47.3	0	1010.3	28.3	34	17.2	10	0
14-12-2024	07:00:00	21.7	21.1	20.7	54.6	51.6	47.9	0	1010.9	36.1	38	19	11.3	0
14-12-2024	08:00:00	21.4	20.9	20.6	54.3	50.9	48	4.6	1011.8	38.1	30.6	17.2	8	0
14-12-2024	09:00:00	22.9	21.9	21	54.4	50.1	45.1	52.7	1013.3	43.5	38.6	15.8	5.3	0
14-12-2024	10:00:00	25.2	24	22.6	52.2	46.8	42.1	121.4	1014.7	58.5	32.6	9.4	4	0
14-12-2024	11:00:00	27.2	25.8	24.8	48.1	43.2	38.3	166.8	1014.7	52.9	28.6	9.2	3.3	0
14-12-2024	12:00:00	28.5	27.6	26.9	48.1	43.4	36.5	231.7	1014.6	77.8	24	8.2	2	0
14-12-2024	13:00:00	29.7	29	28	44.9	41.3	36.7	266.4	1014.1	85.1	14.6	5.9	1.3	0
14-12-2024	14:00:00	31.1	30.1	29	46	39.6	31.5	257.4	1013.1	95	10.6	4.7	0.6	0
14-12-2024	15:00:00	32.3	31.7	30.6	39.5	32.6	27.1	208.8	1012.4	17.2	17.3	7.1	0	0
14-12-2024	16:00:00	32.3	31.6	31	37.1	31.4	27	153.4	1012	13.4	22	10.8	6	0
14-12-2024	17:00:00	31.6	30.9	30.3	38.4	33	27.8	80.8	1011.5	13.3	22.6	12	6.6	0
14-12-2024	18:00:00	30.7	29.5	27.9	40.8	36.4	31.2	12.6	1011	14.5	19.3	11.4	6	0
14-12-2024	19:00:00	28.2	27	25.6	54.2	43	38.8	0	1011.1	13.1	20.6	12.7	8	0
14-12-2024	20:00:00	26.4	25.5	24.6	48.3	46.2	43.1	0	1011.4	16.8	22.6	12.7	8	0
14-12-2024	21:00:00	25	24.2	23.7	58.9	52.6	47.6	0	1011.8	0	23.3	11.3	6.6	0
14-12-2024	22:00:00	24.3	23.4	22.9	56.4	52.6	49.5	0	1012.5	354.6	21.3	12.3	7.3	0
14-12-2024	23:00:00	23.9	22.9	22.4	59.6	53.8	49.3	0	1012.7	353.9	20.6	11.8	6	0
15-12-2024	00:00:00	23.2	22.8	22.5	60.5	57.8	53	0	1012.6	10.1	20	11.8	6.6	0
15-12-2024	01:00:00	23.5	23	22.4	61.8	57.3	53.4	0	1012.1	21.2	21.3	10.9	5.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
15-12-2024	02:00:00	24.3	23.8	23.1	58	54.1	49.7	0	1011.7	40.5	29.3	11.6	4.6	0
15-12-2024	03:00:00	23.8	23	22.2	61.6	56.4	52.9	0	1011.2	15.8	21.3	10.2	6	0
15-12-2024	04:00:00	22.6	22.2	21.8	63.1	60.1	55.9	0	1010.8	16.7	20	10	6	0
15-12-2024	05:00:00	22.7	22.5	22.1	58.8	55.6	52.4	0	1010.9	39.5	28.6	11.4	4	0
15-12-2024	06:00:00	22.6	22.1	21.7	61.9	57.3	53.8	0	1010.8	47.8	28.6	11	5.3	0
15-12-2024	07:00:00	22.2	21.9	21.6	61.7	57.5	54.5	0	1011.5	45.6	28.6	12.8	6	0
15-12-2024	08:00:00	21.9	21.5	21	59.5	56.2	50.5	7.5	1012.5	51.8	24	9	2.6	0
15-12-2024	09:00:00	23.4	22.3	21.4	59.1	56	52.9	61.4	1014.2	54.8	28	9.2	3.3	0
15-12-2024	10:00:00	25.9	24.5	23.2	56.1	50.1	45.9	129.1	1015.4	61.8	24	7.2	3.3	0
15-12-2024	11:00:00	28.6	27.1	25.6	49.1	41.8	36.3	174.2	1016.2	54.7	24	7.2	3.3	0
15-12-2024	12:00:00	30.3	29.3	28.3	48.6	39.5	32.6	242.8	1016.2	74.2	18.6	6.2	1.3	0
15-12-2024	13:00:00	30.4	29.1	28.3	50.5	45.8	39.8	277.1	1014.8	87.5	14.6	7.8	2	0
15-12-2024	14:00:00	33.5	31.3	30	45.9	33.2	24.1	264.3	1013.9	105.9	12	5.8	0	0
15-12-2024	15:00:00	34.1	32.1	31.2	43.1	37.5	24.2	213.4	1013.1	288.1	20.6	7.9	0	0
15-12-2024	16:00:00	32.5	31.7	31	47.4	44.8	39.8	147.3	1012.3	295.4	18.6	8.8	1.3	0
15-12-2024	17:00:00	32.5	31.6	30.6	44.8	41.5	39.2	75.4	1011.7	316.5	21.3	10.3	0.6	0
15-12-2024	18:00:00	30.9	29.6	28.1	49.1	45.2	40.1	14.3	1011	319.3	22	9.7	3.3	0
15-12-2024	19:00:00	28.6	28	27.4	55.6	50.4	46.7	0	1011	336.9	24.6	9.1	2	0
15-12-2024	20:00:00	27.8	26	24.9	68.5	65	55.4	0	1011.3	353	20	11.4	6	0
15-12-2024	21:00:00	25.7	25.3	24.8	66.7	55.5	50	0	1012	357.7	21.3	11	6.6	0
15-12-2024	22:00:00	25.3	24.6	23.7	54	50.5	47	0	1012.5	350.2	26	15.2	8	0
15-12-2024	23:00:00	24.6	24.2	23.7	53.5	49.5	46.1	0	1012.5	349.4	28.6	17.4	10	0
16-12-2024	00:00:00	24.5	23.6	22.8	59.8	55	48.6	0	1011.7	2.9	22.6	10.4	6	0
16-12-2024	01:00:00	24	23.4	23	59.7	56	52.6	0	1011.3	355.7	24	12.4	5.3	0
16-12-2024	02:00:00	23.3	23	22.6	59.3	57	54.5	0	1010.7	0.2	22	10	5.3	0
16-12-2024	03:00:00	23	22.5	22	61.9	58.9	55.8	0	1010.2	13.3	16.6	10	6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
16-12-2024	04:00:00	22.5	22.2	21.9	64.2	62.1	59.6	0	1009.6	13.9	15.3	8.9	5.3	0
16-12-2024	05:00:00	22.6	22.3	21.9	62.5	58.5	55.7	0	1009.8	12.3	18	11.2	6.6	0
16-12-2024	06:00:00	22.5	22.1	21.6	60.6	58	55.1	0	1009.9	9.1	15.3	9.4	4.6	0
16-12-2024	07:00:00	21.9	21	19.9	68	63.3	58.4	0	1010	10.1	16.6	9.7	5.3	0
16-12-2024	08:00:00	21.4	20.2	19.4	69.3	66.8	63.6	6.1	1010.7	18	18	7.3	3.3	0
16-12-2024	09:00:00	23.8	22.5	21.2	66.7	60.3	54	57.6	1012.9	49	27.3	9.6	2	0
16-12-2024	10:00:00	26.5	25	23.5	56.2	49.6	42.6	126.7	1014.1	67.7	22.6	6.3	2	0
16-12-2024	11:00:00	29.1	27.9	26.2	46.7	42.2	37.8	174.8	1014.9	56.1	19.3	5.9	0.6	0
16-12-2024	12:00:00	31.2	30.2	28.8	47.6	41.4	33.8	240.5	1015.3	91.1	13.3	4.7	0	0
16-12-2024	13:00:00	32.2	31.2	30.4	46.1	38.2	27.9	277.4	1014	115.3	11.3	6.2	0.6	0
16-12-2024	14:00:00	35.4	34	31.8	31	24.4	18.9	267.5	1012.9	70.4	18.6	1.4	0	0
16-12-2024	15:00:00	35	33.2	32.5	35	32	28.8	212.3	1011.9	291.2	20.6	8.4	0.6	0
16-12-2024	16:00:00	33.5	33	32.7	35.2	31.5	28.2	147.7	1011.2	297.1	20.6	10	2.6	0
16-12-2024	17:00:00	33.2	31.3	30.2	51	44.3	34.4	69.5	1010.3	297	20.6	9.4	1.3	0
16-12-2024	18:00:00	30.8	28.9	27.5	59.3	55.3	50.2	10.8	1009.4	295.7	16	7.3	2	0
16-12-2024	19:00:00	28.3	27.7	27	58.5	53.3	51.3	0	1009.4	325.7	17.3	6.3	0.6	0
16-12-2024	20:00:00	27.8	27.3	26.6	57.9	50.8	46.9	0	1009.9	345.6	26.6	13	4	0
16-12-2024	21:00:00	26.8	25.3	24.7	68.5	64.7	57.1	0	1010	352.7	21.3	11.6	6	0
16-12-2024	22:00:00	25.4	24.6	24.1	63.5	59.3	54.9	0	1010.2	354.5	22	10.8	6	0
16-12-2024	23:00:00	25.1	24.6	24.2	57.9	54	49.9	0	1010.2	354	20.6	11.8	6.6	0
17-12-2024	00:00:00	25.7	24.5	24.2	54.7	52.3	49.8	0	1009.9	349.9	20.6	12.6	7.3	0
17-12-2024	01:00:00	24.7	24.4	23.9	58.7	55	51.8	0	1009.5	359.1	18	8.7	3.3	0
17-12-2024	02:00:00	24.8	24.2	23.5	58.9	55	50.4	0	1009.5	353.6	21.3	12.3	6	0
17-12-2024	03:00:00	24	23.5	23.2	58.9	56.8	54.6	0	1009	356.2	20.6	11.3	6	0
17-12-2024	04:00:00	24	23.2	22.6	61.7	58	53.8	0	1008.6	358.2	22	12.1	6.6	0
17-12-2024	05:00:00	22.9	22	21.2	60	57.3	54.9	0	1008.6	343	28	9.7	0.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
17-12-2024	06:00:00	22.3	21.7	21.2	69.9	65.4	55.8	0	1009	354.7	26.6	12.5	6.6	0
17-12-2024	07:00:00	21.6	21	20.2	72.5	68.7	63.7	0	1009.5	14.7	22	12	6.6	0
17-12-2024	08:00:00	21.5	20.9	20.3	65.9	63.8	61.6	5.2	1009.9	15.2	18.6	10.5	5.3	0
17-12-2024	09:00:00	23.4	22.3	21.2	63.7	57.7	54.1	56	1011.7	12.4	17.3	9.2	4.6	0
17-12-2024	10:00:00	25.9	24.3	23.1	56.7	53.5	50.3	130.1	1013.2	10.4	12	6.4	2.6	0
17-12-2024	11:00:00	28.1	26.8	25.5	51.6	45.9	41.2	186.5	1013.3	354.3	15.3	8.2	4	0
17-12-2024	12:00:00	29.9	28.5	27.7	44.7	41.4	37.8	230.4	1013.2	10.6	16.6	9.2	4.6	0
17-12-2024	13:00:00	30.6	30	29.4	46	41.1	36.5	254.2	1012.4	355.4	19.3	10.1	6	0
17-12-2024	14:00:00	30.8	30.3	29.8	47.3	42.4	38	234.9	1010.6	348.9	23.3	10.6	3.3	0
17-12-2024	15:00:00	30.7	30.2	29.6	49.1	45.8	42	194	1009.7	315.8	31.3	14.1	5.3	0
17-12-2024	16:00:00	30.7	30.2	29.8	44.1	40.4	37	137.9	1009.6	318.9	28.6	14.6	4.6	0
17-12-2024	17:00:00	30.7	30	29	38.6	37.1	35.1	70.4	1009.3	320.6	30.6	13.1	3.3	0
17-12-2024	18:00:00	29.4	28.8	28.2	37.8	35.2	32.2	7.2	1008.4	323.1	19.3	9.5	3.3	0
17-12-2024	19:00:00	28.7	28.2	27.7	34.4	31.4	27.3	0	1008.4	331.8	24	12.4	5.3	0
17-12-2024	20:00:00	28.5	28.2	27.8	38.2	35.5	31.8	0	1009.2	339.9	38	17.8	6	0
17-12-2024	21:00:00	28.4	27.9	27.4	40	37.1	35.7	0	1009.8	342.3	37.3	19	7.3	0
17-12-2024	22:00:00	27.7	27	26.5	46.1	43.1	38.2	0	1010.2	347.1	36	16.2	6	0
17-12-2024	23:00:00	26.9	26.3	25.5	52.9	48.6	44.9	0	1010.5	345.7	26	14.3	6	0
18-12-2024	00:00:00	25.8	24.2	23.5	65.1	61.5	52.2	0	1009.9	351.7	20.6	10.5	4	0
18-12-2024	01:00:00	24.2	23.9	23.6	63.6	58.7	55.1	0	1009.8	349.6	24	14.5	6.6	0
18-12-2024	02:00:00	24.1	23.6	23	66.9	58.5	52.5	0	1009.8	349.6	26	14.4	6.6	0
18-12-2024	03:00:00	24.3	23.8	23.1	55.9	49.1	43.5	0	1009.3	346.6	34.6	18.8	7.3	0
18-12-2024	04:00:00	23.5	23	22.4	55.7	50	48.2	0	1008.4	346	30	14.5	5.3	0
18-12-2024	05:00:00	22.7	22	21.3	65.3	60.9	54.8	0	1008.1	355.9	24	12.9	4	0
18-12-2024	06:00:00	21.7	21.1	20.4	68.7	63.9	59.3	0	1008.1	8.3	22	13.1	8.6	0
18-12-2024	07:00:00	20.7	20.4	20	72.7	69.9	66.9	0	1008.1	0	20	11.5	6.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
18-12-2024	08:00:00	21	20.5	20.1	72.7	70.9	69.1	3.1	1008.9	4.8	16.6	8.6	4	0
18-12-2024	09:00:00	22.6	21.8	20.7	70.4	67.2	65.3	51.4	1010.4	8.3	16	7.3	4	0
18-12-2024	10:00:00	24.6	23.3	22.2	65.8	61.4	58.2	120.7	1011.4	8.1	12	6.2	1.3	0
18-12-2024	11:00:00	28.5	26.6	24.3	59.4	52.7	47.5	187.8	1012.2	355.3	10	3.2	0	0
18-12-2024	12:00:00	31.2	30.1	28.4	47.7	44.4	42.2	230.8	1012.6	116.7	6.6	1.4	0	0
18-12-2024	13:00:00	34.2	32.5	30.3	43.1	32.1	23.6	255.7	1011.4	96.5	9.3	1.2	0	0
18-12-2024	14:00:00	33.7	31.9	30.6	43.5	39.3	33.7	238	1009.8	276	20.6	7.3	0	0
18-12-2024	15:00:00	31.1	30.5	29.6	49	45.4	41	206	1008.5	295.6	22.6	12.1	3.3	0
18-12-2024	16:00:00	30.8	30.3	29.7	49.6	46.6	44	142.3	1008.1	296.2	21.3	11.7	5.3	0
18-12-2024	17:00:00	30.2	29.6	28.7	48.6	45.7	41.4	71.9	1007.9	295.2	18	11.4	4	0
18-12-2024	18:00:00	29.1	28.3	27.3	48.7	46.2	44.2	11.3	1007.6	302.3	18	6.2	0	0
18-12-2024	19:00:00	27.6	26.7	26	55.1	52.3	48.4	0	1007.5	325.8	8.6	2.7	0	0
18-12-2024	20:00:00	26.6	26.2	25.5	65.1	52.5	44.7	0	1008	343.1	11.3	4.8	0.6	0
18-12-2024	21:00:00	25.9	24.6	24	75.8	71.8	64.9	0	1007.9	356.9	14.6	8.4	4	0
18-12-2024	22:00:00	24.6	24	23.6	73.8	71	67.4	0	1008.2	9.9	11.3	5.5	1.3	0
18-12-2024	23:00:00	24.8	23.9	23.4	70.6	66.4	59	0	1008.1	11.1	10.6	4.1	0.6	0
19-12-2024	00:00:00	25	24.3	23.3	64.5	59.6	54	0	1008.1	18.3	10	3.4	0	0
19-12-2024	01:00:00	24.1	23.3	22.2	68	64.7	61.4	0	1007.6	252.5	9.3	4.3	0	0
19-12-2024	02:00:00	24.2	23.2	22.5	72.2	67.9	60.7	0	1007.4	294.9	12	4.4	0	0
19-12-2024	03:00:00	24.3	23.5	22.9	83.6	75.2	67.3	0	1006.7	357.2	10	2.3	0	0
19-12-2024	04:00:00	23.2	22.8	22.5	85.4	84.2	83.1	0	1006.3	13.2	8	3.3	0	0
19-12-2024	05:00:00	22.9	22.5	22.2	84.2	80.6	76.3	0	1006.3	20.1	11.3	4.7	0.6	0
19-12-2024	06:00:00	22.7	22.4	22	77	74.6	72.9	0	1006.4	15.8	10	4	0	0
19-12-2024	07:00:00	22.3	22	21.6	82.5	78.6	73.2	0	1007.1	44.8	10.6	3.7	0	0
19-12-2024	08:00:00	22	21.6	21.2	83.5	82.1	80.9	1.5	1008.1	50.3	7.3	2.1	0	0
19-12-2024	09:00:00	22.9	22	21.5	82.7	79.4	75.2	29.4	1009.4	49.3	13.3	4.3	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
19-12-2024	10:00:00	25	23.6	22.6	76.3	73.2	67.4	84.2	1010.7	59.9	11.3	3.8	0	0
19-12-2024	11:00:00	26	25.7	24.8	69.6	67.7	64.5	153.5	1011.1	87	18	9.2	0.6	0
19-12-2024	12:00:00	28.3	26.6	25.6	68.8	63.6	57.3	209.7	1010.8	102	20.6	11.4	2.6	0
19-12-2024	13:00:00	31	29.6	28	58.4	48.8	39.8	241.4	1010.8	165.4	22	8.3	0.6	0
19-12-2024	14:00:00	32.1	31.4	30.6	42	39.2	33.1	231	1010	195.6	20.6	6.5	0.6	0
19-12-2024	15:00:00	32.3	31.7	30.5	40.8	38.1	34.1	194.8	1009	214.1	20	7.9	0.6	0
19-12-2024	16:00:00	32	31.3	30	51.5	43.3	37.3	134.9	1008.3	237.3	16.6	6.4	1.3	0
19-12-2024	17:00:00	30.2	29.1	27.8	64.3	57.4	50.1	65.2	1007.5	286.5	19.3	9.1	1.3	0
19-12-2024	18:00:00	28.1	27.2	26.1	76	69.2	62.7	9.5	1007	293.7	18	10	3.3	0
19-12-2024	19:00:00	26.3	25.8	25.3	82.3	78.6	75.3	0	1007.2	294.9	18	8.7	3.3	0
19-12-2024	20:00:00	25.5	25.2	25	82.7	79.7	75.5	0	1007.7	297	8.6	4.5	0	0
19-12-2024	21:00:00	25.4	24.9	24.6	83.2	78.2	75.3	0	1008	343.9	6.6	1.3	0	0
19-12-2024	22:00:00	25.2	24	23.3	89.3	87.1	83.1	0	1008.1	41.6	6	0.3	0	0
19-12-2024	23:00:00	24	23.6	23.2	90.3	88.9	87.2	0	1008	318	4	0.7	0	0
20-12-2024	00:00:00	24.1	23.6	23	90	87.6	86.3	0	1008.1	327.7	10.6	1.8	0	0
20-12-2024	01:00:00	23.5	23	22.5	92	89.9	86	0	1008	99.5	10	2.6	0	0
20-12-2024	02:00:00	23.7	23.3	22.8	88.7	86.9	85.5	0	1007.9	115.6	9.3	3.2	0	0
20-12-2024	03:00:00	23.3	22.6	22.3	88.4	87	85.2	0	1007.3	276.4	4	0.6	0	0
20-12-2024	04:00:00	23.1	22.8	22.2	86.2	82	79.7	0	1006.8	308.1	8.6	3.5	0.6	0
20-12-2024	05:00:00	22.5	22.2	21.9	85.5	83.8	82.4	0	1006.7	311.4	10	3.3	0	0
20-12-2024	06:00:00	23.3	22.6	22.1	85.3	83.1	78.7	0	1007.3	334.8	21.3	7.1	0	0
20-12-2024	07:00:00	23	22.7	21.8	82.2	75.5	70.1	0	1008	351.7	22	11.8	5.3	0
20-12-2024	08:00:00	22.1	21.8	21.5	85.7	82.5	78.8	1.7	1008.8	6	17.3	9.9	4.6	0
20-12-2024	09:00:00	22.9	22.1	21.5	86.2	85.1	82.8	37.8	1010	360	20	10.4	5.3	0
20-12-2024	10:00:00	24.2	23.3	22.7	83.5	80	74.3	103.6	1011.5	0.7	25.3	11.2	5.3	0
20-12-2024	11:00:00	25.7	25.5	24	74.7	64.6	63.7	199.2	1011.7	2.4	24	11.9	1.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
20-12-2024	12:00:00	27.8	26.7	25.4	65.5	59.3	54.2	214.9	1011.5	0.2	21.3	10	4	0
20-12-2024	13:00:00	29.2	28.5	27.5	55.7	51.2	48.2	234.5	1010.7	4.7	23.3	9.7	5.3	0
20-12-2024	14:00:00	29.8	28.7	27.5	60.8	56	47.1	219.3	1009.2	327.6	28	11.1	2	0
20-12-2024	15:00:00	29	28.4	27.5	60.5	55.9	51.9	182.1	1007.9	321.4	30	13.6	4	0
20-12-2024	16:00:00	29.1	28.2	27.3	52.9	49.5	47.3	125.2	1007.6	318.5	34	15.2	5.3	0
20-12-2024	17:00:00	28.4	27.7	27.2	50	45.5	43.1	66.1	1007.1	321	33.3	15.2	2.6	0
20-12-2024	18:00:00	27.7	27.2	26.5	44.9	44	42.5	12.6	1007	325.1	28.6	12.4	4.6	0
20-12-2024	19:00:00	27.1	26.7	26.4	44.8	42.7	40.3	0	1007.3	330.5	36	14.4	5.3	0
20-12-2024	20:00:00	27.1	26.6	26.2	46.9	43.8	41.1	0	1007.7	332.5	40	18.4	6	0
20-12-2024	21:00:00	26.7	26.3	25.9	49.5	47.6	45.7	0	1008.2	333.1	45.3	19.8	6	0
20-12-2024	22:00:00	26.4	25.8	25.2	56.2	52.4	46.8	0	1008.4	336.2	36.6	15.6	4.6	0
20-12-2024	23:00:00	25.8	25.6	25.2	55.6	53.1	50.5	0	1008.3	334.4	36	16.8	6.6	0
21-12-2024	00:00:00	25.6	25	24.5	58.3	56.2	53.7	0	1008.2	333.7	32.6	15.5	6	0
21-12-2024	01:00:00	24.9	24.2	23.6	63.9	60.8	56.3	0	1007.7	333.3	31.3	14.8	5.3	0
21-12-2024	02:00:00	24	23.4	22.7	69.4	67	63.4	0	1007.3	340.6	42	20.3	7.3	0
21-12-2024	03:00:00	23.2	22.9	22.5	71.7	68.3	66.3	0	1006.5	342.3	38	21.8	8.6	0
21-12-2024	04:00:00	23	22.7	22.2	71.9	70.5	68.8	0	1006.4	341.1	38	18.7	8.6	0
21-12-2024	05:00:00	22.9	22.3	21.7	82.5	76.6	71.4	0	1006.3	349.6	27.3	12.4	4.6	0
21-12-2024	06:00:00	21.9	21.5	21.1	87.1	85.3	82.4	0	1006.5	1.4	19.3	9.4	4	0
21-12-2024	07:00:00	21.8	21.4	20.9	88.3	86.1	84.7	0	1007.3	359	26	11	5.3	0
21-12-2024	08:00:00	21.2	20.8	20.3	88.4	87.4	85.8	1.6	1008.2	12	18.6	9.1	4	0
21-12-2024	09:00:00	22	21	20.2	88.3	85.2	80.3	36.1	1009.3	9.7	18	9.9	4	0
21-12-2024	10:00:00	23.1	22.3	21.7	80.6	74	69.4	89.9	1010.6	9.3	19.3	10	4	0
21-12-2024	11:00:00	24.8	23.8	22.7	71.1	68.1	66.2	150	1011.7	11.1	17.3	9.2	5.3	0
21-12-2024	12:00:00	27.2	25.7	24.4	66.7	63.2	58.4	185.4	1011	11.9	15.3	7.2	2	0
21-12-2024	13:00:00	30	28.4	26.9	60.7	54.2	49.2	206.8	1010.5	21.3	10.6	4.1	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
21-12-2024	14:00:00	31.6	30.4	29.4	51.3	48	44.9	194.2	1009.6	137.2	10.6	3.1	0	0
21-12-2024	15:00:00	32.3	30.8	29.8	55.3	50.6	47.1	157.3	1008.5	243.7	17.3	1.8	0	0
21-12-2024	16:00:00	30.2	29.5	29.1	58.5	57	54.6	106.4	1007.7	291.4	16.6	8.8	2.6	0
21-12-2024	17:00:00	29.6	28.5	27.6	65.1	61.9	57.5	42	1007.5	292.5	16.6	8.5	0.6	0
21-12-2024	18:00:00	28.1	27.2	26.5	69.2	67.2	64.8	4.8	1007.3	293.6	11.3	6.1	0.6	0
21-12-2024	19:00:00	27	26.2	25.4	75.6	73.2	67.7	0	1007.5	262	7.3	3	0	0
21-12-2024	20:00:00	26.1	25.6	25.1	86.6	81.1	74.9	0	1008.4	296.9	10	4.8	0.6	0
21-12-2024	21:00:00	25.6	25.1	24.7	89.9	88.8	86.3	0	1009.2	294.8	14	6.3	0	0
21-12-2024	22:00:00	25.2	24.9	24.6	89.6	88.6	86.3	0	1009.6	289.8	10.6	4.9	0	0
21-12-2024	23:00:00	25.1	24.8	24.5	91.1	88.5	86.2	0	1008.9	244.8	10.6	3.5	0	0
22-12-2024	00:00:00	25.2	24.7	24.2	93.4	92.7	90.9	0	1008.7	250.6	18.6	9	2	0
22-12-2024	01:00:00	24.6	24	23.5	92.9	90.2	87.6	0	1008.6	238.6	11.3	4.8	0.6	0
22-12-2024	02:00:00	24	23.7	23.4	87.8	85.9	83.1	0	1008.1	230.7	13.3	6.1	1.3	0
22-12-2024	03:00:00	23.9	23.5	23.1	83.2	81.8	81	0	1007.9	220.5	10	5.8	2	0
22-12-2024	04:00:00	23.6	23.3	22.9	84.3	82.5	81.3	0	1007.7	212.6	10	5.8	1.3	0
22-12-2024	05:00:00	23.6	23.3	23	86.2	85.3	84.2	0	1007.6	211.2	12	6.5	3.3	0
22-12-2024	06:00:00	23.6	23.3	23	88.6	87.4	85.9	0	1007.7	206.4	11.3	6.1	1.3	0
22-12-2024	07:00:00	24.4	23.6	23.1	91.8	88.5	87.2	0	1008.1	188.7	16	4.8	2	0
22-12-2024	08:00:00	24.3	23.3	22.6	98.3	95.6	91.6	0.2	1008.8	92.4	14	6.1	0.6	0
22-12-2024	09:00:00	23.5	23.1	22.5	99.8	98.5	97.6	20.2	1010	92.2	13.3	5.7	0	0
22-12-2024	10:00:00	24.2	23.4	23	98.8	96.7	94.4	64.2	1011.3	99.6	13.3	6.2	0	0
22-12-2024	11:00:00	26.5	25.3	23.9	94.9	89.5	84.6	122.3	1012.2	96.9	8.6	2.9	0	0
22-12-2024	12:00:00	28	27.2	26.1	85.3	79.6	72.7	135	1012.2	59.5	19.3	2.2	0	0
22-12-2024	13:00:00	28.7	27.7	27.2	73.5	66.8	64.1	97.5	1011	302.8	14.6	4.7	0	0
22-12-2024	14:00:00	28.5	27.7	27.2	66.1	62.9	58.8	90.7	1009.7	296.6	14	6	0	0
22-12-2024	15:00:00	28.7	28.1	27.7	59.3	57.4	56.7	61	1008.9	290.2	10	3.6	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
22-12-2024	16:00:00	28.7	28.2	27.5	58.5	56.7	53.5	74.8	1008.5	286.1	16	6.4	1.3	0
22-12-2024	17:00:00	27.8	27.2	26.8	61.3	59.5	57.5	36.4	1008	292.6	15.3	7.2	0.6	0
22-12-2024	18:00:00	27.1	26.7	26.3	61.4	59.1	57.5	5	1008.2	289.6	11.3	5.1	0	0
22-12-2024	19:00:00	26.7	26.2	25.8	66.9	63.5	61.1	0	1008.4	276.9	7.3	2.2	0	0
22-12-2024	20:00:00	26.1	25.7	25.4	75.6	70.2	66.5	0	1009.3	245.5	10	3.1	0	0
22-12-2024	21:00:00	25.7	25.4	25.1	76.7	74	70.7	0	1009.7	252.7	7.3	2.5	0	0
22-12-2024	22:00:00	25.7	25.1	24.6	79.2	75.5	70.7	0	1009.8	237.8	7.3	2.5	0	0
22-12-2024	23:00:00	25.1	24.5	24	80.9	78.9	76.8	0	1009.7	206.2	6.6	2.5	0	0
23-12-2024	00:00:00	24.7	24.4	24	82.2	81.3	80.6	0	1009.4	277.4	6.6	2.2	0	0
23-12-2024	01:00:00	24.6	24.3	24	86	84.1	82	0	1008.9	272.1	8	1.6	0	0
23-12-2024	02:00:00	24.8	24.5	24.2	86.1	85	84.2	0	1008.7	274.2	7.3	2.4	0	0
23-12-2024	03:00:00	24.8	24.5	24.3	86.7	86.2	85.8	0	1008.4	262.6	7.3	3.4	0.6	0
23-12-2024	04:00:00	25	24.7	24.4	87	86.5	85.9	0	1008.3	269.7	6	1.8	0	0
23-12-2024	05:00:00	25	24.7	24.5	86.2	85.3	84.9	0	1008.1	269.3	7.3	2.2	0	0
23-12-2024	06:00:00	25	24.8	24.6	88.2	86.3	85	0	1008.4	274.9	14	3.2	0	0
23-12-2024	07:00:00	25.1	24.5	24	88.3	85.9	84.2	0	1009.3	292.6	22	10	2.6	0
23-12-2024	08:00:00	24.5	24.2	23.8	85.1	81.5	76.7	0	1010	341	24.6	12	1.3	0
23-12-2024	09:00:00	24.4	24	23.7	79.5	77.3	75.8	15	1010.9	356.4	23.3	11.6	5.3	0
23-12-2024	10:00:00	24.9	24.6	24.2	76.7	69.8	67.3	58.5	1011.8	8.4	20	11.1	6	0
23-12-2024	11:00:00	26.1	25.7	24.5	68.1	64.1	61.9	113.9	1012.5	13.9	15.3	8.4	1.3	0
23-12-2024	12:00:00	27.4	26.9	25.9	63.4	59.3	57	110.7	1012.4	11.7	13.3	6.8	2	0
23-12-2024	13:00:00	29	28.1	27.1	59.8	53.6	48.9	142.3	1011.5	325.3	22	7.7	1.3	0
23-12-2024	14:00:00	29.6	29.1	28.2	50.3	48.2	46	191.9	1010.8	307.5	26.6	12	2.6	0
23-12-2024	15:00:00	29.7	29.2	28.7	48.9	44.9	41.9	164.3	1010.2	300.4	28.6	12.4	4	0
23-12-2024	16:00:00	29.6	28.8	28.3	46.5	44.4	41.1	82.8	1009.6	311	22.6	11.2	3.3	0
23-12-2024	17:00:00	29	28.1	27.2	58	51	44.6	53.8	1009.2	2.6	21.3	9.3	2.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
23-12-2024	18:00:00	27.7	27.2	26.4	63.6	54.7	48.9	7.8	1009	355.2	16	8.7	3.3	0
23-12-2024	19:00:00	26.7	25.9	25.2	68.4	64.3	60.4	0	1009.5	1	12	6.3	1.3	0
23-12-2024	20:00:00	26.1	25.5	25	67.6	64.7	60.7	0	1010.1	11.1	12.6	6.8	2.6	0
23-12-2024	21:00:00	26.3	25.7	25.4	65.8	59.5	49.6	0	1010.6	348.5	34	12.1	4.6	0
23-12-2024	22:00:00	26.3	25.8	25.4	52.3	51.1	49.5	0	1011.3	341.1	40.6	20.5	7.3	0
23-12-2024	23:00:00	25.8	25.2	24.7	60	55.4	51.8	0	1011.3	346.6	33.3	15	5.3	0
24-12-2024	00:00:00	25	24.7	24.4	60.3	57.3	53.3	0	1010.7	344.9	32.6	16.5	6	0
24-12-2024	01:00:00	25.2	24.8	24.2	59.6	52.6	49.3	0	1010	341.2	36	17.8	7.3	0
24-12-2024	02:00:00	24.5	23.1	21.9	70.7	65.2	58.3	0	1009.7	6.3	27.3	11.5	5.3	0
24-12-2024	03:00:00	22.2	21.5	20.8	75.6	72.3	68.5	0	1009	15.3	18	10.5	6	0
24-12-2024	04:00:00	21.1	20.7	20.4	76.8	75.1	68.7	0	1008.7	8.3	22.6	10	6	0
24-12-2024	05:00:00	21.5	20.9	20.1	71.4	67.6	64.5	0	1008.8	5.1	26.6	12.5	6	0
24-12-2024	06:00:00	21.1	20.7	20.4	70.2	67.4	65.1	0	1009.1	354.7	28	14.7	6	0
24-12-2024	07:00:00	20.9	20.6	20.3	71.8	69.4	67.6	0	1009.6	354	29.3	15.4	8.6	0
24-12-2024	08:00:00	20.7	20.4	20.1	74.8	72.3	69.8	1.4	1010.3	357.2	27.3	14	7.3	0
24-12-2024	09:00:00	21.3	20.7	20.2	74.4	72.2	69.1	34.6	1011.4	5.6	22.6	13.1	8	0
24-12-2024	10:00:00	23.2	22.1	21	70.2	63.3	53.8	94.5	1012.7	352.8	34	16.6	8	0
24-12-2024	11:00:00	25.2	24.2	22.8	55.1	50.6	46.5	133.1	1013.5	347.4	38	18.5	6.6	0
24-12-2024	12:00:00	26.1	25.5	24.8	49.7	45.2	42.4	171.4	1013	346.4	36	18.6	7.3	0
24-12-2024	13:00:00	27.3	26.5	25.8	50	46	40.1	207.3	1011.8	354.6	32.6	15.5	7.3	0
24-12-2024	14:00:00	28.1	27.3	26.7	54.5	49.9	42.9	179.4	1010.8	333.3	28	13.2	5.3	0
24-12-2024	15:00:00	27.4	27	26.6	55.4	52.5	46.4	170.3	1010.1	319	34.6	16.1	7.3	0
24-12-2024	16:00:00	28.1	27.3	26.5	50.8	45.3	39.6	104.8	1009.7	329.1	30.6	14.5	4	0
24-12-2024	17:00:00	27.9	27.3	26.8	43.2	41.1	36	56.9	1009.5	331.3	28	13.2	4.6	0
24-12-2024	18:00:00	27.3	26.4	25.5	45.5	42.9	37.6	8.8	1009.8	328.3	22.6	10.9	3.3	0
24-12-2024	19:00:00	26.2	25.8	25.5	42.4	36.8	33	0	1010.5	323.7	26	12.5	3.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
24-12-2024	20:00:00	26.5	26	25.6	38.7	34.4	27.4	0	1011.3	331.3	25.3	11.6	3.3	0
24-12-2024	21:00:00	26.5	26	25.6	40.4	34.2	28.2	0	1011.9	336.6	30	13.6	4	0
24-12-2024	22:00:00	26.1	25.6	25.2	44.6	41.4	38	0	1012.4	337.4	34	15.3	5.3	0
24-12-2024	23:00:00	25.6	25.2	24.7	50.4	46.1	42.1	0	1012.3	335.6	34	15.3	5.3	0
25-12-2024	00:00:00	25.4	24.6	24.1	59.6	53.5	46	0	1011.8	340	30	14.6	5.3	0
25-12-2024	01:00:00	24.6	24.1	23.5	61.3	57.5	54.5	0	1011.4	332.4	28.6	13.6	2.6	0
25-12-2024	02:00:00	23.9	23.4	22.9	66.8	63.6	60.9	0	1011	337.2	34.6	16.9	4.6	0
25-12-2024	03:00:00	23.3	22.8	22.4	73.6	71.1	66.7	0	1010.5	340.4	38.6	19.1	6.6	0
25-12-2024	04:00:00	22.8	22.3	21.5	79.2	76	72.2	0	1010.2	344	38	18	8	0
25-12-2024	05:00:00	21.9	21.5	21.1	78.5	75.8	74.1	0	1009.7	346.6	34	20.1	9.3	0
25-12-2024	06:00:00	21.4	21	20.7	75.4	74.5	74	0	1009.8	343	30	16.4	5.3	0
25-12-2024	07:00:00	21.1	20.7	20.4	78.8	76.4	74	0	1009.9	346.7	29.3	16.2	6	0
25-12-2024	08:00:00	20.8	20.2	18.6	83.6	81.3	78	1.3	1010.4	349.8	24	14.1	4.6	0
25-12-2024	09:00:00	21.8	20.9	20.2	83.1	78.3	72.5	34.6	1012	354.2	20.6	9.3	2.6	0
25-12-2024	10:00:00	24	22.6	21.5	72.7	68.6	62.3	95.8	1013.3	355.6	23.3	12.5	6.6	0
25-12-2024	11:00:00	25.6	24.5	23.5	63.9	62.1	59.7	149.5	1013.9	9	22	11.7	5.3	0
25-12-2024	12:00:00	27.7	26.5	25.3	60.4	55.6	50.7	202.3	1013.9	11.2	18.6	9.5	6	0
25-12-2024	13:00:00	29.6	27.4	25.8	52.7	49.2	46.6	228.4	1013	7.5	14.6	8.6	3.3	0
25-12-2024	14:00:00	31.3	30.3	29.3	49.3	44.5	39.5	214.3	1012.4	2.5	16	6.9	0.6	0
25-12-2024	15:00:00	31.1	30.3	29.8	52.4	49.9	46.6	163.5	1011.3	322.4	20.6	9	2	0
25-12-2024	16:00:00	30.4	29.4	28.9	57	55.1	51.1	115.2	1010.4	317.2	22.6	11.3	3.3	0
25-12-2024	17:00:00	29.3	28.6	28.2	56.5	54.6	52.9	56.7	1009.9	320.9	23.3	12.6	4.6	0
25-12-2024	18:00:00	28.6	27.5	26.7	63.5	59.3	54.4	8.5	1009.9	319.6	23.3	11.6	4	0
25-12-2024	19:00:00	27	24.8	22.7	63.4	61.6	59.6	0	1010.2	319.7	24	11	3.3	0
25-12-2024	20:00:00	26.9	26.6	26.3	59.8	58.6	57.7	0	1011.6	323.4	16	8.1	2.6	0
25-12-2024	21:00:00	27.3	26.9	26.4	59.8	58.6	56.5	0	1012.7	320.5	18.6	9.7	3.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
25-12-2024	22:00:00	27.3	26.8	26.3	67.6	63.7	58.7	0	1013.2	338.9	24	11.6	3.3	0
25-12-2024	23:00:00	26.7	26.1	25.7	70.1	68.8	67.4	0	1013.1	347	24	12.7	4.6	0
26-12-2024	00:00:00	26.1	25.6	25.1	73.1	69.9	68.2	0	1012.8	346.6	22	12.8	4.6	0
26-12-2024	01:00:00	25.4	24.9	24.4	77.4	75.1	72.1	0	1012	349.1	20	11.8	4	0
26-12-2024	02:00:00	26.5	24.5	24.1	78.8	77.3	76	0	1011.3	350.1	28	12.6	3.3	0
26-12-2024	03:00:00	24.5	23.9	23.4	79.7	78	76	0	1011	344.3	22	10.8	3.3	0
26-12-2024	04:00:00	24.3	23.5	23.1	81.3	79.7	78.5	0	1010.6	337.5	17.3	8.5	1.3	0
26-12-2024	05:00:00	23.6	23.2	22.7	83.4	81.8	81	0	1010.7	345.4	18	9.3	3.3	0
26-12-2024	06:00:00	23.3	23	22.7	84.6	83.4	82.6	0	1011	342.5	21.3	8.5	2	0
26-12-2024	07:00:00	23.3	22.9	22.6	85.8	84.4	83.3	0	1011.5	349	24	11.6	2.6	0
26-12-2024	08:00:00	22.9	22.6	22.3	88	86.6	85.4	0.6	1012.3	351.5	21.3	10.1	2.6	0
26-12-2024	09:00:00	22.9	22.5	22.2	89.3	88.4	87.4	23.9	1013.3	14	16.6	8.9	4.6	0
26-12-2024	10:00:00	25.2	23.9	22.6	89.1	84.9	80	76.6	1014.8	6.2	12.6	6.5	2.6	0
26-12-2024	11:00:00	27.5	26.8	25	80.1	72	69.8	118.4	1015.8	350.5	10	5.9	0.6	0
26-12-2024	12:00:00	30.8	29.1	27.3	70	63.8	58.3	135.9	1016.2	13.3	10	2.1	0	0
26-12-2024	13:00:00	31.4	30.2	29.2	64.3	60	56.7	150.3	1015.5	155	16	0.8	0	0
26-12-2024	14:00:00	30.4	29.4	28.4	69.3	65.6	61.7	139.5	1013.6	296.1	21.3	8.7	0.6	0
26-12-2024	15:00:00	30.6	29.6	28.7	68.4	65.2	62	139.7	1013	293.5	19.3	10.5	3.3	0
26-12-2024	16:00:00	29.6	28.3	27.5	73.4	70.5	65.4	81	1012.2	296	20.6	11.2	2.6	0
26-12-2024	17:00:00	28	27.5	26.8	73.1	71.8	69.8	28.2	1011.2	295.4	21.3	10.7	2.6	0
26-12-2024	18:00:00	27.4	27	26.7	72.9	70.7	69.2	5.6	1011.5	297.1	18.6	7.1	0	0
26-12-2024	19:00:00	27.1	26.6	26.2	74.6	69.5	68.9	0	1012	300.3	12.6	5.9	0	0
26-12-2024	20:00:00	26.5	25.8	25.4	78.3	75.9	74.1	0	1012.6	324.3	9.3	1	0	0
26-12-2024	21:00:00	26.1	25.7	25.4	79.5	76.9	73.7	0	1013	322.7	8	2.1	0	0
26-12-2024	22:00:00	26.4	26	25.6	79.3	74.7	71.6	0	1013.2	325.2	6	0.7	0	0
26-12-2024	23:00:00	26.4	25.8	25.4	80.9	77	71.4	0	1013.1	351.5	8	1.7	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
27-12-2024	00:00:00	26.3	25.6	25.1	80.9	78.8	76.6	0	1013.2	6	41.3	6.4	2	0.5
27-12-2024	01:00:00	26.1	25.7	25.3	80.9	78.3	76.3	0	1013.2	349.8	17.3	8.2	0.6	0
27-12-2024	02:00:00	25.7	25.2	24.4	83.3	82.1	80.2	0	1012.8	5.4	9.3	2.5	0	0
27-12-2024	03:00:00	24.7	24.4	24.1	85.6	84.1	82.2	0	1011.7	248.2	10.6	0	0	0
27-12-2024	04:00:00	24.8	24.3	24	88.9	87.5	85.4	0	1011.3	355.6	10	1.7	0	0
27-12-2024	05:00:00	24.6	24.1	23.5	92.7	91	88.7	0	1011.3	18.8	10.6	4.7	0.6	0
27-12-2024	06:00:00	24.1	23.7	23.3	94.5	93.3	92.3	0	1011.3	16.8	9.3	3.5	0	0
27-12-2024	07:00:00	23.9	23.5	23	96.3	95.4	94.3	0	1011.7	346.5	12	3.4	0	0
27-12-2024	08:00:00	23.8	23.4	22.9	96.8	95.2	93.9	0.3	1012.8	333.4	18.6	4.9	0.6	0
27-12-2024	09:00:00	24.7	23.9	23.2	94	91.5	88.2	24.6	1014.1	349	12	4.6	0	0
27-12-2024	10:00:00	26	24.8	24.2	88.3	85.8	81.3	73.7	1015.1	349.1	16.6	8.3	1.3	0
27-12-2024	11:00:00	27.4	26.4	25.7	81.4	79	74	124.2	1016	354.1	16.6	7.8	0.6	0
27-12-2024	12:00:00	27.7	27.1	26.5	74.7	72.5	70.5	131.9	1015.7	322	22	10.2	2.6	0
27-12-2024	13:00:00	29.4	28.3	26.9	72.6	67.5	63.6	161.3	1014.8	315.3	48	9.1	1.3	0
27-12-2024	14:00:00	28.5	25.6	24.2	66.7	64.9	62.8	170.4	1012.9	303.1	27.3	10.8	1.3	0
27-12-2024	15:00:00	29.3	24.3	23.7	65.1	62.3	59.8	159.9	980.4	297.4	26	10.4	2	0
27-12-2024	16:00:00	29.9	29.2	28.5	64.1	61.5	58.9	114.5	1012.8	301.4	25.3	9.5	2	0
27-12-2024	17:00:00	29.6	29.1	28.6	60.4	59	58.1	55.8	1012.3	303.2	28	8.8	2	0
27-12-2024	18:00:00	29.1	28.4	27.6	63.4	61	58.9	7.9	1011.8	312.2	14	6	0.6	0
27-12-2024	19:00:00	27.9	27.5	27.1	66	61.9	59.6	0	1012.2	340.9	31.3	11.3	1.3	0
27-12-2024	20:00:00	27.6	26.9	26.4	62.8	61.8	60	0	1012.9	339.7	42.6	20.3	8.6	0
27-12-2024	21:00:00	26.8	26.4	26.1	63.8	62.3	60.3	0	1013.7	335.7	38	17.2	6.6	0
27-12-2024	22:00:00	26.5	26	25.6	63.6	62.5	61.5	0	1014.2	327.1	34.6	14.5	6	0
27-12-2024	23:00:00	26.1	25.6	25.4	64.9	63	61	0	1014.2	320.4	35.3	15.6	6.6	0
28-12-2024	00:00:00	25.6	25.3	25	67.7	64.3	62.5	0	1014.2	322.4	28.6	12.9	4	0
28-12-2024	01:00:00	25.4	24.8	24.4	68.9	65.8	62.7	0	1013.7	326	32	15.5	6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
28-12-2024	02:00:00	24.7	24.2	23.8	72.9	70.4	68.6	0	1013	337.8	32	14.2	4	0
28-12-2024	03:00:00	24.2	23.8	23.3	76.8	74.9	72.5	0	1012.4	336.2	31.3	15	4.6	0
28-12-2024	04:00:00	23.8	23.5	23.1	76.5	75.3	74.7	0	1011.7	342.3	32.6	17	6.6	0
28-12-2024	05:00:00	23.5	23.2	22.9	76.7	75.7	74.5	0	1011.8	343.8	31.3	16.7	5.3	0
28-12-2024	06:00:00	23.4	22.9	22.6	78.2	76.7	75.5	0	1012.3	342.3	36	17.7	6.6	0
28-12-2024	07:00:00	23	22.6	22.1	79.3	78.6	77.8	0	1012.5	339.4	28	13.8	4.6	0
28-12-2024	08:00:00	22.6	22.3	22	80.9	79.7	78.5	0.4	1013.5	343.3	28	14.7	6	0
28-12-2024	09:00:00	23.1	22.4	22.1	81.1	80.1	78.2	23.9	1014.4	347.6	27.3	14.1	5.3	0
28-12-2024	10:00:00	24.6	23.5	22.8	78.4	76.5	73.3	71.5	1015.7	353.8	25.3	11.7	5.3	0
28-12-2024	11:00:00	25.5	24.9	24.2	74.2	71.7	69.4	120.9	1016.3	6.8	23.3	10.9	5.3	0
28-12-2024	12:00:00	26.7	25.8	24.9	72.5	68.3	65.2	166.3	1015.9	10.6	18.6	10.3	6	0
28-12-2024	13:00:00	28	27	26	69.1	65.3	61.6	187.2	1015.2	5.2	27.3	10.1	2.6	0
28-12-2024	14:00:00	28.5	28.1	27.5	63.8	61.7	59.5	176.8	1014.2	334	26	10.8	2.6	0
28-12-2024	15:00:00	28.2	27.8	27.5	64.2	62.3	60.7	149.2	1013.1	324	24.6	12.1	3.3	0
28-12-2024	16:00:00	27.9	27.5	27.1	68.1	65.9	62.9	111.2	1012.5	320.5	28.6	12.5	4	0
28-12-2024	17:00:00	27.7	27.3	26.8	72.3	69.4	67.6	58.1	1012	322.9	30	12	4.6	0
28-12-2024	18:00:00	27.1	26.7	26	73.2	71.6	70.4	9	1012.1	321.8	22	9.4	3.3	0
28-12-2024	19:00:00	26.3	25.9	25.6	76.4	75	72.7	0	1012.2	322.1	20	8.7	2.6	0
28-12-2024	20:00:00	25.9	25.6	25.3	76.3	75.5	75.1	0	1012.7	326.9	20	7.7	1.3	0
28-12-2024	21:00:00	25.8	25.2	24.6	82.2	78.6	75.1	0	1013.2	348	19.3	9.3	3.3	0
28-12-2024	22:00:00	26	25.6	24.9	79.7	75.2	73.4	0	1014.1	346.3	28.6	14.1	6	0
28-12-2024	23:00:00	25.7	25.4	25	76.5	73.9	72.2	0	1014.3	342.3	30.6	16.3	4	0
29-12-2024	00:00:00	25.4	24.9	24.5	75.4	74.6	73.9	0	1013.9	340	34.6	17.7	5.3	0
29-12-2024	01:00:00	24.8	24.4	23.9	78.2	75.9	74.3	0	1013.3	343.7	32	18.2	8	0
29-12-2024	02:00:00	24.3	23.8	23.3	83.4	80	77.8	0	1012.8	347.9	34.6	20.2	8.6	0
29-12-2024	03:00:00	23.8	23.2	22.7	84.4	82.8	81.2	0	1012.4	357.2	28.6	14.4	8.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
29-12-2024	04:00:00	23	22.7	22.3	84	80.7	76.3	0	1011.9	350.3	25.3	14.2	4.6	0
29-12-2024	05:00:00	23	22.7	22.4	79.5	77.8	76.5	0	1011.8	344.7	30.6	15.6	5.3	0
29-12-2024	06:00:00	23.1	22.7	22.4	82.1	80.5	78.9	0	1012.1	341.4	32	15.1	6	0
29-12-2024	07:00:00	22.8	22.3	21.7	86.9	84.6	81.8	0	1012.6	346.5	32.6	17.3	4.6	0
29-12-2024	08:00:00	22	21.3	20.7	92	89.8	86.4	1	1013.2	359.2	34	16.1	9.3	0
29-12-2024	09:00:00	21.3	20.9	20.5	93.5	92.7	91.8	31.9	1014	3.2	34	14.2	9.3	0
29-12-2024	10:00:00	23.7	22	20.8	92.8	90.5	86.3	91.5	1015.2	16	23.3	12.2	6.6	0
29-12-2024	11:00:00	27.5	25.3	23.5	86.5	80.2	73.4	144.2	1016	24.2	25.3	8.6	1.3	0
29-12-2024	12:00:00	30	28.6	27.1	74.1	68.4	63.8	187.9	1016.2	64.7	18	5.8	0.6	0
29-12-2024	13:00:00	31.6	29.6	28.5	71.3	65.4	57.3	229.5	1015.3	104.4	12	6.4	0.6	0
29-12-2024	14:00:00	34.2	32.1	30.6	62.5	55.8	45.8	220.5	1015	294	23.3	6.5	0	0
29-12-2024	15:00:00	31.4	30.8	29.9	66.7	63.4	60	187.9	1013.6	300.9	27.3	13	3.3	0
29-12-2024	16:00:00	31.5	30.5	29.3	68.9	65.3	62.2	126	1013.2	314.4	25.3	13.1	4.6	0
29-12-2024	17:00:00	29.5	29.1	28.5	70.7	69.3	68.2	63.4	1012.7	321	30	12.3	2.6	0
29-12-2024	18:00:00	28.9	28.2	27.3	75.1	71.9	69.8	12.4	1012.3	320.6	23.3	10	2	0
29-12-2024	19:00:00	27.6	27.1	26.8	76.7	75.9	74.9	0	1012.7	319.7	21.3	9.4	3.3	0
29-12-2024	20:00:00	27.5	26.9	26.5	79.4	77.1	74.5	0	1013.5	332.2	31.3	13.1	5.3	0
29-12-2024	21:00:00	27.4	26.6	26	79.1	77.5	74.9	0	1014.2	350.9	32.6	17.3	8.6	0
29-12-2024	22:00:00	26.3	25.9	25.5	78.6	76.9	75.1	0	1014.6	348.6	32	18.6	10.6	0
29-12-2024	23:00:00	25.9	25.4	24.9	77.1	75.4	74.3	0	1014.5	347.9	34	18.4	8.6	0
30-12-2024	00:00:00	25.2	24.8	24.2	82.5	79.4	76.7	0	1013.9	354.6	30.6	15.8	8	0
30-12-2024	01:00:00	24.5	24	23.6	85.6	84.2	82.4	0	1013	357.1	24	12.5	6	0
30-12-2024	02:00:00	24.4	23.9	23.5	85.2	84	83.1	0	1012.9	347	27.3	15.1	6	0
30-12-2024	03:00:00	23.8	23.2	22.7	90.7	88	85	0	1012.1	354.4	27.3	13.8	6.6	0
30-12-2024	04:00:00	23.1	22.8	22.5	93.1	91.8	90.5	0	1011.2	0.4	19.3	10.5	6	0
30-12-2024	05:00:00	22.9	22.6	22.3	94.5	93.3	92.7	0	1011.2	356.1	22	11.6	6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
30-12-2024	06:00:00	22.6	22.3	21.9	95.4	94.8	94	0	1011.1	350.8	24	13.8	6.6	0
30-12-2024	07:00:00	22.2	21.9	21.7	96.9	96.1	95.1	0	1011.8	5.3	19.3	10	6	0
30-12-2024	08:00:00	22	21.8	21.5	97.2	96.7	96.3	1.2	1012.7	9.3	16.6	10	6	0
30-12-2024	09:00:00	23.5	22.4	21.7	96.8	94.6	92.2	36.9	1014.3	12.2	16	9.7	6	0
30-12-2024	10:00:00	25.4	24.3	23.2	92.5	88.6	84.6	95.2	1015.6	3.8	17.3	9.7	6	0
30-12-2024	11:00:00	28.3	27.3	25.1	84.7	76.2	72.4	166.8	1016.4	351.8	16.6	9.6	2.6	0
30-12-2024	12:00:00	31	29.6	28.1	73	66.5	60.5	198.5	1016.6	353	15.3	8.1	4	0
30-12-2024	13:00:00	34.1	31.6	29.3	61.1	56.3	52	217	1016.3	3.4	12	4.3	0	0
30-12-2024	14:00:00	35.1	33.2	31.6	61.1	55.3	48.8	209.8	1015.2	289.4	19.3	5.6	0	0
30-12-2024	15:00:00	32.7	31.8	31.3	62.1	60.5	58.4	181.5	1013.5	295.4	23.3	12.2	4	0
30-12-2024	16:00:00	32.1	31.4	30.4	64.4	61.4	59.6	125.3	1013.1	302.4	22	10.7	2	0
30-12-2024	17:00:00	31.2	30.1	29.3	67.6	65.3	62.8	63.6	1012.6	320.6	28	12.7	4.6	0
30-12-2024	18:00:00	29.7	29	28.1	70.5	68.5	67.1	11.6	1012.1	320.6	21.3	11	4	0
30-12-2024	19:00:00	28.5	27.7	27.2	73.1	72.1	70.3	0	1012.3	322.1	17.3	7.3	0.6	0
30-12-2024	20:00:00	27.9	27.5	27.1	72.5	71.2	70	0	1013.2	328.4	24	8.9	3.3	0
30-12-2024	21:00:00	28	27.5	26.5	77.3	71.2	69.3	0	1013.7	343.9	27.3	14.7	4	0
30-12-2024	22:00:00	26.7	26.1	25.7	84.3	81.5	77.2	0	1014.3	349.9	30.6	14.7	6.6	0
30-12-2024	23:00:00	26.2	25.6	25.1	83	81.8	80.5	0	1014.4	351.9	25.3	14.8	8	0
31-12-2024	00:00:00	25.6	25	24.4	83.6	82	80	0	1014	7.3	26	10.5	5.3	0
31-12-2024	01:00:00	24.8	24.5	24.2	83	82.1	81.2	0	1013.4	358.9	20	10.4	5.3	0
31-12-2024	02:00:00	24.5	24.2	23.8	83.9	83.1	82.3	0	1012.8	354.8	19.3	10.6	4.6	0
31-12-2024	03:00:00	24.6	24.3	23.9	83.3	81	78.8	0	1012.6	353.4	21.3	11.6	5.3	0
31-12-2024	04:00:00	24.6	23.9	23.4	82.9	80.9	78.3	0	1011.9	351.3	22.6	13.5	6	0
31-12-2024	05:00:00	24.1	23.5	22.9	84.6	82.8	79.7	0	1011.5	358.2	22	10.9	5.3	0
31-12-2024	06:00:00	23.4	23	22.6	86.2	84.8	83.7	0	1011.9	353.9	25.3	14	6	0
31-12-2024	07:00:00	23.1	22.5	21.9	89.4	87.7	85.9	0	1012.4	352.8	24	12.6	6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
31-12-2024	08:00:00	22.1	21.7	21.4	90.9	90	88.9	1	1013.3	6.1	24	11.1	5.3	0
31-12-2024	09:00:00	23.4	22.4	21.6	90.2	88.3	85.5	33.5	1014.6	349.6	24.6	15.6	8	0
31-12-2024	10:00:00	25.3	24.2	23.2	86	83.9	81.6	95.3	1016.2	354.5	23.3	12.4	7.3	0
31-12-2024	11:00:00	28.5	27.4	25	81.8	76.3	73.9	170.3	1017	0.9	16.6	9.7	2	0
31-12-2024	12:00:00	30.7	29.3	28.2	75	70	64.7	201.1	1017	4.3	19.3	9.9	4.6	0
31-12-2024	13:00:00	32.5	31.5	30.4	65.3	61.9	58.2	223.4	1016.7	356.1	16.6	8.6	2	0
31-12-2024	14:00:00	33.9	32.9	32.1	61.4	58.8	56.5	206.1	1015.6	335	19.3	6.5	0	0
31-12-2024	15:00:00	32.8	31.7	30.8	64.6	61.9	59.6	181.9	1014.2	313.4	27.3	13.1	3.3	0
31-12-2024	16:00:00	32.3	31.8	31.1	60.6	58.5	56.9	133.5	1013.6	316.8	22	10.8	4.6	0
31-12-2024	17:00:00	31.9	29.7	26.9	60	58.5	56.5	72.1	1013.1	317.9	26	13.2	4.6	0
31-12-2024	18:00:00	30	28.1	25.8	58.4	56.4	52.5	15.4	1012.8	319.5	24	10.7	3.3	0
31-12-2024	19:00:00	29.4	28.9	28.6	53.3	52.4	51.6	0	1013	330	25.3	11.5	4	0
31-12-2024	20:00:00	29.2	28.8	28.5	52.3	51.6	51.1	0	1013.6	338.5	32	15.7	6.6	0
31-12-2024	21:00:00	29.2	28.9	28.5	52.8	51.6	51.1	0	1014.2	339.9	31.3	15.1	4.6	0
31-12-2024	22:00:00	29	27.6	25.5	73.1	60.7	51.6	0	1014.1	350.6	27.3	12.9	4.6	0
31-12-2024	23:00:00	26.3	25.7	25.1	75.5	71	66.6	0	1014.1	358	20	9.5	5.3	0
01-01-2025	00:00:00	25.7	25.4	25	75.8	73.5	71.7	0	1013.8	349.5	24	15.7	8.6	0
01-01-2025	01:00:00	25.7	25	24.6	79.6	76.9	74.5	0	1013.1	0.2	18	9.1	3.3	0
01-01-2025	02:00:00	25.2	24.7	24	80.3	79.2	78.3	0	1012.8	9.9	19.3	10.2	5.3	0
01-01-2025	03:00:00	24.4	23.9	23.5	84	82.2	80	0	1012.1	2	17.3	8	3.3	0
01-01-2025	04:00:00	24	23.6	23.3	84.9	83.2	81.8	0	1011.4	358.2	16	8.9	4.6	0
01-01-2025	05:00:00	23.8	23.4	23	85.1	83.8	82.6	0	1011.1	8.8	19.3	10.9	6	0
01-01-2025	06:00:00	23.5	22.9	22.3	88.5	85.5	83.6	0	1011.1	9.3	18	10.6	4.6	0
01-01-2025	07:00:00	22.8	22.5	22.1	90.2	88.8	88	0	1011.2	9.6	14	8.2	4	0
01-01-2025	08:00:00	22.9	22.6	22.2	90.4	89.8	89.1	1.8	1012.2	5.5	14.6	8	4	0
01-01-2025	09:00:00	23.8	23	22.3	90.3	88.1	85.6	42.6	1013.5	358.6	21.3	9.9	4.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
01-01-2025	10:00:00	26.6	24.8	23.4	86.3	82.6	76.7	112.4	1015.1	355.1	16	8.9	4.6	0
01-01-2025	11:00:00	29.8	28.9	26.3	76.8	67.3	64.1	189.6	1016.8	353.4	19.3	5	1.3	0
01-01-2025	12:00:00	33.9	32.2	29.5	64.9	57.9	52.2	215.8	1017.4	57.4	6.6	0.8	0	0
01-01-2025	13:00:00	34.4	32.7	31.4	60.4	56	48.8	241.1	1016.2	294	17.3	5.8	0	0
01-01-2025	14:00:00	32.2	31.1	30.6	61.9	60.3	58.3	234.5	1013.6	297	37.3	13.6	4	0
01-01-2025	15:00:00	31.6	31	30.2	62.5	60.1	57.9	202	1012.6	295.7	27.3	14.4	3.3	0
01-01-2025	16:00:00	31.6	31.1	30.6	60.7	59.2	57.3	135.4	1011.9	300.1	28	11.6	1.3	0
01-01-2025	17:00:00	31.6	31	30.4	59.4	57.8	56.4	57.6	1011.2	311.4	17.3	7.7	0.6	0
01-01-2025	18:00:00	30.9	30.2	29.3	58	51.5	48.5	12.4	1010.9	315.4	15.3	7	0.6	0
01-01-2025	19:00:00	29.6	28.5	27.8	63.6	58.2	51	0	1010.7	316.1	13.3	4.9	0.6	0
01-01-2025	20:00:00	28.3	28	27.3	63.7	60.7	57.6	0	1011.6	327.5	12.6	5.9	1.3	0
01-01-2025	21:00:00	27.8	26.9	26	79.9	72.5	62.9	0	1012.5	350.6	16.6	7.8	2	0
01-01-2025	22:00:00	27.3	26.3	25.7	81.8	77	67.3	0	1013	353.1	18.6	8.7	2.6	0
01-01-2025	23:00:00	26.9	26.3	25.7	76.8	73.9	70.4	0	1013	360	18.6	9.7	5.3	0
02-01-2025	00:00:00	26.1	25.7	25.2	77.5	75.4	74.2	0	1012.5	351.8	25.3	12.7	8	0
02-01-2025	01:00:00	25.6	25.2	24.8	78.7	76.4	74.7	0	1012.1	350.2	23.3	14.4	8	0
02-01-2025	02:00:00	25.2	24.6	24	82.9	80.5	78.1	0	1011.4	354.6	22.6	12.9	6.6	0
02-01-2025	03:00:00	24.3	23.8	23.4	86.3	84.5	82.6	0	1011.1	4.8	23.3	10.9	6.6	0
02-01-2025	04:00:00	23.9	23.5	23.2	86.8	85.8	84.8	0	1010.5	13.4	15.3	9.3	4.6	0
02-01-2025	05:00:00	23.6	23.3	23	87.9	86.6	85.4	0	1010.7	15.5	12.6	6.2	2	0
02-01-2025	06:00:00	24.4	23.9	23.3	85.9	81.9	78	0	1010.8	47.3	20.6	6.6	1.3	0
02-01-2025	07:00:00	24.4	24.1	23.8	80.9	79.2	77.5	0	1011.1	48.9	24.6	8.7	2	0
02-01-2025	08:00:00	24.3	24	23.8	80.8	79	76.8	1.9	1012.2	54.7	23.3	7.6	1.3	0
02-01-2025	09:00:00	25.7	24.7	24	78.6	76.4	74.3	41	1013.4	50.5	26	9.3	4.6	0
02-01-2025	10:00:00	27.9	26.6	25.3	75.1	69.6	64	104.7	1014.8	46.2	29.3	10.5	4	0
02-01-2025	11:00:00	30.9	30	27.7	65.7	58	54.7	152.7	1016.3	54	22	5.9	1.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
02-01-2025	12:00:00	32.9	31.6	30.6	60.7	55.3	49.6	200.9	1016.2	96.6	16.6	6.6	0.6	0
02-01-2025	13:00:00	34.8	33	31.1	58.5	50.6	44.2	231	1015.7	125	14.6	5.6	0	0
02-01-2025	14:00:00	35.7	35	34.4	46	40	36.5	233.3	1014.6	5.6	16.6	3.7	0	0
02-01-2025	15:00:00	35.5	34.7	34.1	44.7	41	36.5	203.5	1013.2	36	17.3	4.8	0	0
02-01-2025	16:00:00	36.9	35.5	34.4	48.9	43.1	33.9	137.3	1013	276.9	14	2.5	0	0
02-01-2025	17:00:00	36	34.9	33.7	49.6	45.9	42.2	69.4	1012.8	296.2	14	3.8	0	0
02-01-2025	18:00:00	33.9	32.9	32	52.2	50.4	47.9	15.4	1012.3	308.8	12.6	4.5	0	0
02-01-2025	19:00:00	32.3	31.2	30.4	60.3	55.8	50.5	0	1011.8	344.5	20.6	9.2	0	0
02-01-2025	20:00:00	30.8	29.7	28.1	72.4	63.5	59.5	0	1012	347.9	19.3	13	6.6	0
02-01-2025	21:00:00	28.5	27.9	27.3	75.6	69.2	63	0	1012.4	349.1	20.6	12.4	7.3	0
02-01-2025	22:00:00	28.1	27.4	26.7	70.2	67.9	65.5	0	1013	1.4	14.6	8.8	6	0
02-01-2025	23:00:00	27.3	26.9	26.6	70.7	69.2	67.3	0	1013.1	0.9	14.6	7.8	4	0
03-01-2025	00:00:00	27.1	26.7	26.2	71.9	69.1	67.3	0	1012.8	0.3	14	8.5	5.3	0
03-01-2025	01:00:00	26.5	25.8	25.1	76.8	73	69.4	0	1012.2	15.2	12	6.9	4	0
03-01-2025	02:00:00	26.3	25.2	24.6	76.7	72	64.4	0	1011.7	57.6	16.6	5	0	0
03-01-2025	03:00:00	26.2	25.7	25.2	70.2	66.7	63.9	0	1011.5	62.9	21.3	5.8	2	0
03-01-2025	04:00:00	25.6	25.2	24.6	71.3	68.2	66.2	0	1011	67.7	19.3	5.7	1.3	0
03-01-2025	05:00:00	24.9	24.5	23.9	70.5	67.5	65.5	0	1010.9	68.1	18	5.4	0	0
03-01-2025	06:00:00	24.3	23.7	23.2	71.1	69	66.5	0	1010.7	55.7	21.3	6.4	0.6	0
03-01-2025	07:00:00	23.8	23.5	23.1	71.6	69.7	68.1	0	1011.3	61.3	19.3	6.1	1.3	0
03-01-2025	08:00:00	23.8	23.3	22.9	73.5	70.2	65.6	4	1012.1	44.6	18	6.2	0.6	0
03-01-2025	09:00:00	25.9	24.8	23.5	67.4	62.3	56.2	45.5	1013.8	33.6	19.3	8.5	3.3	0
03-01-2025	10:00:00	29.2	27.1	25.7	59.7	54.7	49.5	109.7	1015.4	56.9	21.3	4.9	0.6	0
03-01-2025	11:00:00	29.3	28.4	27.3	59.4	51.6	46	161.5	1015.3	82.6	20.6	9.4	1.3	0
03-01-2025	12:00:00	32.3	30.7	29	48.7	42.8	37.9	221.8	1015.5	81	19.3	7.5	1.3	0
03-01-2025	13:00:00	34.4	33.2	32.1	40.4	37.5	34.6	266.1	1015.6	108	12.6	4.9	0.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
03-01-2025	14:00:00	36.4	35.3	34	37.7	32.4	28	259.4	1014.8	149.4	13.3	3.8	0	0
03-01-2025	15:00:00	36.1	35	33.5	39.3	34.6	31.6	214.8	1013.6	251.2	28.6	7	1.3	0
03-01-2025	16:00:00	34.5	33.6	32.2	41.3	37	33.7	148.1	1012.8	280.5	20	8.8	2.6	0
03-01-2025	17:00:00	33.2	32.6	31.9	40.2	36.4	34	77.1	1011.8	296	20	9.4	0.6	0
03-01-2025	18:00:00	32.5	31.4	30	46.2	39.8	35.8	18.9	1011.1	293.8	17.3	8	2	0
03-01-2025	19:00:00	30.3	28.9	28	54.3	50.4	45.9	0	1010.3	306.8	11.3	4.5	0.6	0
03-01-2025	20:00:00	29.1	27.1	26	65.6	60.7	47.3	0	1010.8	302.4	9.3	3.5	0	0
03-01-2025	21:00:00	28	27.2	26.2	66.3	61.5	56.2	0	1011.3	339.3	18	4.6	0	0
03-01-2025	22:00:00	27.5	26.9	25.8	77.4	67.2	61.2	0	1011.5	353.2	15.3	8.3	1.3	0
03-01-2025	23:00:00	26	25.2	24.7	81.8	77.6	72.2	0	1011	360	13.3	8	4.6	0
04-01-2025	00:00:00	25.5	25.1	24.8	74.2	71.1	64.4	0	1010.6	356.2	16	9.1	4.6	0
04-01-2025	01:00:00	25.4	24.9	24.3	68.5	59.6	50.7	0	1010.1	359.6	20	10	4.6	0
04-01-2025	02:00:00	25.8	25	24.3	56.4	53	50	0	1009.9	10.9	16.6	6.1	0.6	0
04-01-2025	03:00:00	25.4	24.9	24.4	60.1	52.9	49.3	0	1009.6	18.4	10.6	4	0.6	0
04-01-2025	04:00:00	25.7	25	24.2	60	55.7	49.7	0	1009.4	36.1	12	5.7	0.6	0
04-01-2025	05:00:00	25.2	24.7	24.3	63.5	57.2	52.6	0	1009.3	55.5	11.3	4.3	0.6	0
04-01-2025	06:00:00	25	24.3	23.5	63.6	59	54.5	0	1009.3	65.3	16	5.3	0.6	0
04-01-2025	07:00:00	23.8	23.3	22.6	63.7	60.7	58.5	0	1009.7	40.7	17.3	5.2	0.6	0
04-01-2025	08:00:00	23.4	22.9	22.4	70.5	65.2	60	2.9	1010.6	9.3	12.6	3.5	0	0
04-01-2025	09:00:00	24.3	23.5	22.9	71	65.9	62.5	48.2	1012.2	8.3	10.6	6.1	2.6	0
04-01-2025	10:00:00	26.9	25.4	23.9	63.3	59	55.5	114.1	1014.1	24.9	8.6	4	0.6	0
04-01-2025	11:00:00	31	29.9	26.7	56.8	48.2	46.2	183.8	1015.4	57.5	8.6	1.8	0	0
04-01-2025	12:00:00	34.6	32.9	30.7	47.7	40.8	30	214.5	1015.9	47.5	5.3	1.1	0	0
04-01-2025	13:00:00	35.1	33.6	31	52.1	39.4	28.6	248	1014.7	298.4	18.6	3.3	0	0
04-01-2025	14:00:00	32.7	31.9	31.2	52.2	49.4	47.1	233.3	1012.3	306.6	20.6	9.5	2	0
04-01-2025	15:00:00	35	33.6	32.5	50.3	44.4	35.6	194.3	1011.6	343.4	14	4.3	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
04-01-2025	16:00:00	34.6	33.6	32.8	37.5	32.9	27.8	145.1	1011.1	293.3	18.6	8.9	2	0
04-01-2025	17:00:00	34.2	33.5	32.3	32.4	29.4	26.4	87.4	1010.7	292.4	19.3	7.8	0.6	0
04-01-2025	18:00:00	32.6	31.1	29.8	38.6	34.3	29.1	25	1010	294.8	18.6	9.7	2.6	0
04-01-2025	19:00:00	30.1	28.7	27.7	44.5	41.1	38.3	0	1009.3	294.8	12.6	7.2	1.3	0
04-01-2025	20:00:00	28.2	27.4	26.8	47.6	45.3	40.6	0	1009.7	309.5	10	3.8	0	0
04-01-2025	21:00:00	27.5	26.7	25.5	71.7	57.2	45.7	0	1010.2	352.5	8	1.7	0	0
04-01-2025	22:00:00	26.3	25.4	24.8	74	67.8	56.3	0	1010.6	1.1	10.6	4.2	0	0
04-01-2025	23:00:00	25.2	24.9	24.6	74.3	72.2	68.9	0	1010.7	7.3	11.3	5.7	2.6	0
05-01-2025	00:00:00	25.4	24.9	24.6	74.9	69.9	63.9	0	1010.1	356	18.6	8.3	3.3	0
05-01-2025	01:00:00	26.3	25.3	24.3	66.5	56.6	50.5	0	1009.8	317.9	24.6	8	2	0
05-01-2025	02:00:00	26.7	26.3	25.8	56.5	53.4	50.4	0	1009.9	322.4	26.6	9.5	4	0
05-01-2025	03:00:00	26.3	25.4	24.9	68	62.3	54.9	0	1009.4	319.9	26	13	4	0
05-01-2025	04:00:00	25.2	24.8	24.4	68.9	67.3	65.3	0	1008.9	321.4	27.3	12.2	4	0
05-01-2025	05:00:00	24.7	24.3	24	68.3	64.6	61.9	0	1008.8	328	37.3	15.8	5.3	0
05-01-2025	06:00:00	24.4	24.1	23.8	64.5	63.1	59	0	1008.9	334.1	41.3	18.8	7.3	0
05-01-2025	07:00:00	24.4	24.1	23.7	66.2	61.8	59.1	0	1009.5	339.7	43.3	19.7	8	0
05-01-2025	08:00:00	24.1	23.6	23.2	72.5	69.9	66	0.1	1010.2	343.7	32	15.9	5.3	0
05-01-2025	09:00:00	25	24.2	23.3	71.8	66.6	61.3	41	1011.8	346.4	32.6	17.3	6.6	0
05-01-2025	10:00:00	26.2	25.2	24.4	63.8	61.3	59.6	102.6	1012.9	352	30.6	15.4	8	0
05-01-2025	11:00:00	28.1	26.9	25.7	61.8	55.3	50.8	168.6	1013.7	5.4	25.3	12.2	7.3	0
05-01-2025	12:00:00	30	28.9	27.8	53.8	50.6	47.8	209.7	1013.6	357.4	22	9.9	4.6	0
05-01-2025	13:00:00	30.3	29.5	28	59.6	53.7	47.9	224.1	1012.6	344	29.3	12	6	0
05-01-2025	14:00:00	28.7	28.2	27.7	60.9	58.5	56.3	216.6	1010.7	317	34.6	16.8	5.3	0
05-01-2025	15:00:00	30.1	29.3	28.2	56.7	50.9	43.6	189.9	1010.1	319.2	31.3	14.5	4.6	0
05-01-2025	16:00:00	30.3	29.8	29	46.2	41.8	38.6	138.1	1009.8	319.6	35.3	17.1	6	0
05-01-2025	17:00:00	30.4	29.7	29.1	43.9	40.9	38	73.7	1009.6	335.9	32	14.2	5.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
05-01-2025	18:00:00	30	29.3	28.4	45.8	40.8	38.4	15.9	1009.6	340.5	34	14.3	4.6	0
05-01-2025	19:00:00	28.7	27.9	27.5	51.2	49.3	45.5	0	1009.5	347.3	30	18	7.3	0
05-01-2025	20:00:00	28.1	27.7	27.4	50.4	48.4	47.2	0	1010.4	345.8	32.6	18.4	6.6	0
05-01-2025	21:00:00	27.8	27.5	27.1	50.3	48.5	46.6	0	1011.6	344.3	26.6	15.5	6.6	0
05-01-2025	22:00:00	27.9	27.4	26.8	53.5	48.6	45.8	0	1011.9	337.1	32	15.8	6	0
05-01-2025	23:00:00	27.1	26.5	25.9	61.1	57	53.3	0	1011.8	327.1	40.6	14.9	4	0
06-01-2025	00:00:00	26.3	25.7	25.1	62.4	58.4	54.1	0	1011.4	333.5	44.6	19.7	6	0
06-01-2025	01:00:00	25.4	24.9	24.4	58	55.8	54	0	1010.9	341.4	42.6	21.8	7.3	0
06-01-2025	02:00:00	24.7	24.1	23.8	61.1	56.1	50.6	0	1010.6	346.3	37.3	19.7	8.6	0
06-01-2025	03:00:00	24.3	23.6	23	57.7	53.7	50	0	1010.2	340.8	44.6	20.6	8	0
06-01-2025	04:00:00	23.6	23.1	22.6	56.3	53.5	50.3	0	1009.9	337.5	44.6	19.7	5.3	0
06-01-2025	05:00:00	23.1	22.4	21.8	59.5	56.2	52.5	0	1009.9	345.9	36	20	8	0
06-01-2025	06:00:00	22.1	21.7	21.2	65.9	61.1	57.7	0	1009.9	347.2	32.6	17.3	6	0
06-01-2025	07:00:00	21.6	21.3	21	69.3	64.4	61.8	0	1010.4	348.2	30.6	18.6	6.6	0
06-01-2025	08:00:00	21.4	21.1	20.8	71.1	65.4	61.7	1.3	1011.2	348.5	30	16.5	5.3	0
06-01-2025	09:00:00	21.7	21.2	20.7	68.6	65.9	63.3	39.4	1013	0	26	13.6	7.3	0
06-01-2025	10:00:00	24.2	22.8	21.4	67.4	63.3	53.8	103.5	1014.4	354.9	30	13.9	7.3	0
06-01-2025	11:00:00	25.8	25.5	23.9	57.3	51.2	50.3	200.6	1014.7	5.4	28.6	14.2	4.6	0
06-01-2025	12:00:00	27.1	26.3	25.4	52.9	49.2	46.2	225	1014.5	357.3	28	13.1	6	0
06-01-2025	13:00:00	27.8	27.1	26.6	51.3	48.6	44.7	240.2	1013.6	322.8	30	13.9	4.6	0
06-01-2025	14:00:00	28.1	27.3	26.6	53.6	52.1	49.3	231.3	1012.1	317.8	32	14.5	3.3	0
06-01-2025	15:00:00	28.1	27.5	27.1	54.2	52.6	51.3	194.7	1011	317.3	36	16.9	6.6	0
06-01-2025	16:00:00	28.1	27.8	27.3	52.2	50.7	49.7	140.8	1010.5	317.7	34.6	17.3	6.6	0
06-01-2025	17:00:00	28	27.2	26.7	51.3	49.6	47.9	73.7	1010	320.2	43.3	19.6	6.6	0
06-01-2025	18:00:00	27.4	26.8	26.2	48.7	47.6	46.5	15.3	1010	327.4	34	16	5.3	0
06-01-2025	19:00:00	26.5	26.2	25.8	49.3	47.6	46.2	0	1010.4	330.1	35.3	17.4	6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
06-01-2025	20:00:00	26.4	26	25.6	53.1	50.4	48.6	0	1011	338.2	36	18.2	7.3	0
06-01-2025	21:00:00	26	25.6	25.3	53.2	50	46.9	0	1011.7	341.5	34.6	18.6	8	0
06-01-2025	22:00:00	26	25.7	25.3	47.4	45.3	43.7	0	1012.4	343.7	38.6	20.1	8	0
06-01-2025	23:00:00	25.7	25.2	24.5	55.8	48.8	44.3	0	1012.5	340.5	42	19.9	9.3	0
07-01-2025	00:00:00	24.9	24	23.2	62	57.2	53.8	0	1012.2	340	48	22.9	6.6	0
07-01-2025	01:00:00	23.5	23	22.5	54.1	51.7	49.7	0	1011.4	343.6	41.3	22.9	10.6	0
07-01-2025	02:00:00	22.8	22.1	21.2	63.4	56.1	51.4	0	1011	351.3	35.3	21	9.3	0
07-01-2025	03:00:00	21.6	20.8	20.3	65.8	62.9	60.3	0	1010.6	355.4	46.6	22.4	14.6	0
07-01-2025	04:00:00	20.8	20.3	19.6	68	64.2	61.8	0	1010.3	354.9	44	21.5	12	0
07-01-2025	05:00:00	20.2	19.8	19.5	71.7	69.1	65.1	0	1010.3	358.8	35.3	17.6	10	0
07-01-2025	06:00:00	20	19.6	19.3	72.9	71.1	68.7	0	1010.3	10.4	34.6	19.9	12	0
07-01-2025	07:00:00	20.2	19.6	19.1	74.4	72.8	70.8	0	1011	11.1	29.3	18.1	11.3	0
07-01-2025	08:00:00	20.2	19.9	19.6	76.2	73.4	71.3	1.2	1012	7.9	30.6	17.9	10.6	0
07-01-2025	09:00:00	20.8	20.2	19.7	74.9	70.4	66.5	36.4	1013.5	12.3	34.6	20.9	14.6	0
07-01-2025	10:00:00	22.9	21.6	20.5	70.2	65	60.2	100.2	1014.9	13.3	30.6	18	11.3	0
07-01-2025	11:00:00	25	24.3	22.7	62.9	56.2	52.1	172	1015.6	14.6	34	19.3	3.3	0
07-01-2025	12:00:00	26.9	25.7	24.7	56.3	51.9	47.6	205.5	1014.8	16.1	39.3	19.7	11.3	0
07-01-2025	13:00:00	28	27.3	26.5	51.5	46.9	43.3	231	1013.9	18.4	34	17.8	8	0
07-01-2025	14:00:00	29.3	28.4	27.5	48.8	44	39.8	227.9	1012.6	14	38	19	10	0
07-01-2025	15:00:00	30	29.4	28.9	46	41.4	36.7	196.5	1011.3	6.9	36.6	19.3	12	0
07-01-2025	16:00:00	30.2	29.8	29.4	42.4	37.7	33.2	147.8	1011	10.3	34	18.7	12.6	0
07-01-2025	17:00:00	30.2	29.8	29.1	41.1	36.4	32.1	81.5	1010.8	5.8	35.3	18	11.3	0
07-01-2025	18:00:00	29.4	28.5	27.5	43.8	40.2	37.4	19.5	1010.4	358	37.3	16.3	10	0
07-01-2025	19:00:00	27.9	27	26.1	42.9	39.9	36.7	0	1010.6	353.3	41.3	21	14	0
07-01-2025	20:00:00	26.4	25.8	25.3	45.2	42.3	39.5	0	1011	358.9	39.3	18.6	12	0
07-01-2025	21:00:00	25.6	24.6	23.5	50.3	46.3	41.6	0	1011.3	359.5	34	18	8.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
07-01-2025	22:00:00	23.9	23.1	22.1	56.4	51.5	46.8	0	1011.5	350.8	38	19.9	10	0
07-01-2025	23:00:00	22.5	21.9	21.3	59.5	56.8	54.5	0	1011.3	358.1	30	14.9	8	0
08-01-2025	00:00:00	21.6	21	20.5	63.1	59.8	57.1	0	1011	1.7	30	15.8	10	0
08-01-2025	01:00:00	20.8	20.2	19.5	63.6	61.1	58.6	0	1010.4	8.3	30.6	17.5	11.3	0
08-01-2025	02:00:00	19.9	19.6	19.3	65.1	62.5	59.9	0	1009.8	10.9	28.6	17.9	10.6	0
08-01-2025	03:00:00	19.7	19.3	19	66.4	63.7	61.4	0	1009.4	9.1	30	17.2	10.6	0
08-01-2025	04:00:00	19.7	19.3	18.6	68.9	65.7	62.7	0	1008.8	5.3	28.6	16.7	10.6	0
08-01-2025	05:00:00	19.1	18.8	18.4	69.8	67.5	65.5	0	1008.2	7.8	30	17.3	10.6	0
08-01-2025	06:00:00	18.7	18.2	17.6	71.8	69.3	66.4	0	1008.3	8.5	28	16.5	11.3	0
08-01-2025	07:00:00	18.3	17.9	17.7	74.5	71.8	69.7	0	1009.2	9.8	25.3	14.8	7.3	0
08-01-2025	08:00:00	18.1	17.8	17.5	76.3	75.1	73.7	1.8	1010.2	5.3	26	14.9	8.6	0
08-01-2025	09:00:00	19.3	18.5	17.7	75.5	71.8	67.8	40.2	1012.1	356.2	30	16.4	10	0
08-01-2025	10:00:00	22.3	20.5	19	69.3	63.7	57.6	103.4	1014.1	6.5	26	13	7.3	0
08-01-2025	11:00:00	24.8	23.9	22.1	59	51.3	48.7	174.1	1015.1	15.6	27.3	14.5	4	0
08-01-2025	12:00:00	27.1	25.8	24.5	51.1	46.8	43.4	211.8	1014.4	14.9	23.3	13.8	9.3	0
08-01-2025	13:00:00	29.1	27.8	26.7	46.2	40.7	34	241.9	1013.4	15.6	29.3	14.8	8	0
08-01-2025	14:00:00	30.6	29.6	28.7	41.9	37.1	32.9	237.5	1012.6	27	23.3	11.3	5.3	0
08-01-2025	15:00:00	31.8	31.3	30.3	37.8	32.3	28	202.9	1011.8	33.4	18	7.8	0.6	0
08-01-2025	16:00:00	32.5	31.9	31.4	35.1	30.8	27.3	145	1011.2	14.4	20	9.2	4.6	0
08-01-2025	17:00:00	32.5	31.4	30.8	42	36.2	30.1	78.1	1010.7	356	20.6	9.9	4	0
08-01-2025	18:00:00	31	30.1	29	41.8	36.8	32.9	17.2	1010.1	348.2	22	11.5	4.6	0
08-01-2025	19:00:00	29.4	28.2	26.9	49.9	43.3	38.7	0	1009.9	345.8	21.3	11.5	3.3	0
08-01-2025	20:00:00	27.2	26.3	25.5	56.7	51.8	48.4	0	1010.3	349.2	28.6	17.3	9.3	0
08-01-2025	21:00:00	25.8	25	24.5	59	55.4	50.5	0	1010.4	359.6	22.6	12.6	8	0
08-01-2025	22:00:00	25	24.3	23.8	54.5	52	49.4	0	1010.9	9.2	20.6	12.4	8.6	0
08-01-2025	23:00:00	24.2	23.7	22.9	56.4	51.9	47.8	0	1010.8	15.1	20	11.2	6.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
09-01-2025	00:00:00	23.3	22.7	22.3	61.8	58.2	53.5	0	1010.2	0.7	18	10.5	6.6	0
09-01-2025	01:00:00	22.8	22.3	21.9	62	59.5	56.2	0	1009.9	6.6	17.3	10	4.6	0
09-01-2025	02:00:00	22.7	22.4	21.9	62	60.1	57.7	0	1009.6	14.3	16	8.7	4.6	0
09-01-2025	03:00:00	22.8	22.4	21.9	66.5	62.6	60.2	0	1009.4	45	20	7	0.6	0
09-01-2025	04:00:00	22.5	21.9	21.3	68.5	65.3	62.6	0	1009	46.5	20.6	8.3	1.3	0
09-01-2025	05:00:00	21.8	21.4	21.1	70.4	68.1	65.6	0	1008.9	46.6	24	8.5	3.3	0
09-01-2025	06:00:00	21.6	21.2	20.7	68.9	67.3	65.3	0	1009.3	55.7	23.3	8	2	0
09-01-2025	07:00:00	21.1	20.7	20.4	70.5	68.2	66.4	0	1009.8	43	22.6	9.9	2	0
09-01-2025	08:00:00	21.2	20.4	19.4	71.9	68.8	65.2	1.1	1010.4	25.7	26	10	5.3	0
09-01-2025	09:00:00	20.9	19.9	19.4	73.1	70.9	69.3	33.5	1011.9	19.7	20	10.3	5.3	0
09-01-2025	10:00:00	25.4	22.9	20.7	70.9	63.4	53.3	87.7	1013.5	55.5	18.6	6.4	0.6	0
09-01-2025	11:00:00	27.1	26.6	25.2	55.2	53.2	50.5	127.4	1014.4	80.6	16.6	7.2	1.3	0
09-01-2025	12:00:00	28.2	27	26.3	56.5	53.1	49.7	190.7	1013.6	87.8	20	10.2	2.6	0
09-01-2025	13:00:00	30.4	29.3	27.9	51.3	47.9	42.7	224.8	1013	80.6	14.6	5.8	1.3	0
09-01-2025	14:00:00	32.5	31.3	30.2	45.3	39.8	33.9	224.5	1012.1	84.5	11.3	5.1	0	0
09-01-2025	15:00:00	36	33.3	31.4	39.5	30.5	22.6	193.2	1011.9	100.8	24.6	2.8	0	0
09-01-2025	16:00:00	33.7	31.2	30.4	48.6	43.7	38.7	132.1	1010.9	292.1	23.3	12.7	3.3	0
09-01-2025	17:00:00	31.2	30.2	29.4	50.9	46.7	41.5	68.8	1010.3	297.4	23.3	11.4	4	0
09-01-2025	18:00:00	29.8	28.4	26.4	61.2	54.2	45.9	13.5	1009.7	295.1	20.6	8.7	2.6	0
09-01-2025	19:00:00	28.1	27.2	26.6	66.2	59.7	49.9	0	1010	323.1	14	5.5	1.3	0
09-01-2025	20:00:00	28.1	26.3	25.1	71.5	65.2	49.1	0	1010.5	356.8	17.3	7.4	3.3	0
09-01-2025	21:00:00	25.7	25.2	24.5	70.9	67.6	63.9	0	1011.3	3.8	18	7.9	3.3	0
09-01-2025	22:00:00	25.2	24.7	24.4	70.7	67.9	64.2	0	1012.1	13.5	11.3	6.2	2.6	0
09-01-2025	23:00:00	25.4	24.8	24.3	70.4	65.7	59.7	0	1012.5	9.8	14	6.9	2.6	0
10-01-2025	00:00:00	25	24.3	24	64.1	60.4	53.4	0	1012	7.1	13.3	8.1	4.6	0
10-01-2025	01:00:00	24.7	24.2	23.5	58.4	56.1	54	0	1011.3	5.7	14.6	9.1	4.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
10-01-2025	02:00:00	26.1	23.6	23.2	60.4	56.5	53.6	0	1010.6	10	15.3	9.3	5.3	0
10-01-2025	03:00:00	24	23.6	23.3	58	55.1	52.9	0	1010.2	23.8	18	8.9	4	0
10-01-2025	04:00:00	23.8	23.4	22.9	59.1	55.8	52.5	0	1010	36.8	16.6	7.5	3.3	0
10-01-2025	05:00:00	23.2	22.6	22.1	63.3	60	56.5	0	1009.6	44.4	21.3	8	2	0
10-01-2025	06:00:00	22.5	21.9	21.4	69.3	64.3	58.9	0	1009.8	23.8	17.3	7.2	2.6	0
10-01-2025	07:00:00	22.5	22	21.5	69.1	63.4	59.7	0	1010.4	54.2	16.6	6.4	1.3	0
10-01-2025	08:00:00	22.4	22	21.6	63.3	60.6	58.2	0.5	1011.3	64.3	19.3	5.7	1.3	0
10-01-2025	09:00:00	23.7	22.9	22.1	60.4	57.9	55	28	1013	63.5	20	6.3	2.6	0
10-01-2025	10:00:00	25.8	24.6	23.4	58.7	54.8	50.9	74.1	1014.5	67.4	20.6	6.2	2	0
10-01-2025	11:00:00	27.3	26.9	25.6	55.7	52.2	49.8	124.1	1015.5	84.4	14.6	5.9	1.3	0
10-01-2025	12:00:00	28.7	27.7	26.7	54.1	50.5	45.8	166.9	1014.9	85.5	18	7.8	2	0
10-01-2025	13:00:00	30.2	29.1	28.2	51.5	48.4	42.3	198.3	1014.2	87.9	10.6	5.8	2	0
10-01-2025	14:00:00	32.8	31.5	29.6	45.7	37.6	34	206.9	1013.8	95.6	8	3.5	0	0
10-01-2025	15:00:00	32.9	32.1	31.4	36.4	31.9	29.1	176	1012.6	147.3	15.3	7.3	0	0
10-01-2025	16:00:00	33.7	33	31.6	31.4	29	27.7	129.6	1012	205.5	19.3	8.9	1.3	0
10-01-2025	17:00:00	33.1	32.4	31.4	34.6	31.1	28.7	68	1011.5	221.8	19.3	7.9	2	0
10-01-2025	18:00:00	31.8	30.4	28.7	43.9	36.4	32.4	14.6	1010.3	231.7	13.3	6	0.6	0
10-01-2025	19:00:00	29	28	27.4	46	44.2	42.2	0	1009.9	243.1	10.6	5.1	2	0
10-01-2025	20:00:00	28	27.4	26.7	53.5	49.6	43	0	1010.9	270.1	10.6	5.7	1.3	0
10-01-2025	21:00:00	27.1	26.5	25.7	62.2	55.5	52.4	0	1011.5	279.1	10	5.1	1.3	0
10-01-2025	22:00:00	26.1	25.6	25.2	65.4	64.1	62	0	1011.6	298.6	7.3	3.5	0	0
10-01-2025	23:00:00	26.2	25.5	24.6	72.8	64	56.1	0	1011.7	344.6	16.6	1.3	0	0
11-01-2025	00:00:00	25.4	24.9	24.4	69.8	67.2	63.6	0	1011.7	64.3	12	1.5	0	0
11-01-2025	01:00:00	25.2	24.7	24.2	68.7	64.5	58.7	0	1011.3	109.6	6	0.6	0	0
11-01-2025	02:00:00	25.6	24.9	24.4	63.1	57.7	54.1	0	1011.1	261.9	8.6	2.7	0	0
11-01-2025	03:00:00	25.4	24.3	23	80	67.4	55.1	0	1010.7	244.3	8	3.8	0.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
11-01-2025	04:00:00	24.2	23.7	23	79.4	72.1	69.5	0	1010.1	289.3	8	3.3	0	0
11-01-2025	05:00:00	24.2	23.6	23.1	77.9	75.4	72.4	0	1010.1	261.5	9.3	4	0.6	0
11-01-2025	06:00:00	24.7	24.2	23.3	79.6	75.5	72.5	0	1010.4	297.2	7.3	2.6	0	0
11-01-2025	07:00:00	23.5	22.5	22.1	84.4	82.4	79.1	0	1010.7	33.8	8	2.6	0	0
11-01-2025	08:00:00	22.4	22	21.5	84	82.4	79.5	0	1011.6	55.6	8.6	2.8	0	0
11-01-2025	09:00:00	23.6	22.1	21.3	83.4	81	76.1	18.5	1012.9	39	6.6	0.7	0	0
11-01-2025	10:00:00	26.7	25.3	23.4	76.3	67.9	63.6	67.7	1014.8	97.3	7.3	1.5	0	0
11-01-2025	11:00:00	28.4	27.6	26.5	65.5	58.6	53.7	129.2	1015.9	17.9	11.3	3.7	0	0
11-01-2025	12:00:00	29.8	28.6	27.8	55.5	51.4	46.3	172.2	1015.4	304.8	22	7	0	0
11-01-2025	13:00:00	28.8	28.2	27.7	57.8	53.9	47.5	198.4	1014.3	293.4	28	13.3	3.3	0
11-01-2025	14:00:00	29.9	29	28.1	50.2	40.4	34.6	204.7	1013.1	299	23.3	11.6	2.6	0
11-01-2025	15:00:00	30.8	30	29.2	36.4	34.5	30.7	178.1	1012.2	298.3	24	12.2	4.6	0
11-01-2025	16:00:00	33.1	31.2	30	36.4	34.2	32.5	127.5	1011.9	313.4	19.3	6.4	0	0
11-01-2025	17:00:00	31.4	30.7	30.4	38.4	36.2	33.8	73.4	1011.5	297.7	20	8.3	2	0
11-01-2025	18:00:00	30.6	29.6	28.3	48.1	42.3	38.1	15.5	1011	341.6	11.3	3.4	0	0
11-01-2025	19:00:00	28.6	27.5	26.8	56.6	52.2	46.4	0	1010.8	171.8	8.6	2.7	0	0
11-01-2025	20:00:00	27.1	26.5	26	56.5	54.4	50.2	0	1011.3	239.4	6	2.7	0	0
11-01-2025	21:00:00	26.9	25.8	25	69.3	59.7	50.1	0	1012	294.5	16	8.6	2	0
11-01-2025	22:00:00	25.4	24.8	24.4	74.7	72.4	68.9	0	1012.5	294.9	14.6	6.6	0	0
11-01-2025	23:00:00	24.9	24.6	24.3	71.9	70.5	68.7	0	1012.7	294.3	12	5	0	0
12-01-2025	00:00:00	24.6	24.2	23.7	82.1	78.4	71.4	0	1012.7	305.6	12.6	4.5	0.6	0
12-01-2025	01:00:00	24.5	24.1	23.8	80.3	78.7	77.7	0	1012.5	310.5	15.3	4.9	0.6	0
12-01-2025	02:00:00	25.5	24.5	23.8	78.2	68.3	57.5	0	1012.3	328.7	26	7.9	2	0
12-01-2025	03:00:00	25.4	25	24.8	61.1	56	52.9	0	1011.8	331.8	27.3	11.1	2.6	0
12-01-2025	04:00:00	25.1	24.4	23.5	70.1	63.9	57.6	0	1011.5	342.2	28.6	16.7	7.3	0
12-01-2025	05:00:00	23.9	23.3	22.7	72.1	67.8	65.1	0	1011.4	349.9	32.6	18.8	9.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Hazira Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
12-01-2025	06:00:00	23	22.2	21.6	73.8	70.7	67.5	0	1011.8	356.2	31.3	14.9	8	0
12-01-2025	07:00:00	21.9	21.5	21.1	75.8	74.3	72.5	0	1012.3	352.4	26	14.7	6.6	0
12-01-2025	08:00:00	21.5	21	20.7	77.3	76	74.3	0.7	1012.7	356.5	22.6	11.2	5.3	0
12-01-2025	09:00:00	22.6	21.6	20.9	76.5	72.8	68.5	35.1	1014.1	356.1	29.3	14.2	7.3	0
12-01-2025	10:00:00	24.8	23.4	22.4	68.9	66.8	61.4	97.3	1015.3	10.6	20.6	11.1	6	0
12-01-2025	11:00:00	27.7	26	24.4	63.5	57.5	50.8	152.4	1016.2	352.2	18	9.7	4.6	0
12-01-2025	12:00:00	29.5	28.4	27.3	51.5	46.2	40.7	195.1	1016.4	357.6	22.6	11.5	4.6	0
12-01-2025	13:00:00	30	29.4	28.9	45	42	39.9	217	1015.4	350	32	15.8	7.3	0
12-01-2025	14:00:00	30.8	30.3	29.7	47.3	43.1	37.6	205.4	1014.2	351.7	26.6	10.7	4	0
12-01-2025	15:00:00	31	30.5	29.9	47.6	45.5	41.2	181.8	1013.1	319	31.3	13.4	4.6	0
12-01-2025	16:00:00	30.8	29.9	29.1	47.1	44.3	40.9	136.5	1012.3	315.1	37.3	17.1	6	0
12-01-2025	17:00:00	29.8	29.3	28.7	46.9	42.1	38.8	78	1011.9	321.4	35.3	17.8	7.3	0
12-01-2025	18:00:00	29.2	28.7	28.3	48.2	45	42.5	18.6	1011.6	330.7	30	14.5	4.6	0
12-01-2025	19:00:00	28.5	27.8	26.5	54.5	45	39.9	0	1011.7	347.1	32	16.9	5.3	0
12-01-2025	20:00:00	26.8	26.3	25.7	55	51.2	45.3	0	1012.1	349.3	33.3	19.3	10.6	0
12-01-2025	21:00:00	26.2	25.5	24.8	56	50.7	45.9	0	1012.8	350.2	36.6	21	10	0
12-01-2025	22:00:00	25.3	24.5	24.2	54.9	51.5	48	0	1013.1	359.5	36	19.5	10.6	0
12-01-2025	23:00:00	24.5	23.7	23.2	53.2	50.9	48.4	0	1013.1	15.9	32.6	20	12.6	0



Ghogha Meteorological Data

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
13-12-2024	00:00:00	24.2	23.7	23.1	57.9	52.8	48.3	0	1011.2	352.1	38	9.2	0.7	0
13-12-2024	01:00:00	23.4	22.7	21.9	60.4	57.3	54	0	1010.6	354.3	28.6	4.8	1.7	0
13-12-2024	02:00:00	22.2	21.6	21.2	62.9	59.7	57.3	0	1010	351.4	31.3	3	1.7	0
13-12-2024	03:00:00	21.8	21.2	20.7	66.1	63	59.3	0	1009.6	356.3	29.3	7.2	1.3	0
13-12-2024	04:00:00	21.1	20.6	20.2	68.1	65.7	63.7	0	1009.4	352.6	34	2.4	0.7	0
13-12-2024	05:00:00	20.9	20.5	20.2	69.4	67.5	65.7	0	1009.2	0.8	26	4.4	1.3	0
13-12-2024	06:00:00	20.7	20.2	19.8	74.1	70	66.9	0	1009.5	3.5	25.3	1.8	1.7	0
13-12-2024	07:00:00	20.3	20.1	19.8	73.4	70.6	67.6	0	1010	11.7	25.3	9	1.5	0
13-12-2024	08:00:00	20.3	20	19.6	74.2	71.4	67.6	6.2	1011.5	9.4	26.6	20.4	1.3	0
13-12-2024	09:00:00	21.9	21.5	20.5	55.6	53.9	46.3	145.2	1015.7	0	24	3.6	1.5	0
13-12-2024	10:00:00	25.1	23.9	21.5	54.1	50	46.8	187.4	1015.5	358.8	22.4	13.8	2.6	0
13-12-2024	11:00:00	27.6	25.9	24.7	49.1	46.8	41.9	246.3	1015.4	1.9	12.8	7.2	1.8	0
13-12-2024	12:00:00	28.7	28	27.3	47.1	43.6	39.3	277.3	1014.6	2.3	9.3	4.5	2.2	0
13-12-2024	13:00:00	28.8	28	27.5	47.2	41.6	33.2	280	1013.4	2.4	16	10.8	2.2	0
13-12-2024	14:00:00	29.8	29	27.8	41.2	34.4	27.9	252.3	1012.4	2.2	14	3.6	1.8	0
13-12-2024	15:00:00	29.5	29	28.4	43.6	36.4	30.7	197.1	1011.8	2.7	14	6.6	1.7	0
13-12-2024	16:00:00	29.3	28.2	27.4	51.7	44.4	38.2	119.5	1010.9	3.2	8.6	0.6	0.2	0
13-12-2024	17:00:00	27.8	26.5	24.8	40.6	37.9	35.4	28.7	1010.3	357.4	5.3	3	2.4	0
13-12-2024	18:00:00	25.4	24.1	23.3	53.3	47	38.3	0	1010.1	0	16.2	6.8	1.8	0
13-12-2024	19:00:00	23.8	23.3	22.6	58.1	55.3	53.2	0	1010.4	0	8.5	1.2	1.5	0
13-12-2024	20:00:00	23.5	22.9	22.2	57.3	55.7	54.1	0	1010.6	357.3	8	4.6	2.0	0
13-12-2024	21:00:00	22.8	21.5	20.2	68.1	61.6	50.9	0	1010.7	357.3	7.3	2.4	1.4	0
13-12-2024	22:00:00	21	20.6	20.1	68.7	67.8	66.8	0	1010.7	357.5	6	1.5	3.3	0
13-12-2024	23:00:00	20.9	19.9	18.8	70.6	67.9	65.6	0	1010.3	357.3	8	3.6	0.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
14-12-2024	00:00:00	19.1	18	17.2	71.9	70.2	68.5	0	1009.7	0	9.6	3.6	3.1	0
14-12-2024	01:00:00	18	17.5	17.1	69.2	67.3	65	0	1009.6	357.2	6	6.6	0.2	0
14-12-2024	02:00:00	17.9	17.2	16.7	66.1	64.9	64.3	0	1009.2	358	5.3	1.8	0.8	0
14-12-2024	03:00:00	17.1	16.6	15.9	69.6	67.5	65.8	0	1008.9	357.3	2.6	9	0.7	0
14-12-2024	04:00:00	16.8	16.1	15.3	70.8	67.9	64.9	0	1008.8	0	28	20.4	0.6	0
14-12-2024	05:00:00	16.3	15.9	15.4	66.6	64.7	63.3	0	1009.1	357.4	6.6	3.6	1.1	0
14-12-2024	06:00:00	15.8	15.1	14.5	67.9	66.3	64.9	0	1009.3	357.3	22	11.5	1.1	0
14-12-2024	07:00:00	16.3	15.2	14.5	66.8	65.1	60.7	1.9	1009.9	357.3	10	6	1.7	0
14-12-2024	08:00:00	23.7	22.8	21.5	51.7	48.2	45.1	123.9	1014.9	8.4	11.3	3.75	1.3	0
14-12-2024	09:00:00	24.8	24.1	23.2	48.1	46	43	190	1014.6	5.9	14.6	11.5	0.6	0
14-12-2024	10:00:00	25.8	25	24.2	47.8	45.2	41.9	243.8	1014.4	5.3	14	6	0.9	0
14-12-2024	11:00:00	26	25.4	24.8	50.8	47.3	43.2	272.1	1013.5	5.3	24	3.75	0.6	0
14-12-2024	12:00:00	26.5	25.6	24.8	49.8	46.8	40.9	274.8	1012.6	10.6	20	7.2	0	0
14-12-2024	13:00:00	27.4	26.6	25.9	46	42.9	40.2	247.2	1012.1	8.8	23.3	2.4	0	0
14-12-2024	14:00:00	27.9	27.4	26.9	43.2	41	37.9	191.1	1011.6	6	19.3	4.4	0	0
14-12-2024	15:00:00	27.6	27.1	26.5	48.6	44.6	40.8	108.7	1011.2	9.4	20	1.2	0	0
14-12-2024	16:00:00	27.1	25.6	24.2	53.7	50.9	47	21	1010.6	5	6.6	3	1	0
14-12-2024	17:00:00	24.6	24	23.5	57.9	55.4	53	0	1010.5	8.6	9.3	6.8	0.9	0
14-12-2024	18:00:00	24	23.5	23	64.7	60.9	57.3	0	1010.8	7.9	8.6	1.2	1.5	0
14-12-2024	19:00:00	23.5	23	22.4	69.9	66.5	64.5	0	1011.3	7.1	8	4.6	2.6	0
14-12-2024	20:00:00	23.3	22.9	22.5	69.4	64.1	61.1	0	1011.7	5	12	2.4	0.9	0
14-12-2024	21:00:00	23.5	23.1	22.6	61.9	58	56	0	1011.7	8.7	23.3	1.5	2.2	0
14-12-2024	22:00:00	23.1	22.8	22.3	62.1	58.6	54.5	0	1011.3	6	12.6	3.6	1.8	0
14-12-2024	23:00:00	23.1	21.6	19.3	66.5	59.9	53.2	0	1010.8	3.7	11.3	1.2	0.2	0
15-12-2024	00:00:00	19.7	19	18.4	67.1	64.1	61.1	0	1010	357.4	13.3	6.4	1.5	0
15-12-2024	01:00:00	18.7	17.9	17.2	62.4	61.7	61.1	0	1009	357.4	13.3	1.2	0.3	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
15-12-2024	02:00:00	17.6	17.1	16.7	64.9	61.8	59.8	0	1008.6	357.4	10	6	1.3	0
15-12-2024	03:00:00	17.5	17.1	16.5	66.2	63.6	60.4	0	1008.4	357.5	13.3	8.6	0.6	0
15-12-2024	04:00:00	17.5	17.2	16.7	61.8	60.8	60.1	0	1008.9	357.5	18.6	2.4	0.9	0
15-12-2024	05:00:00	17.1	16.7	16.2	67	64.2	61.4	0	1009.4	357.5	12.6	9.2	0	0
15-12-2024	06:00:00	17.2	16.6	16.1	68.3	67.1	65.3	2.7	1010.2	357.4	14	4.8	0.6	0
15-12-2024	07:00:00	19.3	17.9	16.9	65.6	62.7	59.7	43.4	1012	357.5	17.3	3	0.7	0
15-12-2024	08:00:00	22.1	21	18.9	61.6	60.1	58.8	119.8	1014.5	358.4	16	7.2	1.1	0
15-12-2024	09:00:00	19.5	19	16.1	60.9	54	53.1	70.3	1012.7	357.5	17.3	2.4	0.7	0
15-12-2024	10:00:00	22.1	20.8	19.1	53.8	48.2	41.7	113.9	1013.4	358.4	20	4.4	0	0
15-12-2024	11:00:00	24.6	23.2	21.7	43.6	40.2	37.7	185.2	1013.9	0.1	19.3	1.2	0	0
15-12-2024	12:00:00	26.3	24.9	24	43.1	40.6	37.9	242	1013.7	5.1	16.6	1.3	0	0
15-12-2024	13:00:00	27.1	26.4	25.9	44.9	41.4	38.1	274.3	1012.9	4.8	16.6	1.2	0	0
15-12-2024	14:00:00	27.9	27.2	26.2	45.2	42.1	39.2	266.2	1012	4.1	10	1.5	0	0
15-12-2024	15:00:00	29.4	28.5	27.5	41.1	37.6	34.1	245.8	1011.5	2.2	15.3	2.6	0	0
15-12-2024	16:00:00	29.2	28.6	27.9	48.6	43.2	38.8	189.7	1010.9	2.7	14	2.9	0.6	0
15-12-2024	17:00:00	28.4	27.7	26.7	52.7	49.7	46.2	115.1	1010.2	2.9	7.3	1.8	0	0
15-12-2024	18:00:00	27.2	25.8	23.9	59.5	54.4	50.8	25	1009.6	8.1	12.5	9.2	1.5	0
15-12-2024	19:00:00	24.3	23.6	22.9	62	57.5	52.1	0	1009.2	357.3	13.3	4.8	2.6	0
15-12-2024	20:00:00	24.4	24.1	23.7	52.2	43.6	39.6	0	1009.9	357.8	18	3	2.2	0
15-12-2024	21:00:00	24.3	23.5	22.5	46.8	42.3	39.4	0	1010.4	357.9	14.6	7.2	2.2	0
15-12-2024	22:00:00	23.1	22.7	22.1	46.7	43.4	42.3	0	1010.7	357.4	14.6	2.4	1.8	0
15-12-2024	23:00:00	22.7	21.7	20.7	57.4	48.2	43	0	1010.8	357.3	9.3	4.4	0.2	0
16-12-2024	00:00:00	21.1	19.9	18.9	58.7	55.7	52.8	0	1010.5	357.3	6.6	0.6	0	0
16-12-2024	01:00:00	19.4	18.8	18.3	58.2	56	53.2	0	1010.2	357.3	8.6	3	0	0
16-12-2024	02:00:00	18.9	17.4	16.2	59.3	56.6	52	0	1009.7	357.3	3.3	6.8	0	0
16-12-2024	03:00:00	17.7	17.3	16.7	57.3	52.6	48.7	0	1009	357.3	6.6	1.2	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
16-12-2024	04:00:00	17.2	16.9	16.4	57.6	56.3	54.3	0	1008.8	357.6	6	4.6	1.5	0
16-12-2024	05:00:00	16.9	16.3	15.7	57.2	54.9	52.8	0	1008.2	357.8	5.3	2.4	1.1	0
16-12-2024	06:00:00	16.2	15.6	15.1	57.5	54.4	51.5	0	1008.3	357.5	6.6	0.9	0.6	0
16-12-2024	07:00:00	15.5	14.8	14.3	58.6	57.2	55.8	0	1008.5	357.3	4.6	1.1	0.6	0
16-12-2024	08:00:00	15.7	15	14.5	57.5	56.2	55.3	1.9	1009.1	357.8	10.6	1.6	0.6	0
16-12-2024	09:00:00	18.6	17	15.3	57	54	49.8	38.7	1010.5	357.8	14	7.5	0.7	0
16-12-2024	10:00:00	20	19	18	53.2	51.7	49.8	110.1	1011.8	357.4	18	0.7	0	0
16-12-2024	11:00:00	23.1	21.3	19.5	51.9	50.7	49	170.9	1011.9	357.2	13.3	0.4	0	0
16-12-2024	12:00:00	25.4	24	22.7	49.8	48.4	46.8	223.6	1011.3	357.6	21.5	13.6	1.5	0
16-12-2024	13:00:00	27.8	26.5	24.9	50.2	48.7	46.9	252.5	1010.8	1.6	12	2.4	1.1	0
16-12-2024	14:00:00	28.2	27.2	26.3	51.8	48.2	44.8	254.9	1010.2	6.9	15.3	9.2	2.2	0
16-12-2024	15:00:00	29.3	28.1	27.3	49	43.1	36	228.1	1009.7	8.2	15.3	4.8	2.2	0
16-12-2024	16:00:00	29.6	28.7	28	44.5	39.8	35.3	169.6	1009.2	3.2	16.6	3	1.8	0
16-12-2024	17:00:00	28.9	28.3	27.3	43.3	40.1	37.1	90.8	1008.9	3.4	7.3	7.2	0.2	0
16-12-2024	18:00:00	27.8	26.1	24.2	56	49.6	40.6	16.3	1008.3	357.3	0.6	1.2	0	0
16-12-2024	19:00:00	24.6	23.2	22.1	59.4	57.7	53.7	0	1008	0	3.6	2.2	0	0
16-12-2024	20:00:00	22.7	22.3	21.9	59	55	52	0	1008.2	0	3.2	0.6	0	0
16-12-2024	21:00:00	22.5	21.8	21.3	57.2	54.4	53	0	1008.7	357.3	6	3	0	0
16-12-2024	22:00:00	22.6	21.8	21.1	57.1	55	53.4	0	1008.9	357.3	10.2	6.8	1.5	0
16-12-2024	23:00:00	22.5	21.3	20.6	59.5	58.2	54.1	0	1008.8	357.4	6.6	1.2	2.6	0
17-12-2024	00:00:00	21.1	20.6	19.5	62.9	59.7	58.3	0	1008.7	357.5	8	4.6	2.2	0
17-12-2024	01:00:00	19.8	19.1	18.5	63.6	62.6	61.6	0	1008	0	6.3	2.4	0.9	0
17-12-2024	02:00:00	19.1	18.5	17.9	64.3	63.6	63.2	0	1007.4	0	5.8	1.5	0.6	0
17-12-2024	03:00:00	19	18.5	17.9	63.6	60.7	59.3	0	1007	357.3	7	4.6	0.7	0
17-12-2024	04:00:00	18.5	17.9	17.3	61.8	60.9	59.7	0	1006.7	357.3	9	2.4	0.9	0
17-12-2024	05:00:00	16.8	17.8	17.3	63.8	61.3	59.4	0	1006.7	357.4	6.6	1.5	0.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
17-12-2024	06:00:00	16.2	17.1	16.5	67.4	65.5	63.6	0	1006.9	357.8	8	3.6	1.1	0
17-12-2024	07:00:00	15.7	16.4	15.7	71.3	68.8	67	0	1007.3	355.4	4.6	1.2	0.0	0
17-12-2024	08:00:00	14.2	15.8	15.1	73	72	70.2	1.9	1008	0	0	2.2	0.0	0
17-12-2024	09:00:00	19.5	19	16.1	60.9	54	53.1	70.3	1012.7	357.5	17.3	0.6	0.0	0
17-12-2024	10:00:00	22.1	20.8	19.1	53.8	48.2	41.7	113.9	1013.4	358.4	20	3	0.8	0
17-12-2024	11:00:00	24.6	23.2	21.7	43.6	40.2	37.7	185.2	1013.9	0.1	19.3	6.8	1.1	0
17-12-2024	12:00:00	26.3	24.9	24	43.1	40.6	37.9	242	1013.7	5.1	16.6	4.2	0.9	0
17-12-2024	13:00:00	27.1	26.4	25.9	44.9	41.4	38.1	274.3	1012.9	4.8	21.5	16.1	3.2	0
17-12-2024	14:00:00	27.9	27.2	26.2	45.2	42.1	39.2	266.2	1012	4.1	10	8.4	1.3	0
17-12-2024	15:00:00	29.4	28.5	27.5	41.1	37.6	34.1	245.8	1011.5	2.2	15.3	5.25	1.5	0
17-12-2024	16:00:00	29.2	28.6	27.9	48.6	43.2	38.8	189.7	1010.9	2.7	14	7.2	2.2	0
17-12-2024	17:00:00	28.4	27.7	26.7	52.7	49.7	46.2	115.1	1010.2	2.9	7.3	2.4	0.0	0
17-12-2024	18:00:00	27.2	25.8	23.9	59.5	54.4	50.8	25	1009.6	8.1	3.3	4.4	0.9	0
17-12-2024	19:00:00	24.3	23.6	22.9	62	57.5	52.1	0	1009.2	357.3	13.3	1.2	0.5	0
17-12-2024	20:00:00	24.4	24.1	23.7	52.2	43.6	39.6	0	1009.9	357.8	18	6	1.1	0
17-12-2024	21:00:00	24.3	23.5	22.5	46.8	42.3	39.4	0	1010.4	357.9	14.6	13.6	2.6	0
17-12-2024	22:00:00	23.1	22.7	22.1	46.7	43.4	42.3	0	1010.7	357.4	14.6	2.4	0.9	0
17-12-2024	23:00:00	22.7	21.7	20.7	57.4	48.2	43	0	1010.8	357.3	12	9.2	2.8	0
18-12-2024	00:00:00	21.1	19.9	18.9	58.7	55.7	52.8	0	1010.5	357.3	6.6	4.8	1.9	0
18-12-2024	01:00:00	19.4	18.8	18.3	58.2	56	53.2	0	1010.2	357.3	8.6	3	1.7	0
18-12-2024	02:00:00	18.9	17.4	16.2	59.3	56.6	52	0	1009.7	357.3	9.7	7.2	3.1	0
18-12-2024	03:00:00	17.7	17.3	16.7	57.3	52.6	48.7	0	1009	357.3	6.6	2.4	1.0	0
18-12-2024	04:00:00	17.2	16.9	16.4	57.6	56.3	54.3	0	1008.8	357.6	6	4.4	1.7	0
18-12-2024	05:00:00	16.9	16.3	15.7	57.2	54.9	52.8	0	1008.2	357.8	5.3	1.2	0.0	0
18-12-2024	06:00:00	16.2	15.6	15.1	57.5	54.4	51.5	0	1008.3	357.5	6.6	4.69	2.6	0
18-12-2024	07:00:00	15.5	14.8	14.3	58.6	57.2	55.8	0	1008.5	357.3	4.6	5.3	1.5	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
18-12-2024	08:00:00	15.7	15	14.5	57.5	56.2	55.3	1.9	1009.1	357.8	10.6	5.1	2.6	0
18-12-2024	09:00:00	18.6	17	15.3	57	54	49.8	38.7	1010.5	357.8	14	4.9	1.8	0
18-12-2024	10:00:00	20	19	18	53.2	51.7	49.8	110.1	1011.8	357.4	18	4.8	2.2	0
18-12-2024	11:00:00	23.1	21.3	19.5	51.9	50.7	49	170.9	1011.9	357.2	13.3	9.2	2.2	0
18-12-2024	12:00:00	25.4	24	22.7	49.8	48.4	46.8	223.6	1011.3	357.6	18.6	11.5	1.8	0
18-12-2024	13:00:00	27.8	26.5	24.9	50.2	48.7	46.9	252.5	1010.8	1.6	12	6	1.7	0
18-12-2024	14:00:00	28.2	27.2	26.3	51.8	48.2	44.8	254.9	1010.2	6.9	15.3	3.75	1.7	0
18-12-2024	15:00:00	29.3	28.1	27.3	49	43.1	36	228.1	1009.7	8.2	15.3	9	2.4	0
18-12-2024	16:00:00	29.6	28.7	28	44.5	39.8	35.3	169.6	1009.2	3.2	16.6	3	1.8	0
18-12-2024	17:00:00	28.9	28.3	27.3	43.3	40.1	37.1	90.8	1008.9	3.4	7.3	5.5	1.5	0
18-12-2024	18:00:00	27.8	26.1	24.2	56	49.6	40.6	16.3	1008.3	357.3	28	15.6	2.0	0
18-12-2024	19:00:00	24.6	23.2	22.1	59.4	57.7	53.7	0	1008	0	9	3	1.4	0
18-12-2024	20:00:00	22.7	22.3	21.9	59	55	52	0	1008.2	0	15	6.8	3.3	0
18-12-2024	21:00:00	22.5	21.8	21.3	57.2	54.4	53	0	1008.7	357.3	6	1.2	0.0	0
18-12-2024	22:00:00	22.6	21.8	21.1	57.1	55	53.4	0	1008.9	357.3	6	4.6	3.1	0
18-12-2024	23:00:00	22.5	21.3	20.6	59.5	58.2	54.1	0	1008.8	357.4	6.6	2.4	0.2	0
19-12-2024	00:00:00	21.1	20.6	19.5	62.9	59.7	58.3	0	1008.7	357.5	8	2.3	0.8	0
19-12-2024	01:00:00	19.8	19.1	18.5	63.6	62.6	61.6	0	1008	0	0	2	0.6	0
19-12-2024	02:00:00	19.1	18.5	17.9	64.3	63.6	63.2	0	1007.4	0	0	1.9	0.7	0
19-12-2024	03:00:00	19	18.5	17.9	63.6	60.7	59.3	0	1007	357.3	3.3	1.7	0.3	0
19-12-2024	04:00:00	18.5	17.9	17.3	61.8	60.9	59.7	0	1006.7	357.3	2	0.9	0.1	0
19-12-2024	05:00:00	18.3	17.8	17.3	63.8	61.3	59.4	0	1006.7	357.4	6.6	0.7	0.0	0
19-12-2024	06:00:00	17.7	17.1	16.5	67.4	65.5	63.6	0	1006.9	357.8	8	0.6	0.0	0
19-12-2024	07:00:00	17.1	16.4	15.7	71.3	68.8	67	0	1007.3	355.4	4.6	1.1	0.2	0
19-12-2024	08:00:00	16.5	15.8	15.1	73	72	70.2	1.9	1008	0	5.8	1	0.1	0
19-12-2024	09:00:00	19.2	18.9	16.1	70.4	62.6	62	59.1	1010.8	357.3	6.6	1.8	0.4	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
19-12-2024	10:00:00	21.1	20	18.8	63.2	58.2	54.7	95	1011.1	357.8	18.6	1.6	0.0	0
19-12-2024	11:00:00	23.1	22	20.7	55.5	52.8	51.1	159.1	1011.6	357.5	12.6	6.2	2.0	0
19-12-2024	12:00:00	26.2	24.4	22.6	52	49.8	48.2	209.9	1011.3	359.2	12.6	2.4	1.1	0
19-12-2024	13:00:00	27.1	26.3	25.7	54	51	48.3	236.2	1011.1	3.1	10.6	4.4	1.5	0
19-12-2024	14:00:00	28.7	27.5	26.5	54.7	51.3	46.7	238.4	1010.4	4.2	9.3	1.2	0.7	0
19-12-2024	15:00:00	29.2	28.3	27.3	49.2	42.9	38.8	208.6	1009.7	3.5	10	6	2.0	0
19-12-2024	16:00:00	29.4	28.4	27.3	50	44.6	36	157.4	1008.8	2.4	18	13.6	2.2	0
19-12-2024	17:00:00	28.4	27.8	26.9	49	45.7	42.9	79.6	1008.3	4.5	6	2.4	1.8	0
19-12-2024	18:00:00	27.5	25.9	23.5	72.4	56.4	43.6	12	1007.8	0	6	1.1	0.0	0
19-12-2024	19:00:00	23.9	23.2	22.5	71.1	67.5	62.3	0	1007.3	0	11	6.9	2.8	0
19-12-2024	20:00:00	23.2	22.7	22.3	69.3	62.5	57.1	0	1008.1	0	9	3.8	2.4	0
19-12-2024	21:00:00	22.9	21.6	20.5	67.4	61.5	56.8	0	1008.6	0	6	4.2	2.8	0
19-12-2024	22:00:00	20.9	20.2	19.4	67.1	65.1	63.8	0	1008.8	0	12	6	2.6	0
19-12-2024	23:00:00	19.9	19.3	18.8	72.3	69.7	66.8	0	1008.6	0	15	7.2	2.6	0
20-12-2024	00:00:00	20.9	20.3	19.3	71.5	66.8	62.3	0	1008.7	358.7	6	8.2	2.0	0
20-12-2024	01:00:00	21	20.2	19.6	65.3	63.4	61.1	0	1008.4	357.7	12	4.2	1.1	0
20-12-2024	02:00:00	20.1	19.1	17.9	69.4	65.5	61.4	0	1008	357.6	9.3	1.3	0.0	0
20-12-2024	03:00:00	18.7	18.3	17.8	69.6	66.8	65.4	0	1007.6	357.3	7.3	1.2	0.0	0
20-12-2024	04:00:00	18.4	17.6	16.8	70.6	68.5	66.4	0	1007.4	357.4	6.6	1.9	0.0	0
20-12-2024	05:00:00	17.7	17.3	16.9	68.3	67.3	66.2	0	1007.3	357.5	9.3	2.1	1.7	0
20-12-2024	06:00:00	17.3	16.8	16.3	67.7	66.7	65.1	0	1007.8	357.5	8	1.8	0.9	0
20-12-2024	07:00:00	17.1	16.7	16.2	67.9	66.3	64.8	0	1008.1	357.7	13.3	6.9	2.1	0
20-12-2024	08:00:00	17.4	16.8	16.1	65.7	61.8	57.2	1.9	1009.3	357.6	20.6	3.6	1.5	0
20-12-2024	09:00:00	18.7	17.7	16.9	58	55	52	35.3	1010.5	357.8	18.6	2.25	0.9	0
20-12-2024	10:00:00	20.2	19.2	18.3	52.3	50.4	48.5	95.9	1011.7	357.8	19.3	5.4	1.3	0
20-12-2024	11:00:00	22.3	21.9	19.6	49.7	45.6	44.8	182.3	1012.6	357.6	19.3	1.8	0.4	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
20-12-2024	12:00:00	24.9	23.2	21.9	46.3	44.3	40.2	207.6	1012.1	357.9	17.3	6.6	1.3	0
20-12-2024	13:00:00	26.7	25.6	24.4	41.3	37.8	35.5	241.7	1011.4	0.6	21.3	1.8	0.7	0
20-12-2024	14:00:00	27.4	26.8	26.2	45	40.9	36.7	235.9	1010.5	10.8	13.3	9	0.6	0
20-12-2024	15:00:00	28	27.4	26.5	45.1	42.5	40	207.9	1009.7	10.8	14	20.4	1.1	0
20-12-2024	16:00:00	28	27.4	26.8	49.4	42.2	39	158.4	1009	8.8	10.6	3.6	1.5	0
20-12-2024	17:00:00	27.5	26.7	25.7	50.6	48	45.6	79.5	1008.5	2.9	12	9.2	1.3	0
20-12-2024	18:00:00	26.3	25	24	54	50.5	47.3	13.1	1008	359.2	10	4.8	1.8	0
20-12-2024	19:00:00	24.6	23.8	23	50.7	46.3	43.6	0	1008.3	358.7	16	3	0.6	0
20-12-2024	20:00:00	23.6	22.4	21.1	59.8	51.4	42.4	0	1008.7	357.9	12.6	7.2	1.3	0
20-12-2024	21:00:00	21.7	21.1	20.5	54.5	50.9	47.9	0	1008.8	357.3	6	2.4	1.8	0
20-12-2024	22:00:00	21.1	20.7	20.3	56.3	54.1	51.5	0	1009.3	357.5	17.3	4.4	2.4	0
20-12-2024	23:00:00	20.9	20.2	19.2	58.5	53.5	50.9	0	1009.2	357.6	16	1.2	0.0	0
21-12-2024	00:00:00	19.7	19.1	18.5	62.2	60.9	58.5	0	1008.9	357.6	12	3	1.1	0
21-12-2024	01:00:00	19	18.4	17.8	63.7	63.1	61.9	0	1008.3	357.4	7.3	6.8	1.8	0
21-12-2024	02:00:00	18.4	17.6	16.9	66	63.8	62.5	0	1007.7	357.2	8	1.2	0.1	0
21-12-2024	03:00:00	17.4	16.9	16.3	67.6	66.6	65.7	0	1007.3	357.6	7.3	4.6	1.1	0
21-12-2024	04:00:00	17	16.3	15.8	70.4	69	66.8	0	1007.2	357.5	8.6	2.4	1.1	0
21-12-2024	05:00:00	16.3	15.6	14.9	74.1	72.4	70.2	0	1006.7	357.9	3.3	1.5	0.9	0
21-12-2024	06:00:00	15.7	15.4	14.9	74.2	73.4	72.8	0	1006.8	357.7	8	1.1	1.1	0
21-12-2024	07:00:00	15.5	15	14.4	76.8	75.2	73.8	0	1007.4	357.8	7.3	0.9	0.0	0
21-12-2024	08:00:00	15.3	14.8	14.3	77.3	76.6	75.4	2.1	1008.1	357.5	9.3	1.6	0.5	0
21-12-2024	09:00:00	17.3	16.4	14.9	75.7	71.9	68.4	35.3	1009.8	357.5	20	2.1	1.3	0
21-12-2024	10:00:00	18.9	18	16.9	68.9	66.9	64.9	93.6	1011.6	357.5	19.3	2.2	0.7	0
21-12-2024	11:00:00	21.9	20.2	18.6	65.5	62.7	60	149.8	1012.1	357.5	13.3	4.4	0.7	0
21-12-2024	12:00:00	25.1	23.1	21.4	62.4	59.9	56.2	204.3	1011.6	358.7	11.3	0.6	0.0	0
21-12-2024	13:00:00	27.1	26	24.6	56.4	52.2	48.1	235.2	1011	3.6	8.6	3	1.1	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
21-12-2024	14:00:00	28.8	27.3	26.1	51.2	48.2	44.9	230.1	1010.4	1.5	12	6.8	1.4	0
21-12-2024	15:00:00	29.7	28.7	27.6	48.7	46.3	43.5	201.9	1009.8	1.7	4.6	1.2	0	0
21-12-2024	16:00:00	30	28.9	27.8	48.5	45.4	42.1	148.2	1009.2	359.5	6.6	4.6	0.7	0
21-12-2024	17:00:00	28.9	27.6	26.3	60.4	53.1	46.6	71.1	1008.5	1.2	2.6	2.4	1.5	0
21-12-2024	18:00:00	26.7	25.2	23.7	63.7	62	57.7	9.9	1007.8	0	3	1.1	1.7	0
21-12-2024	19:00:00	24.3	23.7	23.3	66.2	64.2	62.6	0	1008.6	357.3	4	2.8	1.7	0
21-12-2024	20:00:00	24.9	24.2	23.6	63	58.4	54.1	0	1009.5	359.1	8.6	6.3	2.4	0
21-12-2024	21:00:00	25	23.4	21.7	70.2	61.3	53	0	1009.8	0	9	5.8	2.0	0
21-12-2024	22:00:00	22.3	21.6	21	70.2	69.1	66.4	0	1009.7	0	8.6	5.4	2.2	0
21-12-2024	23:00:00	22.5	22	21.5	66.6	65.1	63.9	0	1009.7	0	8	5.2	1.8	0
22-12-2024	00:00:00	22	20.7	20.1	73	70.8	65.3	0	1009	0	12	1.1	0.0	0
22-12-2024	01:00:00	21.5	20.5	19.4	74	70.8	68.1	0	1008.6	0	8	1.2	0.0	0
22-12-2024	02:00:00	20.5	19.7	18.9	75.9	73.8	71.7	0	1008.2	0	9	1.6	0.0	0
22-12-2024	03:00:00	19.8	19.2	18.7	77.1	75.9	74.6	0	1007.7	0	4.8	1.7	0	0
22-12-2024	04:00:00	19.8	19.1	18.6	76.7	75.9	74.9	0	1007.3	0	7	1.5	0	0
22-12-2024	05:00:00	19.4	18.7	18	78.6	76.6	75.7	0	1007	0	7.2	1.9	0.6	0
22-12-2024	06:00:00	19.7	19	18	78.6	74.2	71.7	0	1007.6	0	4.9	2.1	0	0
22-12-2024	07:00:00	19.5	19	18.5	75.2	73.6	71.9	0	1008.2	0	5	2.4	0.6	0
22-12-2024	08:00:00	20.9	19.9	19.1	74.7	71.9	70.1	1.4	1009.2	0	6.1	2.3	0	0
22-12-2024	09:00:00	21.6	21	20.3	70.8	69.7	66.6	28.4	1010.6	0	2.9	1.9	0	0
22-12-2024	10:00:00	22.9	21.9	20.9	67.1	64.5	62	71.5	1012.1	357.3	6	2.6	0	0
22-12-2024	11:00:00	24.4	23.5	22.5	62.4	56.3	53.3	95	1012.6	0.3	7.3	1.7	0	0
22-12-2024	12:00:00	27.3	25.9	24.1	53.9	49.7	45.6	172.2	1012.5	360	8.6	1.3	1	0
22-12-2024	13:00:00	27.6	27	26.2	51.6	49.7	47.4	197.1	1011.8	20.7	10	1	0.9	0
22-12-2024	14:00:00	27.8	26.8	26	54.4	51	48.7	175.1	1010.8	79.9	8.6	1.7	1.3	0
22-12-2024	15:00:00	26.6	25.9	25.1	57.5	55.1	52.4	97.7	1009.5	64.4	8	2.2	0.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
22-12-2024	16:00:00	26.5	25.8	25.1	60	57.9	55.4	98.9	1009	69.6	5.3	2.4	1.1	0
22-12-2024	17:00:00	26.7	25.5	24.6	65.3	61.4	57.2	46	1008.7	24.5	5.3	2.9	1.7	0
22-12-2024	18:00:00	25	23.9	23	77.2	71.3	64.8	4.3	1008.5	0	6	3.1	0	0
22-12-2024	19:00:00	23.5	23	22.5	78.5	74.5	70.2	0	1008.8	0	6.2	3.4	0	0
22-12-2024	20:00:00	23.2	22.7	22.1	72	70.2	68.8	0	1009.4	0	4.9	3.8	0	0
22-12-2024	21:00:00	22.6	22.2	21.8	71.3	70.2	69.4	0	1009.7	0	5	2.9	0	0
22-12-2024	22:00:00	22.5	22	21.5	73.4	71.2	69.8	0	1010.3	0	5.4	2.7	0	0
22-12-2024	23:00:00	22.1	21.5	20.7	78.9	75.6	73.2	0	1010.1	0	6.1	1.9	0	0
23-12-2024	00:00:00	21.3	20.5	19.9	84.4	82.2	78.9	0	1009.2	0	4.9	1.4	0.9	0
23-12-2024	01:00:00	21.1	20.4	19.9	84.9	84	82.1	0	1009.1	0	3.5	0.9	0.0	0
23-12-2024	02:00:00	20.9	20.4	19.8	83.9	82.7	81.7	0	1008.7	0	3	1.1	0.2	0
23-12-2024	03:00:00	21.7	21	20.3	83	79.3	76.7	0	1008.8	0	4.2	1.5	0.9	0
23-12-2024	04:00:00	21.9	21.5	21.1	76.8	74.2	73.2	0	1008.7	357.8	11.3	1.4	0.6	0
23-12-2024	05:00:00	21.9	21.4	20.9	74.6	72.5	70.2	0	1008.8	357.8	12	0.7	0.1	0
23-12-2024	06:00:00	21.5	21	20.5	71.9	70	68.9	0	1009.3	357.5	8	1.6	0	0
23-12-2024	07:00:00	21.2	20.7	20.2	71.7	69.2	67.6	0	1009.8	357.4	6	1.7	0.6	0
23-12-2024	08:00:00	21	20.6	20.3	73.6	70.9	69.1	1.8	1010.5	357.3	3.3	1.4	0	0
23-12-2024	09:00:00	21.7	21	20.3	73.4	68.7	63.9	18.3	1011.3	357.3	6	2.1	1.5	0
23-12-2024	10:00:00	23.2	22.4	21.3	64.4	60.3	56.7	68.4	1012.5	357.5	13.3	2.2	1.7	0
23-12-2024	11:00:00	25.5	24.3	22.1	60	55.5	51.8	161.2	1013.1	358.6	16.6	2	0.9	0
23-12-2024	12:00:00	26.4	25.8	25	52.4	49.6	47.3	165.4	1013.2	3.3	15.3	2.4	0	0
23-12-2024	13:00:00	25.7	25	24.5	56.2	52.7	47.8	94.8	1011.9	3.7	14.6	1.5	0	0
23-12-2024	14:00:00	26.7	24.8	23.5	61.1	56.8	51.1	98.4	1010.8	6.4	9.3	3.6	1.5	0
23-12-2024	15:00:00	28.2	27.3	26.3	52.4	49.2	45.3	190.9	1010.8	0.8	8	1.2	0.3	0
23-12-2024	16:00:00	27.9	27	25.9	56.4	52.9	48.7	113	1010.3	45.2	4	2.2	0.9	0
23-12-2024	17:00:00	26.3	25.4	24.7	63.7	60.2	56	54.1	1009.5	35.5	2.6	0.6	0.1	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
23-12-2024	18:00:00	25.1	23.9	22.7	72.3	67.6	63.1	8.5	1009.5	0	5.1	1.8	0.1	0
23-12-2024	19:00:00	23.2	22.5	21.9	77.1	75	72	0	1009.8	358.8	8	1.7	0.9	0
23-12-2024	20:00:00	22.9	22.5	21.9	75.3	65.5	58.3	0	1010.6	1.8	6.6	1.5	0.4	0
23-12-2024	21:00:00	22.5	22.1	21.7	63.8	58	53.8	0	1011.5	358.2	10	1.8	0.0	0
23-12-2024	22:00:00	22.4	21.9	21.2	56	53.8	51.7	0	1011.7	358	8	1.8	0.0	0
23-12-2024	23:00:00	21.7	21.3	20.9	56	54.7	54.1	0	1011.8	357.5	14	5.7	1.8	0
24-12-2024	00:00:00	21.5	20.1	19.1	61.1	57.7	50.9	0	1011.1	357.6	18.6	4.6	0.8	0
24-12-2024	01:00:00	19.7	19	18	64	61.2	57.1	0	1010.5	357.3	9.3	2.4	0.0	0
24-12-2024	02:00:00	18.6	17.9	16.5	60.2	57	54.1	0	1010.1	357.3	16.6	1.5	0.6	0
24-12-2024	03:00:00	17.5	16.9	16.3	60.6	58.5	56.4	0	1009.6	357.6	10	3.6	0.0	0
24-12-2024	04:00:00	18.1	17.4	16.4	61.1	56.6	53.3	0	1009	357.6	29.3	1.2	0.0	0
24-12-2024	05:00:00	18	17.6	17	54.1	52.2	50.5	0	1009.1	357.7	22	2.2	1.1	0
24-12-2024	06:00:00	17.6	16.6	15.8	58.8	55.5	52.4	0	1009.7	357.4	12.6	1.5	1.0	0
24-12-2024	07:00:00	16.2	15.7	15.1	64.5	62.4	58.7	0	1010	357.3	5.3	7.5	2.8	0
24-12-2024	08:00:00	15.6	14.8	13.9	68.9	66.4	63.4	1.4	1010.7	357.3	0.6	17	2.0	0
24-12-2024	09:00:00	18.5	18.3	14.5	66.8	56.4	56.2	85.1	1014	357.3	7.3	3	0.7	0
24-12-2024	10:00:00	19.9	18.7	17.9	56.9	56	54.8	106.5	1013.6	357.5	21	11.5	1.0	0
24-12-2024	11:00:00	22.8	21.2	19.5	55.3	52.1	47.5	157.6	1014.5	358.7	18	6	1.6	0
24-12-2024	12:00:00	24.8	23.6	22.3	48.7	45.8	42.8	213.6	1014	1.2	21.3	4.5	1.8	0
24-12-2024	13:00:00	25.9	25	23.8	45.6	42.4	39.8	243.8	1013.2	4.9	28.6	10.8	1.3	0
24-12-2024	14:00:00	27.1	26.1	25.1	41.5	38.6	34.3	249.5	1012.4	2.1	28	3.6	0	0
24-12-2024	15:00:00	27.4	26.8	26.3	42.7	39.4	35.8	222.8	1011.9	7.6	22.6	6.6	1.3	0
24-12-2024	16:00:00	27.9	27.2	26.2	41.9	39.2	36	167.2	1011.6	6.9	13.3	1.8	0.0	0
24-12-2024	17:00:00	26.9	26	24.8	51.6	45.4	38.8	88.9	1010.9	5	15	9	1.3	0
24-12-2024	18:00:00	25.7	24.1	22.5	61.7	55.3	50	15.3	1010.6	0	9	6.8	0.9	0
24-12-2024	19:00:00	22.8	22.1	21.5	63.2	60.5	56.2	0	1010.8	357.3	2.6	1.2	0.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
24-12-2024	20:00:00	22.5	22.1	21.7	57.2	53	49.8	0	1011.7	357.7	6	4.6	1.8	0
24-12-2024	21:00:00	22.1	20.9	20.1	60.8	55.5	49.8	0	1012.2	357.2	10	2.4	1.7	0
24-12-2024	22:00:00	20.7	20.3	19.9	58.7	56.1	54.5	0	1012.3	357.5	11.3	1.5	0.0	0
24-12-2024	23:00:00	20.6	19.9	18.7	57.7	55.8	54.1	0	1012.4	357.7	15.3	3.6	0.9	0
25-12-2024	00:00:00	19.4	18.9	18.4	62.2	58.5	55.6	0	1012.1	357.8	18	3	1.1	0
25-12-2024	01:00:00	18.9	18.1	17.6	67.9	65.5	62.1	0	1011.7	357.6	13.3	5.5	2.2	0
25-12-2024	02:00:00	18.1	17.6	17.1	71.1	69.1	67.7	0	1011.2	357.5	16	1.5	0.0	0
25-12-2024	03:00:00	17.6	17.2	16.7	73.2	72.1	70.8	0	1010.8	357.5	12	7.5	2.0	0
25-12-2024	04:00:00	17.3	16.8	16.3	76.2	74.6	73	0	1010.4	357.6	14	17	1.7	0
25-12-2024	05:00:00	16.8	16.2	15.7	78.3	77.3	75.9	0	1010.2	357.5	14.6	3	0.7	0
25-12-2024	06:00:00	16.4	15.8	15.1	81.6	79.3	77.5	0	1010.2	357.6	14.6	11.5	0.9	0
25-12-2024	07:00:00	15.7	15.3	14.8	82.5	81.7	81.1	0	1010.5	357.5	8.6	6	1.5	0
25-12-2024	08:00:00	15.7	15.3	14.8	82.5	82	81.2	1.9	1011.2	357.7	16.6	3.7	0.1	0
25-12-2024	09:00:00	16.9	16.1	15.3	81.4	78.8	76.7	32.4	1012.3	357.9	22.6	11.5	2.0	0
25-12-2024	10:00:00	20.1	18	16.3	77	73.2	68.7	89	1013.7	357.9	20	6	2.0	0
25-12-2024	11:00:00	22.9	21	19.6	69.4	66.9	62.6	150.8	1014.7	0.7	13.3	3.75	0	0
25-12-2024	12:00:00	24.2	23	22.1	64.7	63.2	61.1	202.6	1014.4	1.7	16.6	9	0	0
25-12-2024	13:00:00	25.1	24.3	23.6	62.9	60.7	58.7	233.9	1013.7	2.8	16.6	1.2	0	0
25-12-2024	14:00:00	26.3	25.2	24.3	61.8	58.2	52	239	1012.6	4	16.6	2.2	0	0
25-12-2024	15:00:00	27.5	26.9	25.7	55.6	48.2	43	205.8	1012.3	3.1	14	0.6	0.0	0
25-12-2024	16:00:00	28.2	27.4	26.7	48.5	45.9	43.6	158.7	1011.6	2.2	10	3	1.7	0
25-12-2024	17:00:00	27.4	26.9	26.1	45.9	42.6	40.1	86.1	1011.1	5.4	9.3	6.8	0.9	0
25-12-2024	18:00:00	26.7	25.6	24.4	52.1	48	43.4	15.9	1010.9	359.6	4.8	1.2	0.7	0
25-12-2024	19:00:00	24.9	24	23.4	62.4	57.1	51.9	0	1011.2	0	9.5	4.6	0	0
25-12-2024	20:00:00	24.1	23.7	22.9	68.4	63.4	61	0	1012.2	12.6	3.9	2.4	1.3	0
25-12-2024	21:00:00	23.3	22.6	21.8	72.3	70.8	68.1	0	1013	357.3	4	1.5	0.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
25-12-2024	22:00:00	22.7	22.3	21.9	73.8	72.3	71.3	0	1013.8	357.3	5.3	3.6	1.5	0
25-12-2024	23:00:00	22.7	21.7	21.1	77.5	75.2	72.5	0	1013.8	357.8	5.3	1.2	0.0	0
26-12-2024	00:00:00	21.6	21.1	20.6	79.9	78	76.5	0	1013.2	357.3	4.6	2.9	1.0	0
26-12-2024	01:00:00	21.3	20.4	19.5	80.2	79.1	77.9	0	1012.5	0	5.8	3.1	0.8	0
26-12-2024	02:00:00	20.2	19.7	19.3	81.9	80.6	78.9	0	1012.1	357.3	5.3	3.2	0.5	0
26-12-2024	03:00:00	20.1	19.7	19.3	81.5	79.1	78.4	0	1011.6	357.3	11.3	4.6	0.0	0
26-12-2024	04:00:00	19.9	19.3	18.6	80.6	79.9	79.3	0	1011.4	357.3	12	3.5	0.0	0
26-12-2024	05:00:00	19.3	18.7	18.3	81.9	80.9	79.8	0	1011.2	357.6	7.3	4.7	2.0	0
26-12-2024	06:00:00	18.9	18.4	18	82.8	82.1	81.5	0	1011.5	357.3	6	5.1	1.7	0
26-12-2024	07:00:00	19.2	18.7	18.1	82.9	81.8	81	0	1012.3	357.3	8.6	5.3	1.3	0
26-12-2024	08:00:00	19.2	18.8	18.3	82.1	81.6	81	1.2	1012.7	357.3	10	4.9	1.3	0
26-12-2024	09:00:00	20.3	19.4	18.7	81.5	79.3	77.5	26	1014.1	356.8	8.6	5.7	1.1	0
26-12-2024	10:00:00	21.4	20.6	19.7	78	75.3	73	60.2	1015.6	357.5	13.3	6.1	1.5	0
26-12-2024	11:00:00	23.5	22.2	20.9	73.4	71	68.9	106.7	1016.1	358	12.6	6.4	0.9	0
26-12-2024	12:00:00	25.1	24.1	22.9	70.4	67.2	64.2	157.2	1015.9	359.3	16.6	5.9	0	0
26-12-2024	13:00:00	27.1	25.7	24.7	65.1	62.7	59.8	179.5	1015.3	0.2	11.3	6.8	0	0
26-12-2024	14:00:00	27.6	26.6	25.9	64.9	62.2	59.5	182.6	1014.6	0.6	13.3	1.2	0.0	0
26-12-2024	15:00:00	28.5	27.7	26.9	63.1	60	56.7	156.6	1013.7	1.2	10	4.6	1.7	0
26-12-2024	16:00:00	27.4	26.8	26.3	66.7	64.9	62.7	98.1	1013	1.4	9.3	2.4	0.9	0
26-12-2024	17:00:00	27.2	26.5	25.5	65.3	63.5	62.2	52	1012.4	2.6	8	1.5	0.6	0
26-12-2024	18:00:00	26	25.3	24.5	65.7	64.6	63.3	6.6	1012.1	0	3.8	0.9	0	0
26-12-2024	19:00:00	25	24.2	23.6	69.7	66.9	64.1	0	1012.4	0	4.9	2.1	0.6	0
26-12-2024	20:00:00	24.1	23.6	23	72.9	71.3	68.9	0	1012.7	0	5.1	2.4	1.5	0
26-12-2024	21:00:00	23.9	23.5	22.7	75.7	73.3	71.8	0	1013.7	0	7.2	3.6	1.3	0
26-12-2024	22:00:00	23.3	22.9	22.4	79.1	77.4	75.4	0	1013.9	357.3	6.6	4.5	1.5	0
26-12-2024	23:00:00	23.4	22.9	22.5	75.7	73.7	72.5	0	1014	357.4	8	1.2	0.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
27-12-2024	00:00:00	23.3	22.9	22.5	73.3	72.2	71.5	0	1013.8	357.7	10	1.6	0.0	0
27-12-2024	01:00:00	23	22.2	21.3	76.4	74.4	72.1	0	1013.5	358.4	7.3	2.4	1.8	0
27-12-2024	02:00:00	21.9	21.2	20.5	77.8	76.8	75.7	0	1012.6	357.3	4.5	2.5	1.8	0
27-12-2024	03:00:00	20.9	20.3	19.7	78.6	78.1	77.6	0	1012.1	357.3	2.9	2.1	1.0	0
27-12-2024	04:00:00	20.4	19.9	19.5	78.5	77.5	75.1	0	1011.5	357.4	8	2.7	0.9	0
27-12-2024	05:00:00	20.2	19.7	19.1	75.6	75	74.6	0	1011.4	357.9	5.3	6.3	1.8	0
27-12-2024	06:00:00	19.7	19.1	18.7	77	76.1	74.9	0	1011.7	357.3	4.6	1.5	0.0	0
27-12-2024	07:00:00	19.2	18.7	18.1	78.4	77.5	76.7	0	1012.1	0	6.1	3.6	1.3	0
27-12-2024	08:00:00	18.9	18.5	18	78.4	77.5	76.6	1.3	1013	357	9.3	1.2	0.9	0
27-12-2024	09:00:00	20.7	19.5	18.3	76.8	73.3	68.2	32.8	1014.2	357.8	10.6	2.2	1.1	0
27-12-2024	10:00:00	22.2	21	20.2	68.9	66	61.6	62.2	1015.8	357.6	14	0.6	1.3	0
27-12-2024	11:00:00	22.9	22	21.1	61.7	59.5	57.5	98.2	1016.6	357.8	18	3	1.5	0
27-12-2024	12:00:00	25.4	23.9	20.9	61.1	57.3	53.7	153.8	1016.3	357.8	21	17	2.2	0
27-12-2024	13:00:00	27.3	25.9	24.6	55.7	51.9	48.7	208.1	1015.6	357.8	18.6	3	2.4	0
27-12-2024	14:00:00	28.4	27.5	26.3	52.4	49	47	208.4	1014.9	358.1	17.3	11.5	0.9	0
27-12-2024	15:00:00	29	28	27.3	54.9	52.1	48.8	188.9	1014	0.6	14.6	6	1.3	0
27-12-2024	16:00:00	28.5	27.9	26.5	59	55.1	52.8	131.9	1013.3	1.8	12	3.75	0.6	0
27-12-2024	17:00:00	27.4	26.4	25.5	66.8	61.9	58.3	60	1012.4	3.5	12	9	1.1	0
27-12-2024	18:00:00	25.7	24.9	24.3	69.4	66.2	60	7.6	1012.3	1.2	18.6	3	1.7	0
27-12-2024	19:00:00	25	24.4	23.8	61.1	59.7	58.5	0	1012.9	0.1	14.6	6.6	1.3	0
27-12-2024	20:00:00	24.4	23.8	23	60.9	59.1	57.5	0	1013.8	358.3	15.3	1.5	0.7	0
27-12-2024	21:00:00	23.7	23.2	22.7	65.4	61.8	60.2	0	1014.3	357.4	14.6	7.5	1.1	0
27-12-2024	22:00:00	23.5	23	22.5	60.5	58.7	57.5	0	1015	357.9	15.3	17	1.5	0
27-12-2024	23:00:00	22.8	22.2	21.5	61.5	60.3	58.6	0	1014.9	357.8	21.3	3	1.5	0
28-12-2024	00:00:00	22.1	21.5	21.1	64.1	63.1	61.1	0	1014.6	357.8	20	4.6	1.5	0
28-12-2024	01:00:00	21.5	21	20.5	66.4	65.4	64	0	1014.1	357.5	14	2.4	1.1	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
28-12-2024	02:00:00	20.9	20.4	19.8	67.3	66.7	66	0	1013.7	357.4	10.6	1.5	0.0	0
28-12-2024	03:00:00	20.4	19.9	19.4	67.6	66.9	66.2	0	1012.9	357.4	14	4.6	1.1	0
28-12-2024	04:00:00	19.9	19.4	18.9	67.7	66.8	65.8	0	1012.3	357.5	20	2.4	1.3	0
28-12-2024	05:00:00	19.3	18.8	18.2	66.8	66	65.1	0	1012.2	357.5	17.3	1.5	0.0	0
28-12-2024	06:00:00	18.7	18.2	17.6	68.1	67.1	66.2	0	1012.4	357.4	13.3	3.6	1.3	0
28-12-2024	07:00:00	18.1	17.6	17.2	69.4	68.2	67	0	1012.7	357.5	12.6	1.2	0.6	0
28-12-2024	08:00:00	17.7	17.3	17	68.1	67.1	66.2	1.2	1013.7	357.5	16	2.2	2.0	0
28-12-2024	09:00:00	18.5	17.8	17.1	66.6	64	61.7	29.9	1014.9	357.8	24	0.6	1.7	0
28-12-2024	10:00:00	19.9	19	17.9	62.8	61	59.1	83.1	1016.1	357.9	20	3	1.3	0
28-12-2024	11:00:00	22.1	20.6	19.4	60.4	58.5	56.4	142.1	1016.9	357.8	24	6.8	2	0
28-12-2024	12:00:00	24.8	23.2	21.7	58.5	55.7	54.2	189.4	1017	358.7	23.3	3.6	2	0
28-12-2024	13:00:00	25.7	24.8	24	58.4	57	54.6	213.2	1016.1	1.9	23.3	13.8	1.5	0
28-12-2024	14:00:00	26.5	25.6	25.1	62.8	59.5	56	219.7	1015.1	2.2	18.6	7.2	0.6	0
28-12-2024	15:00:00	26.9	26.3	25.7	61.3	59.2	56.5	194.9	1014.5	1.4	16.6	4.5	0.7	0
28-12-2024	16:00:00	26.7	26.1	25.6	65	62	58.6	142.2	1013.8	3.2	14.6	10.8	1.8	0
28-12-2024	17:00:00	26.5	25.7	25.1	67	64.7	62.8	73.2	1013	2.3	4.6	3.6	0.3	0
28-12-2024	18:00:00	25.6	24.5	23.5	70	67.2	65.5	12.4	1012.8	0	8.2	4.4	0.1	0
28-12-2024	19:00:00	24	23.1	22.5	74.9	72.6	70	0	1012.9	0	7.4	1.2	0.9	0
28-12-2024	20:00:00	23.5	23.1	22.6	71.8	69.6	67	0	1013.7	357.9	11.3	6	0.6	0
28-12-2024	21:00:00	23.5	22.9	22.2	67.1	65.2	64	0	1014.2	358.2	18	13.6	0.9	0
28-12-2024	22:00:00	22.7	22.2	21.6	65.3	64.8	64.5	0	1014.7	357.9	14	2.4	0.0	0
28-12-2024	23:00:00	22.1	21.6	21.1	66	64.8	63.8	0	1014.8	357.6	15.3	9.2	0	0
29-12-2024	00:00:00	21.6	20.8	20.1	67.6	66.3	64.5	0	1014.6	357.9	18.6	4.8	1.1	0
29-12-2024	01:00:00	20.7	19.6	18.3	70.6	68.9	67.3	0	1014	357.4	12.6	3	1.3	0
29-12-2024	02:00:00	19.7	19	18.5	72.1	70.4	67.9	0	1013.6	357.3	12.6	7.2	1.3	0
29-12-2024	03:00:00	19.3	18.7	17.7	68.9	66.3	64	0	1013	357.6	17.3	2.4	1.1	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
29-12-2024	04:00:00	18.3	17.5	17.1	68.3	65	63	0	1012.5	357.8	16	4.4	0.7	0
29-12-2024	05:00:00	17.6	17	16.5	65.8	65	63.4	0	1012.3	357.5	16.6	1.2	0.7	0
29-12-2024	06:00:00	17	16.6	16.1	73.2	68.4	65.5	0	1012.7	357.4	18.6	7.5	0.9	0
29-12-2024	07:00:00	18.6	16.7	16.1	86.2	76.5	73	0	1013.2	357.8	25	17	2.0	0
29-12-2024	08:00:00	20.5	19.7	17.8	89	86.8	85.9	8.4	1014.6	4.7	28	3	0.0	0
29-12-2024	09:00:00	21.7	20.6	19.3	86.7	84.4	81.4	34.8	1015.8	6.9	14.6	11.5	2.2	0
29-12-2024	10:00:00	23.4	22.2	21.1	81.5	77.2	73	89.6	1017	4.6	18	6	0	0
29-12-2024	11:00:00	25.2	23.8	22.8	73.2	70.5	66	145.9	1017	2.2	19.3	3.75	0.6	0
29-12-2024	12:00:00	25.6	24.9	24.4	68	66.7	65.5	194.8	1017	1.9	16.6	11.5	0.9	0
29-12-2024	13:00:00	26.3	25.7	24.7	67.7	64.4	62.9	229.7	1015.9	1.1	18.6	6	0.3	0
29-12-2024	14:00:00	26.4	25.9	25.1	67	64.5	62.5	235.6	1015.3	2.3	28.6	3.75	0	0
29-12-2024	15:00:00	26.9	26.3	25.6	65.3	63.7	62.3	212.3	1014.9	2.6	26	9	1.1	0
29-12-2024	16:00:00	27.1	26.4	25.7	64.9	62.9	61.1	159.2	1014.5	6.1	22	3	0	0
29-12-2024	17:00:00	26.7	26.1	25.5	66.4	64.6	63.4	80.7	1013.7	7.6	20.6	5.5	0.7	0
29-12-2024	18:00:00	25.9	24.9	24.1	71.3	69.2	66.1	14.6	1013.4	3.9	16	0.6	0.0	0
29-12-2024	19:00:00	24.8	24.1	23.5	76.2	72.6	69.3	0	1014.1	4.8	18.6	3	0	0
29-12-2024	20:00:00	24	23.4	22.9	78.7	77.9	75.9	0	1014.7	6.6	16	6.8	0	0
29-12-2024	21:00:00	23.6	23.1	22.5	78.9	77.7	75.5	0	1015.4	6.4	18	1.2	0	0
29-12-2024	22:00:00	23.3	22.5	21.6	77.4	75.7	74.9	0	1015.7	359.3	15.3	4.6	1.1	0
29-12-2024	23:00:00	22.4	21.9	21.1	78.7	76.8	75.1	0	1015.6	5.7	14	2.4	1.3	0
30-12-2024	00:00:00	21.7	20.9	20.3	82	80.4	78.3	0	1015	358.8	6	3	1.3	0
30-12-2024	01:00:00	21.7	21.3	20.4	80.7	76.4	74.9	0	1014.6	8.6	16	7.2	1.1	0
30-12-2024	02:00:00	21.7	21.2	20.7	78.7	77.6	76.3	0	1014.1	8.4	11.3	2.4	0.9	0
30-12-2024	03:00:00	21.7	21.1	20.4	80.4	79	78.1	0.2	1013.4	5.2	12.6	4.4	0.7	0
30-12-2024	04:00:00	21.3	20.9	20.3	81.5	80.6	79.8	0.8	1012.6	4.7	14	1.2	0	0
30-12-2024	05:00:00	21.3	20.6	20	83.3	82.2	80.7	1.9	1012.7	2.7	10.6	6	0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
30-12-2024	06:00:00	21	20.2	19.5	84.9	84	83.1	2.8	1012.4	6.7	11.3	6.8	0	0
30-12-2024	07:00:00	20.6	19.9	19.2	86	85.3	84.6	3.2	1013.3	5.7	12.6	1.2	0	0
30-12-2024	08:00:00	20.4	19.7	19	86.2	85.6	84.3	6.3	1014.2	5.5	17.3	4.6	0.7	0
30-12-2024	09:00:00	21.7	20.6	19.4	84.7	81.3	77.4	33.3	1015.6	4.6	18.6	2.4	0	0
30-12-2024	10:00:00	23.8	23.3	21.1	77.8	69.4	68.2	133.8	1017.3	0.9	16	1.5	0.7	0
30-12-2024	11:00:00	24.6	23.9	23.3	68.9	67	65.1	164.1	1017.3	0.8	14	3.6	0	0
30-12-2024	12:00:00	25.3	24.6	23.9	66.3	64.6	63.1	214	1016.9	0.8	14.6	3	0	0
30-12-2024	13:00:00	26.1	25.3	24.5	65.9	63.6	61.3	246.8	1016.1	3.3	19.3	5.5	0	0
30-12-2024	14:00:00	26.5	26	25.2	65.2	63.5	61.8	252.1	1015.3	5.5	21.3	1.5	0.6	0
30-12-2024	15:00:00	27.7	26.9	25.9	65.3	62.4	59.8	229.8	1014.4	2	16.6	7.5	0.7	0
30-12-2024	16:00:00	27.9	27.3	26.7	64.5	62.3	60.4	179.4	1013.9	2.5	15.3	17	0.7	0
30-12-2024	17:00:00	27.8	27.1	26.5	63.4	61.3	59.3	105.3	1013.6	2.3	14.6	3	0	0
30-12-2024	18:00:00	27.1	25.8	24.6	70.8	66.9	62.1	22.7	1012.9	9.2	14	9.2	0	0
30-12-2024	19:00:00	25.1	24.5	23.8	73.2	70.3	67.9	0	1013.4	0	9.9	4.8	0	0
30-12-2024	20:00:00	24.6	24.1	23.6	74.6	73.3	71.9	0	1014.1	7.2	4.6	3	1.3	0
30-12-2024	21:00:00	24.3	23.9	23.4	73.2	72	70.8	0	1014.5	359.1	12	9.2	0.7	0
30-12-2024	22:00:00	24	23.4	22.6	71.8	68.7	67.1	0	1015.3	358.5	11.3	4.8	1.1	0
30-12-2024	23:00:00	23.2	22.7	22.1	70.6	69.6	69	0	1015.3	359.1	13.3	3	1.8	0
31-12-2024	00:00:00	22.6	21.9	21.3	75.5	72.6	70.4	0	1014.7	358.9	9.3	3.6	1.1	0
31-12-2024	01:00:00	21.9	21	20.1	80.8	77.8	75.3	0	1014.1	357.6	8.6	1.2	0.5	0
31-12-2024	02:00:00	20.7	20.2	19.7	82.1	81.3	80.2	0	1013.4	357.3	6.6	2.2	1.3	0
31-12-2024	03:00:00	20.7	19.8	18.1	81.6	79.8	78.6	0	1012.8	357.3	8	0.6	0.0	0
31-12-2024	04:00:00	18.6	17.8	17.3	82.5	81.7	78.5	0	1012.1	357.3	0.6	3	1.5	0
31-12-2024	05:00:00	18.2	17.6	17	78.7	75.8	73.8	0	1012	357.2	6.6	6.8	0.6	0
31-12-2024	06:00:00	18.1	17.5	17	76.8	74.9	72.5	0	1012.2	357.5	17.3	1.2	0.7	0
31-12-2024	07:00:00	18.3	17.6	16.7	74.7	73.3	72.1	0	1012.6	357.5	14	4.6	1.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
31-12-2024	08:00:00	17.2	16.4	15.9	74.9	74	73.4	0.7	1013.7	357.3	8	2.4	0.3	0
31-12-2024	09:00:00	19.5	19.5	16.1	74.2	66.4	66.4	59.6	1016.3	357.3	16	1.5	0.1	0
31-12-2024	10:00:00	22.8	20.5	18.1	67.7	65.7	63.2	91.9	1017.2	358.5	10.6	3.6	0.9	0
31-12-2024	11:00:00	24.3	23.3	22.1	67.9	66.2	65.1	155	1017.7	359.1	14	1.2	0.6	0
31-12-2024	12:00:00	26.7	25.7	23.9	67.9	63.8	61.6	209.8	1017.8	2.9	14.6	5.5	0.9	0
31-12-2024	13:00:00	27.8	27	26.5	64.7	62.2	59.7	244.2	1017.1	1.5	18.6	1.5	0.0	0
31-12-2024	14:00:00	28.4	27.8	26.9	63.7	60.3	57.4	253.8	1016.2	6	15.3	7.5	0	0
31-12-2024	15:00:00	29.6	28.6	27.8	61.5	59.1	56.9	230.6	1015.5	5	21.5	17	1.1	0
31-12-2024	16:00:00	29.4	28.4	27.5	61.5	58.4	55.1	178	1014.9	4.6	15.3	3	1.3	0
31-12-2024	17:00:00	28.6	27.6	26.9	62.8	61	57.4	99.1	1014.3	3.4	10	11.5	1.3	0
31-12-2024	18:00:00	27.7	26.4	24.9	68.5	64.1	60.3	23.6	1013.8	0	7	4.8	1.1	0
31-12-2024	19:00:00	25.3	24.2	23.5	76.3	73.6	68.2	0	1013.5	0	5	3	0.7	0
31-12-2024	20:00:00	24.3	23.9	23.4	75.5	71.3	67.3	0	1014.1	0	9.3	7.2	1.3	0
31-12-2024	21:00:00	24.2	23.7	23.3	69.6	68.3	66.2	0	1014.3	6.9	4.6	2.4	0.9	0
31-12-2024	22:00:00	23.9	23.1	21.9	76.8	70.7	68.3	0	1014.4	13.5	11.3	4.4	2.0	0
31-12-2024	23:00:00	22.6	22	21.3	76.7	72.4	70.4	0	1014.8	357.3	6	1.2	0.0	0
01-01-2025	00:00:00	21.9	21.5	21.1	73.6	71.6	69.8	0	1014.1	357.3	8.6	6	2.2	0
01-01-2025	01:00:00	21.9	21.3	20.9	73.4	71.8	70.2	0	1013.8	357.4	13.3	13.6	1.8	0
01-01-2025	02:00:00	21.5	20.1	19.1	77.9	76.1	73.2	0	1013.1	357.3	9.3	2.4	1.7	0
01-01-2025	03:00:00	19.7	18.4	17.6	80.8	79.4	77.6	0	1011.9	357.3	10.4	9.2	2.6	0
01-01-2025	04:00:00	18.4	17.6	16.7	81.3	80.5	79.6	0	1011.4	357.3	10.7	4.8	2.6	0
01-01-2025	05:00:00	17.3	16.7	15.9	82.7	81.4	80.6	0	1011.3	357.3	4.9	3	2.2	0
01-01-2025	06:00:00	16.6	16.1	15.5	85.8	84.2	82.5	0	1011	359.3	5.6	3.6	2.2	0
01-01-2025	07:00:00	16.7	16.2	15.5	87.3	86.4	85.7	0	1011.2	357.3	4.7	3.4	1.7	0
01-01-2025	08:00:00	16.7	15.9	15.3	88.5	88	87.1	2.5	1012.2	358	8.6	4.1	2.0	0
01-01-2025	09:00:00	19.3	17.6	16.1	87.6	82.7	77.4	34.9	1013.6	357.3	12.6	2.8	0.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
01-01-2025	10:00:00	23.1	22.7	18.9	77.4	70.9	70	145.8	1016.3	357.8	13.3	0.8	0.1	0
01-01-2025	11:00:00	25.7	24.3	22.7	72.8	69.6	65.6	177.6	1016.1	1	14.6	1.5	0.0	0
01-01-2025	12:00:00	26.1	25.2	24.4	70.2	67.7	65.7	225.9	1016.1	1	19.3	1.5	0.0	0
01-01-2025	13:00:00	26.3	25.8	25.2	68.5	66.5	64.7	263	1015.3	3.7	17.3	7.5	0.9	0
01-01-2025	14:00:00	28.5	27.1	25.7	67.9	63.2	58.7	273.8	1014.5	3.1	23.6	17	2.0	0
01-01-2025	15:00:00	28.6	28.1	27.3	61.1	58.3	55.2	255.4	1013.7	3.1	16	3	2.0	0
01-01-2025	16:00:00	29.4	28.8	28	56.4	54.6	52.5	206.7	1012.8	6.1	14.8	11.5	1.8	0
01-01-2025	17:00:00	29.2	28.7	28.1	57.2	56	54.4	131.4	1012.1	6.4	9.3	6	2.0	0
01-01-2025	18:00:00	28.7	27.3	25.3	62.2	59.9	56.3	43.7	1011.8	357.3	5.3	3	1.3	0
01-01-2025	19:00:00	25.7	24.5	23.9	67.2	65.4	62.1	0	1011.4	22.4	9.6	7.2	1.3	0
01-01-2025	20:00:00	24.7	24.3	23.8	66.4	63.8	59.4	0	1012.3	0.6	8	2.4	1.8	0
01-01-2025	21:00:00	24.4	23.9	22.8	64.1	59.5	56.7	0	1012.7	0	5.6	4.4	1.8	0
01-01-2025	22:00:00	24.1	23.6	23	71.9	63.2	56	0	1013.4	1.5	7.3	1.2	0.0	0
01-01-2025	23:00:00	24	23.2	22.5	77.9	76.2	71.7	0	1013.6	36.7	7.5	6	2.2	0
02-01-2025	00:00:00	23.3	22.6	21.7	81.3	79.7	77.6	0	1013.5	0	9.7	6.8	0.9	0
02-01-2025	01:00:00	22.6	22	21.3	81.7	81.1	80.6	0	1012.9	357.3	2.9	1.2	0.1	0
02-01-2025	02:00:00	22.3	21.5	20.6	84.3	82.1	80.8	0.1	1012.5	23.7	5.8	4.6	1.8	0
02-01-2025	03:00:00	21.3	20.6	19.8	86.7	85.6	83.8	0.5	1011.8	0	4.4	2.4	0.6	0
02-01-2025	04:00:00	20.6	19.8	18.7	88.9	87.7	86.4	0.7	1011.2	0	3.2	1.5	0.0	0
02-01-2025	05:00:00	19.6	19	18.3	91.2	90.2	87.7	0.8	1010.8	0	4.9	3.6	1.1	0
02-01-2025	06:00:00	19.2	18.4	17.7	91	90.2	88.7	0.3	1010.8	0	2.8	1.2	0.3	0
02-01-2025	07:00:00	21.7	19	17.7	94.2	90.7	88.4	2.5	1011.6	14.8	3.3	2.2	0.1	0
02-01-2025	08:00:00	21.7	19.6	17.3	93.1	87.9	82.5	7.3	1012.5	357.5	1.3	0.6	0.0	0
02-01-2025	09:00:00	20.8	20.3	17.7	88.8	77	74.8	53.4	1015	357.3	8.6	3	1.1	0
02-01-2025	10:00:00	24.5	22.4	20.2	75.1	71.2	67.2	92.2	1015.6	0.5	9.3	6.8	1.5	0
02-01-2025	11:00:00	26.1	25.2	24.2	69	66	62.7	158.8	1016.3	4.6	14.6	1.2	0.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
02-01-2025	12:00:00	26.5	26	25.5	63.5	61.7	60.2	214	1016.2	1.4	18	1.8	0.0	0
02-01-2025	13:00:00	27.1	26.6	25.9	63.9	61	59.3	248.2	1015.4	0.4	16.6	4.2	0	0
02-01-2025	14:00:00	28.7	27.9	26.3	61.5	55.6	50.4	256	1014.3	360	12	4.9	1.5	0
02-01-2025	15:00:00	30.6	29.5	27.9	53.8	50	47.2	236.6	1013.7	0.7	10	4.2	1.5	0
02-01-2025	16:00:00	31	30.3	29.5	50	48	46.2	189.5	1013.2	359.8	12	3.5	2.0	0
02-01-2025	17:00:00	30.6	29.8	28.8	55.5	51.2	48.2	115.8	1012.6	2.1	10.6	3.2	1.8	0
02-01-2025	18:00:00	29.2	27.7	26	64.9	59.7	55	30.4	1012.2	6.3	8.6	3.6	1.5	0
02-01-2025	19:00:00	26.4	25.4	24.8	68.9	67.9	64.7	0	1011.9	0	4.2	1.2	1.7	0
02-01-2025	20:00:00	25.4	24.9	24.4	69.6	69	68.5	0	1012.5	0	4.6	2.2	1.8	0
02-01-2025	21:00:00	25	24.3	23.5	77	72.2	69.4	0	1012.8	0	5.2	0.6	0.0	0
02-01-2025	22:00:00	24.2	23.5	22.8	81.7	79.2	76.8	0	1013.3	358.5	5.8	3	1.1	0
02-01-2025	23:00:00	24	23	22.2	83.9	82.2	81	0.1	1013.4	0	8.5	6.8	1.8	0
03-01-2025	00:00:00	23.1	22.4	21.6	86.5	84.6	81.7	0.7	1013	0	3.9	2.1	1.7	0
03-01-2025	01:00:00	22.7	22	20.9	87.8	86.9	85.7	2	1012.3	0	4	2.5	1.7	0
03-01-2025	02:00:00	22.1	20.5	19.3	91.6	88.4	84.4	1.2	1012	357.4	4.9	2.7	1.8	0
03-01-2025	03:00:00	20.8	19.8	18.9	92.5	90.4	88.9	1.3	1011.5	357.3	2.6	1.9	0.8	0
03-01-2025	04:00:00	20.7	19.9	19	92.4	90.9	90.2	2.6	1011.5	357.3	6	1.8	0.6	0
03-01-2025	05:00:00	20	18.9	18	94	93.1	91.5	3	1010.8	357.3	3.2	2	0.9	0
03-01-2025	06:00:00	19.1	18.2	17.3	94.6	93.8	93.2	2.7	1010.8	357.3	4	2.2	1.1	0
03-01-2025	07:00:00	18.5	17.8	17	97.3	95.6	94.4	3.2	1011.3	0	2	0.6	0.0	0
03-01-2025	08:00:00	18.5	17.6	16.7	97.7	96.3	95.6	6.5	1012	357.3	5.3	3	1.7	0
03-01-2025	09:00:00	23.1	22.6	17.1	97.7	79.4	78.2	70.8	1014.8	0	9.1	6.8	2.0	0
03-01-2025	10:00:00	26.9	25.3	22.6	78.3	62	51.1	102.6	1015.6	51.8	12	1.2	0.0	0
03-01-2025	11:00:00	28.3	27.3	26.4	51.7	47	42.1	176.5	1016.3	58.4	10.6	4.6	1.8	0
03-01-2025	12:00:00	29.5	28.6	27.9	44.6	41.9	39.7	234.5	1016.4	64.7	10.6	2.4	1.0	0
03-01-2025	13:00:00	30	29.3	28.6	43.5	39.9	35.7	268.3	1015.8	15.5	8.6	1.5	0.0	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
03-01-2025	14:00:00	30.1	29.4	28.8	49.1	43.6	39.4	273.3	1014.8	1.7	14.6	3.6	0.4	0
03-01-2025	15:00:00	31.1	30.2	28.9	39.6	34.7	30.5	248.8	1014	1.1	12	1.2	0.7	0
03-01-2025	16:00:00	31.2	30.4	29.5	43.5	38.3	33.2	199.2	1013.2	0.5	10.6	2.2	0.5	0
03-01-2025	17:00:00	30.5	29.9	29.2	47.5	44.1	39.6	125.5	1012.3	2.1	10	0.6	0.0	0
03-01-2025	18:00:00	29.6	28.1	26.3	59	50.5	46.2	34.6	1011.6	3.7	6	3	1.1	0
03-01-2025	19:00:00	26.7	25.4	24.5	69.2	64.4	58.7	0	1011	3.8	7.9	6.8	2.9	0
03-01-2025	20:00:00	24.9	24.4	24	71.5	66.8	58.4	0	1011.4	0	3	1.2	0.1	0
03-01-2025	21:00:00	24.8	23.7	23	64.3	61.6	58.4	0	1011.7	0	6.8	4.6	2.8	0
03-01-2025	22:00:00	23.6	22.8	22.1	73.2	68.7	63.5	0	1011.8	0	4	2.4	1.0	0
03-01-2025	23:00:00	23.5	23	22.5	73.6	72.7	72.1	0	1012	0	3.8	1.5	0.3	0
04-01-2025	00:00:00	23.3	21.9	20.7	79.3	76.2	72.3	0	1011.3	0	4.5	0.9	0.0	0
04-01-2025	01:00:00	21.3	20	19.1	82.6	80	76.7	0	1010.4	0	4	0.8	0.0	0
04-01-2025	02:00:00	20.8	20.2	19.3	82.7	79.2	76.1	0	1010.3	357.3	2.9	1.1	0.0	0
04-01-2025	03:00:00	20.5	19.7	19.1	77.6	76.5	75.3	0	1009.9	353.6	3.3	0.4	0.0	0
04-01-2025	04:00:00	19.8	19	18	79.9	77.8	76.5	0	1009.4	0	4.5	1.8	0.3	0
04-01-2025	05:00:00	18.8	18.1	17.3	80.6	79.2	77.8	0	1009.2	0	5.6	1.6	0.1	0
04-01-2025	06:00:00	18	17.5	17	80.4	79.1	77.8	0	1009.3	358	4.6	0.6	0.1	0
04-01-2025	07:00:00	17.6	16.9	15.9	80.8	79.3	77.9	0	1009.7	357.3	6.1	3	1.1	0
04-01-2025	08:00:00	17.4	16.2	15.6	82.1	80.7	77	1.2	1010.4	357.3	7.9	6.8	3.9	0
04-01-2025	09:00:00	20.9	20.6	16.9	77	65.8	65.3	60.3	1013.5	357.3	12	1.2	0.9	0
04-01-2025	10:00:00	23.9	22.2	20.5	65.5	60.4	55.3	99.9	1014.2	357.8	16.6	4.6	2.2	0
04-01-2025	11:00:00	26.3	24.6	23.1	57.7	55.5	52.4	169.4	1014.6	357.5	14.6	2.4	1.0	0
04-01-2025	12:00:00	27.6	26.8	25.8	57.7	53.4	50.2	225.1	1014.8	3.7	18	3	1.1	0
04-01-2025	13:00:00	28.9	27.8	26.9	54.9	51.8	48	264.2	1013.9	1.6	12.6	7.2	2.2	0
04-01-2025	14:00:00	29.4	28.6	27.8	50.5	47.1	42.7	274.9	1012.7	16.4	10	2.4	1.7	0
04-01-2025	15:00:00	31.5	30.1	28.8	45	38.8	31.7	256	1012.4	36.6	6.6	4.4	1.7	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
04-01-2025	16:00:00	32	31.3	30.4	39.5	34.9	30	208.3	1011.8	5.7	4	1.2	0.2	0
04-01-2025	17:00:00	32.3	31.4	30.4	37	32.7	27.9	131.3	1011.1	0	8.5	6	1.8	0
04-01-2025	18:00:00	31	28.9	26.4	46.9	39.2	34.1	35.9	1010.6	0	3.2	1.5	0.4	0
04-01-2025	19:00:00	26.7	25.4	24.7	58.9	50.8	42.7	0	1009.8	0	4.1	1.6	0.1	0
04-01-2025	20:00:00	25.1	24.5	24	54.7	45.6	41.2	0	1010.2	0	3.5	1.9	0.9	0
04-01-2025	21:00:00	25.1	23.7	22.5	54.4	45.9	39.9	0	1010.7	0	4.9	2.1	0.4	0
04-01-2025	22:00:00	23.1	22.1	21.4	61.5	57.1	46.5	0	1010.9	358.1	12	2	1.1	0
04-01-2025	23:00:00	22	21.4	20.8	65.3	60.2	56.8	0	1010.9	0	6	1.5	3.1	0
05-01-2025	00:00:00	21.7	21.2	20.5	66.4	64.4	63.3	0	1010.7	0	4	2.4	1.0	0
05-01-2025	01:00:00	21.5	20.8	20.3	65.7	64.8	63.8	0	1010.3	0	5.9	2.9	1.0	0
05-01-2025	02:00:00	20.7	20.1	19.5	68.2	66.7	64.7	0	1009.9	0	5.8	3.2	1.6	0
05-01-2025	03:00:00	20.3	19.8	19.4	66.5	65.2	63.6	0	1009.7	357.4	11.3	5.2	3.1	0
05-01-2025	04:00:00	20.3	19.7	19.1	66	64.3	63	0	1009.5	357.5	10.6	9.4	3.1	0
05-01-2025	05:00:00	19.8	19	18.1	70.2	67.9	65.4	0	1009.3	357.4	11.3	9.9	2.9	0
05-01-2025	06:00:00	18.6	18.1	17.4	71.7	70.4	69.8	0	1009.1	357.3	14	11.5	2.9	0
05-01-2025	07:00:00	17.9	17.1	16.5	75.9	73.8	71.5	0	1009.4	357.3	9	6	2.4	0
05-01-2025	08:00:00	17.5	16.8	16.2	77.8	77.1	75.7	1.2	1010.3	357.3	6.2	3.75	1.5	0
05-01-2025	09:00:00	19	18.3	17	76.3	73.2	71.3	15.3	1011.6	357.3	18	11.5	3.1	0
05-01-2025	10:00:00	22.5	20.6	18.4	73.4	67	59.7	75.5	1013	358.1	20	6	2.6	0
05-01-2025	11:00:00	24.1	23	22.1	60.2	56.6	53.1	163.9	1014	358.4	28	3.75	2.4	0
05-01-2025	12:00:00	27.3	25.1	23.7	54.2	49.3	43.8	228.7	1013.7	358.1	27.3	12.6	1.8	0
05-01-2025	13:00:00	28.2	27.3	26.3	48.7	44.7	41.5	223.5	1013.3	5.9	18.6	4.2	2.0	0
05-01-2025	14:00:00	30.1	28.9	27.6	46.1	42	39.4	277.4	1012.5	6.4	14	7.7	0.6	0
05-01-2025	15:00:00	30.2	29.2	27.8	48.3	44.2	40.2	217.8	1011.8	4.9	12	2.1	0.6	0
05-01-2025	16:00:00	29.9	28.9	28	53.7	47.2	40.9	182.7	1011	3.9	14	10.5	1.8	0
05-01-2025	17:00:00	29	28.1	26.9	57	52	47.8	103.3	1010.5	10.3	21	19.8	2.6	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
05-01-2025	18:00:00	27.3	25.8	24.4	69.3	63.9	56.4	23.3	1010.1	0.9	6	2.4	0.8	0
05-01-2025	19:00:00	25.1	24.5	23.7	70.7	60.8	54.8	0	1010.4	357.5	15.1	9.2	2.0	0
05-01-2025	20:00:00	24.7	23.9	22.9	61.3	57.4	54.4	0	1011	357.5	6.6	4.8	2.2	0
05-01-2025	21:00:00	23.6	23	22.3	62.8	58.8	52.3	0	1011.8	357.6	12.6	3	1.0	0
05-01-2025	22:00:00	23.5	22.6	22.1	55.8	54.2	52.8	0	1012.2	357.4	13.3	7.2	1.1	0
05-01-2025	23:00:00	22.6	22.1	21.5	53.6	52.7	51.5	0	1012.3	358	22	2.4	0.2	0
06-01-2025	00:00:00	22.2	21.8	21.2	53.2	51.3	48.6	0	1012	358.3	20.6	2.2	0.1	0
06-01-2025	01:00:00	21.6	20.4	19.3	58	53.3	46.8	0	1011.4	358.1	17.3	0.6	0.0	0
06-01-2025	02:00:00	19.8	19.1	18.5	58.3	57.6	56.1	0	1010.8	357.5	12.6	3	1.1	0
06-01-2025	03:00:00	19	18.5	18	57.6	55.2	51.2	0	1010.4	357.5	13.3	6.8	3.5	0
06-01-2025	04:00:00	18.5	18	17.4	53.8	51.8	50.2	0	1010.2	357.6	17.3	1.2	0.3	0
06-01-2025	05:00:00	17.8	16.9	16.2	55.5	54	51.3	0	1010.2	357.5	14.6	4.6	2.4	0
06-01-2025	06:00:00	16.7	16	15.5	55.6	54.9	54	0	1010.1	357.5	12.6	6	2.8	0
06-01-2025	07:00:00	15.9	15.2	14.5	57.5	56.3	54.3	0	1010.5	357.5	10.6	3.75	2.8	0
06-01-2025	08:00:00	15.3	14.8	14.4	57.7	56.2	54.6	1.1	1011.5	357.5	16.6	9	2.9	0
06-01-2025	09:00:00	17	16.7	14.7	55.1	48.7	48.3	67.1	1014.2	357.1	15.3	3	1.1	0
06-01-2025	10:00:00	19.7	18	16.5	49.4	47.5	45.6	103.9	1014.5	357.9	18.6	5.5	3.5	0
06-01-2025	11:00:00	23	21.2	19.3	46.2	43.9	41.1	173	1015.4	358.2	18	1.5	0.8	0
06-01-2025	12:00:00	24.9	23.5	22.3	44.9	42.6	40.7	231	1015.3	1.9	22.6	10.5	1.8	0
06-01-2025	13:00:00	26.3	25.5	24.4	41.5	39.8	37.9	266.1	1014.6	8.6	22	23.8	2.4	0
06-01-2025	14:00:00	27.5	26.6	25.6	44.9	41.5	38.3	275.8	1013.9	10.5	23.3	4.2	2.8	0
06-01-2025	15:00:00	27.9	27.3	26.7	47.6	41.4	30.5	257.8	1013.3	8.6	24	16.1	2.6	0
06-01-2025	16:00:00	28.5	27.9	27.3	38	34.3	30	203.3	1012.6	6.4	24	8.4	2.9	0
06-01-2025	17:00:00	28.1	27	25.9	51.1	41.6	35.5	116.7	1011.8	5.9	16.6	5.25	1.7	0
06-01-2025	18:00:00	26.3	25.2	23.8	57.2	53.2	49.5	27.5	1011.2	5.7	11.2	9.2	1.7	0
06-01-2025	19:00:00	24.2	23.4	22.9	60.9	55.1	50.1	0	1011.2	358.6	12.6	4.8	2.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
06-01-2025	20:00:00	23.3	22.8	22.3	50.6	48.4	46.4	0	1012	358.8	16	3	0.6	0
06-01-2025	21:00:00	22.9	22.4	21.9	52.6	50.4	49	0	1012.6	0.6	31.3	7.2	3.3	0
06-01-2025	22:00:00	22.9	22.2	21.5	51.5	50	48.3	0	1013.4	2.5	33.3	2.4	0.2	0
06-01-2025	23:00:00	21.9	21.6	21	53	51.4	49.8	0	1013.6	1.7	31.3	4.4	0.1	0
07-01-2025	00:00:00	21.5	20.6	19.9	54.2	51.6	48.4	0	1013.3	3.1	33.3	1.2	0.7	0
07-01-2025	01:00:00	20.4	19.9	19.4	56.8	55.7	53.7	0	1012.8	1.5	30.6	6	1.1	0
07-01-2025	02:00:00	19.9	18.4	17.1	62.3	59.6	56.4	0	1012.2	359	18	13.6	3.3	0
07-01-2025	03:00:00	17.7	17	16.5	64.7	62.7	61.3	0	1011.9	357.6	10	2.4	1.0	0
07-01-2025	04:00:00	17.1	16.6	15.9	68.9	66.7	64.6	0	1011.8	357.5	10.6	9.2	3.3	0
07-01-2025	05:00:00	17	16.2	15.5	76.5	73	68.7	0	1011.8	357.9	6.6	4.8	3.5	0
07-01-2025	06:00:00	20.3	18.8	15.5	83.2	74	68.3	0	1012.4	12.6	26	3	0.9	0
07-01-2025	07:00:00	20.1	19.6	19	71.9	69.4	64.3	0	1013.6	8.4	21.3	7.2	2.6	0
07-01-2025	08:00:00	20.5	19.9	19.3	66.2	64.4	63	1.9	1014.7	11.2	28.6	2.4	1.3	0
07-01-2025	09:00:00	21.5	20.8	20	65.1	62.1	59	35.6	1016	9.9	38	4.4	1.5	0
07-01-2025	10:00:00	23	22	21	62.1	57.1	52.4	103.8	1017.4	11.1	39.3	1.2	1.0	0
07-01-2025	11:00:00	24.5	23.4	22.4	53.7	49.7	45.6	172.6	1017.7	10.9	26.6	6	2.0	0
07-01-2025	12:00:00	25.9	25	24.1	50.1	44.9	41.9	230.8	1017.3	9.4	26.6	17	1.5	0
07-01-2025	13:00:00	26.9	26.2	25.5	47.5	44.3	39.7	269.4	1016.2	6.5	22.6	3	1.7	0
07-01-2025	14:00:00	27.4	26.9	26.5	44.8	42.5	38.8	279.4	1015.2	10.8	33.3	11.5	0.9	0
07-01-2025	15:00:00	27.4	26.5	25.9	49.4	46.7	41.7	256	1013.8	12.4	28.6	6	0.9	0
07-01-2025	16:00:00	26.7	26.2	25.7	47.4	45.2	41.1	207.9	1012.8	11.2	38	3.75	1.8	0
07-01-2025	17:00:00	26.3	25.7	24.9	46.4	44.3	42.5	131.7	1012	9.8	32.6	9	1.7	0
07-01-2025	18:00:00	25.5	24.3	23.1	54.7	49.7	45.9	39.7	1011.8	12.2	32.6	3	1.7	0
07-01-2025	19:00:00	23.6	22.8	22.3	57.7	56.2	54	0	1012	16.4	22	5.5	1.7	0
07-01-2025	20:00:00	22.9	22.5	22.1	58.9	56.6	53.2	0	1012.4	11.8	20.6	1.5	0.8	0
07-01-2025	21:00:00	22.8	22.5	22.1	55.8	53.9	52.1	0	1012.8	11.2	24.6	7.5	2.9	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
07-01-2025	22:00:00	22.9	22.4	21.7	58.8	53.5	47.5	0	1013.4	10.7	24	17	3.5	0
07-01-2025	23:00:00	22.5	22.1	21.7	58.7	54.4	49.1	0	1013.3	15.7	28	3	3.7	0
08-01-2025	00:00:00	22.5	22	21.5	51.9	48.7	45	0	1013.4	11.3	20.6	9.2	3.1	0
08-01-2025	01:00:00	22.1	21.6	20.9	53.2	50.5	47.4	0	1012.8	9.8	29.3	4.8	1.5	0
08-01-2025	02:00:00	21.5	20.7	19.9	59.2	53.3	48	0	1012.1	17.3	20	3	1.2	0
08-01-2025	03:00:00	20.5	20	19.4	60.3	56	52.3	0	1011.6	61.1	26.6	9.2	3.5	0
08-01-2025	04:00:00	19.9	19.2	18.5	61.1	56.9	53.7	0	1011.1	53.9	27.3	4.8	2.2	0
08-01-2025	05:00:00	19.3	18.9	18.4	61.1	58	54	0	1010.7	56.8	28	3	2.8	0
08-01-2025	06:00:00	19.1	18.6	17.9	66.2	62.3	56.7	0	1010.4	54.9	22	10.8	2.6	0
08-01-2025	07:00:00	18.7	18.2	17.4	70.8	66.8	63	0	1011.1	55	22.6	3.6	1.8	0
08-01-2025	08:00:00	18.9	18	17.3	71.2	69.7	67	1.7	1012.2	44.9	15.3	6.6	2.2	0
08-01-2025	09:00:00	20	19.4	18	68.5	63.5	62.8	62.4	1015	27.7	14	1.8	0.7	0
08-01-2025	10:00:00	22	20.9	19.5	63.2	58.8	55.3	104.9	1015.8	65.2	22	9	2.4	0
08-01-2025	11:00:00	24.3	22.7	21.5	56.4	53.3	48.5	180.2	1016.1	83.4	22.5	20.4	2.0	0
08-01-2025	12:00:00	25	24.3	23.7	49.4	46.6	44.1	243.3	1015.7	25.7	10.6	1.2	0.5	0
08-01-2025	13:00:00	26.9	25.7	24.3	46.8	41.7	37.7	281.6	1014.9	6.6	12	4.6	0	0
08-01-2025	14:00:00	27.6	26.8	25.8	41.1	35.1	30.5	293.6	1013.9	8.5	15.3	2.4	0	0
08-01-2025	15:00:00	28.2	26.4	25.1	48.9	41.6	31	272.8	1012.9	12.8	22.6	1.5	0.3	0
08-01-2025	16:00:00	26.8	26	25.1	46.2	40.5	31.8	223	1012	6.1	18	3.6	1.7	0
08-01-2025	17:00:00	26.5	25.8	25.3	42.9	41.1	38.1	144.4	1011.2	3.6	13.3	1.2	0.1	0
08-01-2025	18:00:00	25.9	24.6	23.3	53	47.6	42.5	46.8	1011	359.7	13.3	2.2	0.9	0
08-01-2025	19:00:00	23.7	22.4	21.7	63.2	59	52.8	0	1010.7	6.7	9.3	0.6	0.2	0
08-01-2025	20:00:00	22.5	22.2	21.8	61.9	60	57.9	0	1010.9	12.2	8.6	3	2.6	0
08-01-2025	21:00:00	22.4	22	21.6	64.5	62.4	60.6	0	1011.5	4.3	9.3	6.8	3.1	0
08-01-2025	22:00:00	22.1	21.7	21.3	64.9	62.4	60.4	0	1011.8	11.7	4.6	1.2	0.5	0
08-01-2025	23:00:00	22.1	21.7	21.3	61.5	57.3	52	0	1011.9	4.1	9.3	4.6	2.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
09-01-2025	00:00:00	21.9	21.5	20.9	58.2	56.1	52.7	0	1011.7	10.2	4.6	3.9	0.4	0
09-01-2025	01:00:00	21.5	20.7	19.8	64.9	59.2	55.4	0	1011	26.9	9.3	3.8	0.2	0
09-01-2025	02:00:00	20.3	19.7	18	69.1	64.7	61.8	0	1010.6	0	8.6	5.2	3.1	0
09-01-2025	03:00:00	18.4	16.1	14.5	79.6	76.4	69.1	0	1009.4	357.3	2.9	1.1	0.1	0
09-01-2025	04:00:00	15.1	14.5	14	75.8	73.8	72.1	0	1009.1	357.3	4.6	1.6	0.1	0
09-01-2025	05:00:00	14.7	13.6	12.6	74.4	72.2	70.7	0	1008.9	357.3	1.8	0.9	0.0	0
09-01-2025	06:00:00	13.6	12.9	12.2	74.7	73.4	72.1	0	1009	357.3	5.6	3	1.0	0
09-01-2025	07:00:00	13.4	12.8	12.2	76.3	75.3	73.3	0	1009.7	357.3	8.8	6.8	2.6	0
09-01-2025	08:00:00	13.5	12.5	11.7	80.3	78.2	76.1	1.1	1010.2	0	2	1.2	0.1	0
09-01-2025	09:00:00	18.1	17.8	13	76.5	63.3	63	59.2	1014	0	6	4.6	2.4	0
09-01-2025	10:00:00	21.7	19.4	17.6	63.5	60.5	57.6	94.1	1014.3	357.6	9.3	2.4	1.1	0
09-01-2025	11:00:00	24.9	23.6	21.5	57.8	49.6	45.1	163.5	1014.9	61.8	7.3	1.5	0.2	0
09-01-2025	12:00:00	25.5	24.9	24.1	48.3	46.2	44.3	220.9	1014.6	20.6	10	9.2	2.8	0
09-01-2025	13:00:00	26.7	25.6	24.7	49.7	46.3	43	255.3	1013.7	3.8	10.6	4.8	2.8	0
09-01-2025	14:00:00	27.6	25.9	25.1	47.8	42.8	37.5	258.3	1012.8	1.3	16.6	3	2.0	0
09-01-2025	15:00:00	30.3	28.7	27.1	39.6	32.5	29.4	236.6	1012.4	3.1	8.6	7.2	1.8	0
09-01-2025	16:00:00	30	28.9	27.3	48.8	37.4	30.7	190.5	1011.9	8.4	11.3	2.4	1.7	0
09-01-2025	17:00:00	28.3	27.8	27.1	51.7	45.7	41.1	115.3	1011.1	5.1	8.6	4.4	1.1	0
09-01-2025	18:00:00	27.4	25.5	24.4	54.2	49.4	42.4	31	1010.6	3.9	7.3	1.2	0.0	0
09-01-2025	19:00:00	24.9	23.7	22.9	56.2	50.8	43.1	0	1010.5	0	2.9	1.1	0.0	0
09-01-2025	20:00:00	23.4	22.8	21.9	65.8	60.7	55.8	0	1010.9	0	3.1	1.5	0.0	0
09-01-2025	21:00:00	23.1	22.6	22.1	69.6	66.5	62.6	0	1011.9	76.1	4	1.7	0.0	0
09-01-2025	22:00:00	23.4	22.9	22.3	70.5	67.6	64.5	0	1012.5	88	12	0.7	0.1	0
09-01-2025	23:00:00	23.5	23.1	22.6	67.3	65.6	63.8	0	1012.7	88	18.6	1.1	0.5	0
10-01-2025	00:00:00	23.5	23.1	22.5	66.2	63.2	58.4	0	1012.7	87.1	18.6	1.6	0.1	0
10-01-2025	01:00:00	23.2	22.7	22.1	64.3	59.5	56.2	0	1012.3	92.8	18.6	1.2	0.2	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
10-01-2025	02:00:00	22.7	22.2	21.5	67.5	63.8	61.1	0	1011.7	98.8	12	2.1	0.9	0
10-01-2025	03:00:00	22.1	21.6	21.1	69.6	65.6	61.4	0	1011.1	74.8	6.6	2.4	0.4	0
10-01-2025	04:00:00	21.7	20.9	20.2	73.4	69.1	65.3	0	1010.7	98.9	4	2.6	0.9	0
10-01-2025	05:00:00	21.5	21	20.5	66.6	62.2	60	0	1010.8	73.2	6	3.1	1.1	0
10-01-2025	06:00:00	21.3	20.4	19.5	73.8	71.3	63.4	0	1010.9	0	9.2	6.8	2.8	0
10-01-2025	07:00:00	20.9	20.1	19.3	74.2	67.7	61.6	0	1011.6	83.6	6	1.2	0.4	0
10-01-2025	08:00:00	20.6	19.6	18.9	76.2	74.5	68.2	2.7	1012.4	0	5.8	4.6	1.8	0
10-01-2025	09:00:00	22.6	21.1	19.4	73	64.4	57.7	27.8	1014.1	0	4.5	2.4	1.5	0
10-01-2025	10:00:00	24.5	23.7	22.3	58.1	50.8	46.4	87.7	1015.9	4	3.5	1.5	0.0	0
10-01-2025	11:00:00	26.3	25.1	24.1	49.4	45.4	42.4	139	1016.2	0	4.9	3.6	1.5	0
10-01-2025	12:00:00	27.1	26	25.2	46.5	45.1	43.1	191.8	1015.7	357.1	2	1.2	0.0	0
10-01-2025	13:00:00	28.7	27.4	26.7	45.3	42.2	39.4	232.8	1015.3	0	3.3	2.2	0.0	0
10-01-2025	14:00:00	29.8	28.6	27.6	45.8	41.5	32.2	241.5	1014.2	0	3.2	0.6	0.2	0
10-01-2025	15:00:00	30.7	29.9	29.2	39	33.2	30	217.6	1013.3	0	4.8	3	1.7	0
10-01-2025	16:00:00	30.6	30.1	29.3	36.6	33.5	30.9	165	1012.4	0	9	6.8	2.8	0
10-01-2025	17:00:00	30.2	29	27.6	46	40.5	35.2	92.9	1011.3	0	4	1.2	0.0	0
10-01-2025	18:00:00	28.2	27.6	26.5	46.4	35.3	30.1	22.1	1010.6	338.7	8.6	4.2	1.7	0
10-01-2025	19:00:00	26.9	25.2	24	43.8	40.7	35.8	0	1010.4	0	9.6	5.6	2.8	0
10-01-2025	20:00:00	24.5	23.5	22.9	45.6	44.3	43	0	1010.9	357.3	6.3	4.1	2.4	0
10-01-2025	21:00:00	23.5	22.6	21.8	51.5	48.3	45.2	0	1011.4	357.3	4.9	3.5	2.9	0
10-01-2025	22:00:00	22.9	22.4	21.9	56.4	51.5	47.9	0	1012	357.3	5.1	3.6	2.6	0
10-01-2025	23:00:00	22.5	21.6	20.4	59.8	53.3	50.8	0	1012	357.3	4.8	2.9	1.1	0
11-01-2025	00:00:00	22	21.1	20.3	71.3	64.6	58.5	0	1011.7	0	5.1	3.1	2.6	0
11-01-2025	01:00:00	22.1	21.5	20.9	75.5	67.6	57.7	0	1011.7	0	6.1	3.8	2.9	0
11-01-2025	02:00:00	22.1	21.3	20.1	66.2	60.9	56	0	1011.1	0	4.5	2.1	1.1	0
11-01-2025	03:00:00	20.7	20.3	19.6	69.8	67	65.1	0	1010.5	357.3	6.6	1.9	0.7	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
11-01-2025	04:00:00	20.3	19.5	18.7	73.2	71.4	69.6	0	1010.3	357.3	3.5	1.3	0.2	0
11-01-2025	05:00:00	19.4	18.8	18.2	76.5	75.2	73	0	1010.1	0	2.8	1.1	0.0	0
11-01-2025	06:00:00	20.2	19.4	18.6	75.3	71.8	69	0	1010.6	360	2.6	1.8	0.1	0
11-01-2025	07:00:00	19.3	18.4	17.4	77.9	74.9	72.1	0	1010.7	0	9	6.9	1.7	0
11-01-2025	08:00:00	18.2	17.4	16.7	81.2	79.3	77.2	1.4	1011.5	0	6	3.6	2.6	0
11-01-2025	09:00:00	21.5	19.1	17.2	80	74.3	65.5	30	1013.1	0	4	2.3	1.1	0
11-01-2025	10:00:00	25.4	23.7	21.1	65.5	53.3	43.2	85.1	1015.1	358.1	8.6	5.4	2.4	0
11-01-2025	11:00:00	26.7	25.8	24.7	44	40.6	38.1	152.3	1015.7	357.6	12.6	1.8	0.2	0
11-01-2025	12:00:00	28.6	27.7	26.3	44.8	41.2	38.1	204.6	1015.7	2.2	12	3.3	1.3	0
11-01-2025	13:00:00	29.2	28.4	27.8	44.9	42.7	40.4	237.7	1015	0.2	7.3	0.9	0.0	0
11-01-2025	14:00:00	29.9	28.8	28	44.7	42	37.9	242.5	1013.8	2.4	10	4.5	1.1	0
11-01-2025	15:00:00	29.6	28.8	28.1	48.5	44.7	40.2	207.9	1012.8	23.3	14	10.2	0.9	0
11-01-2025	16:00:00	28.4	27	25.9	61.2	55.4	47.3	109.9	1011.5	104.7	6.6	1.8	0.5	0
11-01-2025	17:00:00	27.5	26.8	26.2	60.1	56.7	52.8	79.6	1011.4	33.4	7.9	6.9	2.0	0
11-01-2025	18:00:00	26.7	25.5	24.1	67.2	61.9	56.8	20.8	1011	0	3.2	1.5	0.0	0
11-01-2025	19:00:00	24.5	23.6	22.5	65.5	61.1	59.6	0	1011	0	3	1.7	0.0	0
11-01-2025	20:00:00	22.9	22.2	21.6	64.8	64	62.8	0	1011.7	0	4	1.6	0.2	0
11-01-2025	21:00:00	22.5	21.9	21.3	64.1	60.8	58.1	0	1012.3	0	4.5	1.7	0.1	0
11-01-2025	22:00:00	21.7	20.9	20.1	70.9	68.7	63.5	0	1012.9	0	3.6	1.2	0.6	0
11-01-2025	23:00:00	20.7	20.3	19.8	70.9	69.4	68.4	0	1013	0	4.5	1.4	0.4	0
12-01-2025	00:00:00	20.5	20.1	19.5	74	71.7	67.9	0	1013.1	0	3.3	0.8	0.0	0
12-01-2025	01:00:00	20.7	20.2	19.8	69.4	68.3	67.1	0	1012.6	357.3	7.3	1.2	0.1	0
12-01-2025	02:00:00	20.2	19.5	18.7	67.7	65.3	63.8	0	1012.4	357.3	2.6	1.1	0.2	0
12-01-2025	03:00:00	19.3	18.8	18.3	72.1	69.4	66.6	0	1012	357.3	8.6	1.8	0.4	0
12-01-2025	04:00:00	18.9	18.5	17.8	72.5	71.6	70.6	0	1011.9	357.4	9.3	0.6	0.0	0
12-01-2025	05:00:00	18.3	17.6	17	73.4	71.7	70.8	0	1011.7	357.3	4.8	2.6	1.8	0



Final EMP Report for Dahej-Hazira-Ghogha for 13th December 24 to 12th January 2025

Ghogha Station														
DATE	TIME	AT_Max	AT_Avg	AT_Min	RH_Max	RH_Avg	RH_Min	SOLAR	BP	WD	WS_Max	WS_Avg	WS_Min	RAIN
DD/MM/YY	HH:MM:SS	DegC	DegC	DegC	%	%	%	W/m2	mbar	Deg	M/S	M/S	M/S	MM
12-01-2025	06:00:00	17.6	17.2	16.7	74	73.5	73	0	1012.1	357.6	12	9.2	2.2	0
12-01-2025	07:00:00	17.3	16.6	15.9	76	73.7	72.5	0	1012.6	357.3	10	4.8	1.7	0
12-01-2025	08:00:00	17.1	16.2	15.5	78.6	77	74.2	1.4	1013.2	357.5	15.3	3	2.0	0
12-01-2025	09:00:00	19.3	17.9	16.7	74.3	71.2	69.3	31.2	1014.9	357.6	13.3	7.2	2.2	0
12-01-2025	10:00:00	23.2	21	18.9	70.4	67.9	63.6	91.4	1016.6	3.5	17.3	2.4	1.1	0
12-01-2025	11:00:00	24.1	23.5	22.7	64.9	62.9	60.6	160.9	1017.2	12.6	24.6	4.4	0	0
12-01-2025	12:00:00	24.8	24	23.3	64	62.8	60.4	224.5	1016.7	5.2	24.6	1.5	0	0
12-01-2025	13:00:00	26.8	25.5	24.3	61.1	58.6	55.8	263.9	1016.1	8.2	28	7.5	0	0
12-01-2025	14:00:00	27.6	26.8	25.9	58.2	54.8	52.3	279.9	1015.3	12.6	26.6	17	0	0
12-01-2025	15:00:00	28.6	27.5	26.7	55	52.8	49	262.4	1014.3	12.3	31.3	3	1.8	0
12-01-2025	16:00:00	28.6	27.9	27.2	52.2	49.7	47.6	216	1014	14.3	22	11.5	1.5	0
12-01-2025	17:00:00	27.6	26.9	26.1	53.7	50.4	47.5	132.7	1013.2	13.4	21.3	6	1.7	0
12-01-2025	18:00:00	26.6	25.1	23.3	62.3	58.4	53.6	37	1012.9	13.8	18.6	4.5	1.8	0
12-01-2025	19:00:00	24.3	23.4	22.7	71	66.8	61.7	0	1013	13.2	14	10.8	1.5	0
12-01-2025	20:00:00	23.3	22.8	22.2	73.6	71	69	0	1013.6	6.6	12	3.6	2.0	0
12-01-2025	21:00:00	22.9	22.5	21.9	73.4	70.1	66.4	0	1014.3	14.7	14	6.6	2.9	0
12-01-2025	22:00:00	22.6	22.1	21.3	69.8	67.3	65.1	0	1014.6	13.5	16	1.8	0.2	0
12-01-2025	23:00:00	22.3	21.7	21.3	69.4	66.6	60.8	0	1014.4	14.4	12	9	1.5	0



Gujarat Environment Management Institute (GEMI)

(An Autonomous Institute of Government of Gujarat)

HEAD OFFICE

“GEMI Bhavan”, Plot No. B 246 & 247, Electronic Estate, GIDC, Sector 25,
Gandhinagar, Gujarat 382024

LABORATORY

Plot No. B-64, Electronic Estate GIDC, Sector-25, Gandhinagar-382025



079 23240964



079 23240965



079 23240964
info-gemi@gujarat.gov.in



www.gemi.gujarat.gov.in

ANNEXURE- 6



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,

GANDHINAGAR - 382010,

(T) 079-23232152

By R.P.A.D

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 3(3) & 6 of the Hazardous Waste (Management and Handling & Trans boundary Movement) Rules,2016 framed under the Environmental (Protection) Act-1986. This Board is empowered to Grant CC&A.

And whereas Board has received consolidated consent application Inward no. **261148** dated **27/07/2022** for the **Consolidated Consent and Authorization (CC & A)** of this Board under the provisions / rules of the aforesaid Acts. Consents & Authorization are hereby granted as under:

CONSENTS AND AUTHORISATION:

(Under the provisions /rules of the aforesaid environmental acts)

To,
✓ M/s. Deendayal Port Authority
Essar Bulk Terminal Ltd, Adani Hazira Port Road,
Hazira Gam, Suvali - 394270,
Tal: Chorasi, Dist: Surat.

1. Consent Order No. AWII-127510 Date of issue: 10/07/2023.
2. The consents shall be **valid upto 26/07/2027** for the use of outlet for the discharge of treated effluent and emission due to operation facility of the following activity:

Sr. No.	Facility
1	"600 Meter water front including berthing Jetty of 170 meter and 5 Ha back up area for Ro-Ro/Ro-Pax Facility"

SUBJECT TO SPECIFIC CONDITION:

- I. Industry shall strictly comply with EC issued by Central Authority vide their letter No: F. No. 11-46/2011-1A.III dated: 04/04/2022.
- II. Industry shall manage Solid Wastes generated from industrial activities as per Solid Waste Management Rules-2016 (solid waste as defined in Rule-3(46)).
- III. As per Provisions of Rule 18 of Solid Waste Management Rules-2016 you are directed to make an arrangement in Utilities to replace at least five percent (5%) of your solid fuel requirement by 'refused derived fuel'.
- IV. To do retrofitting at D.G. Sets for emission control and unit shall submit compliance with respect to Board circular No. GPCB/Air Action - 03 (1)(E)/599145, dated 27/08/2021 in the matter of NGT O.A. No. 681/2018.
- V. Unit shall abide by any decision/order in the NGT matter OA No: 59/2022 (WZ)

3. CONDITIONS UNDER THE WATER ACT:

- 3.1. Source of Water: Gujarat Water Supply & Sewerage Board (GWSSB).

M/s. Deendayal Port Authority (ID: 88242)

Page 1 of 6

Clean Gujarat Green Gujarat

Website : <https://gpcb.gujarat.gov.in>

- 3.2. The quantity of the fresh water consumption for industrial purpose shall be NIL.
- 3.3. The quantity of the fresh water consumption for domestic purpose shall not exceed 12 KI./Day.
- 3.4. There shall be no industrial waste water generation from the manufacturing process and other ancillary industrial operations.
- 3.5. The quantity of domestic waste water shall not exceed 8 KI./Day.
- 3.6. Domestic waste water shall be disposed through septic tank/soak pit system.

4. CONDITIONS UNDER THE AIR ACT:

- 4.1. The following shall be used as a fuel in D.G. Set.

Sr. No.	Fuel	Quantity
1	Diesel	50 Liter/1hr.

- 4.2. The applicant shall install & operate comprehensive adequate air pollution control system in order to achieve prescribed norms.
- 4.3. The flue gas emission through stack attached to D.G. Set shall conform to the following standards:

Stack No.	Stack Attached to	Stack Height in Meter	Air Pollution Control System	Parameters	Permissible Limit
1	D.G. Set (300 KVA) Stand by	11	Acoustic Enclosure	Particulate Matter SO ₂ NO _x	150 mg /Nm ³ 100 ppm 50 ppm

- 4.4. There shall be no process emission from the manufacturing process as well as any other ancillary process.
- 4.5. Applicant shall comply with National Ambient Air Quality Standards notified by Central Pollution Control Board, New Delhi time to time under the provision of the Environment (Protection) Act-1986 for all the parameters. The concentration of all parameters in the ambient air within the premises of the industry and a distance of 10 meters from the sources (other than the stack/vent) shall not exceed than the permissible limit.

Parameters	Permissible Limit (µg/m ³)	
	Annual	24 Hrs Average
Particulate Matter-10 (PM ₁₀)	60	100
Particulate Matter-2.5 (PM _{2.5})	40	60
SO ₂	50	80
NO _x	40	80

- 4.6. The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
- 4.7. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Daytime is reckoned in between 6 a.m. and 10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,

GANDHINAGAR - 382010,

(T) 079-23232152

5. **D. G. Sets Conditions:**

The D. G. Set shall have acoustic enclosure and shall comply with the standards specified at sr. no. 95 of Schedule-I of the rule-3 of E.P. Rules - 1986 and Noise pollution level as per the Air Act - 1981.

D. G. Set Standards:

- The flue gas emission through stack attached to D. G. Sets shall conform to the following standards.
- The minimum height of stack to be provided with each of the generator set shall be $H = h + 0.2 (KVA)^{1/2}$, where H = Total stack height in meter, h = height of the building in meters where or by the side of which the generator set is installed.
- Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.
- The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may be possible to check the performance of the acoustic enclosure / acoustic treatment, under such circumstances the performance may be checked for noise reduction up to actual ambient noise level preferably, in the night time). The measurement for insertion loss may be done at different points at 0.5 m from the acoustic enclosure/room, and the averaged.
- The D.G set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB (A).
- All efforts shall be made to bring down the noise level due to the D. G. Set, outside the premises, within the ambient noise requirements by proper siting and control measures.
- Installation of a D. G. Sets must be strictly in compliance with the recommendations of the D. G. Set manufacturer.
- A proper routine and preventive maintenance procedure for the D. G. Set should be set and followed in consultation with the DG Sets manufacture which would help prevent noise levels of the DG Set from deteriorating with use.

6. **AUTHORIZATION as per HAZARDOUS AND OTHER WASTE (MANAGEMENT AND TRANSBOUNDARY) RULES, 2016 Form-2 [See rule 6 (2)]**

Form for grant of authorization for occupier or operator handling Hazardous waste

6.1. Authorization order No: **AWH-127510** of Issue: **10/07/2023**.

6.2. **M/s. Deendayal Port Authority** is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at **Essar Bulk Terminal Ltd., Adani Hazira Port Road, Hazira Gam, Suvali - 394270, Tal: Chorasi, Dist: Surat**.

Sr. No.	Waste (Schedule-I/ Category)	Quantity MT/Year	Facility
1	Used Oil (I/5.1)	0.010	Collection, storage, & sale out to MOEF registered recyclers through online xgn generated manifest system and vehicle registered with VITS system only.

6.3. The authorization shall be valid up to **26/07/2027**.

6.4. The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

- 6.5. The authorization is granted to operate a facility for collection, storage within factory premises transportation and ultimate disposal of Hazardous wastes as per condition no.6.2 to the industry having valid CCA of this Board.

7. TERMS AND CONDITIONS OF AUTHORISATION

- 7.1 The applicant shall comply with the provisions of the Environment (Protection) Act-1986 and the rules made there under.
- 7.2 The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
- 7.3 The persons authorized shall not rent, lend, sell, and transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- 7.4 Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
- 7.5 The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
- 7.6 The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Wastes and Penalty”
- 7.7 It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
- 7.8 An application for the renewal of an authorization shall be made as laid down in rules 6(2) under Hazardous Waste and Other Waste Rules, 2016.
- 7.9 The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
- 7.10 The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- 7.11 The hazardous and other wastes which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.
- 7.12 The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
- 7.13 Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
- 7.14 The waste generator shall be totally responsible for (i.e. collection, storage, transportation and ultimate disposal) the wastes generated.
- 7.15 Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form-4 by 30th day of June of every year for the preceding period April to March.
- 7.16 In case of any accident, details of the same shall be submitted on Form-11 to Gujarat Pollution Control Board.
- 7.17 As per “Public Liability Insurance Act-91” company shall get Insurance Policy, if applicable.
- 7.18 Empty drums and containers of toxic and hazard material shall be treated as per guideline published for “Management & Handling of discarded containers”. Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,

GANDHINAGAR - 382010,

(T) 079-23232152

- 7.19 In case of transport of hazardous wastes to a facility for (i.e. treatment, storage and disposal) existing in a State other than the State where hazardous wastes are generated, the occupier shall obtain 'No Objection Certificate' from the State Pollution Control Board or Committee of the concerned State of Union Territory Administration where the facility exists.
- 7.20 Unit shall take all concrete measures to show tangible results in waste generation, reduction, avoidance, reuse and recycle. Actions taken in this regard shall be submitted within three months and also along with Form-4.
- 7.21 Industry shall have to display the relevant information with regards to hazardous waste as indicated in the Hon. Supreme Court's Order in W.P. No.657 of 1995 dated 14th October, 2003.
- 7.22 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous wastes generated within the factory premises.

8. GENERAL CONDITIONS:

- 8.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 8.2 Applicant shall also comply with the general conditions given in annexure I.
- 8.3 Whenever due to accident or other unforeseen act or ever, such emissions occur or is apprehended to occur in excess of standards laid down such information shall be forthwith reported to Board, concerned Police Station, Office of Directorate of Health Service, Department of Explosives, Inspectorate of Factories and local body.
- 8.4 In case of failure of pollution control equipments, the production process connected to it shall be stopped. Remedial actions/measures shall be implemented immediately to bring entire situation normal.
- 8.5 The Environmental Management Unit/Cell shall be setup to ensure implementation on and monitoring of environmental safeguards and other conditions stipulated by statutory authorities. The Environmental Management Cell/Unit shall directly report to the Chief Executive of the organization and shall work as a focal point for internalizing environmental issues. These cells/units also coordinate the exercise of environmental audit and preparation of environmental statements.
- 8.6 The Environmental audit shall be carried out yearly and the environmental statements pertaining to the previous year shall be submitting to this State Board latest by 30th September every year.
- 8.7 The Board reserves the right to review and/or revoke the consent and/or make variations in the conditions, which the Board deems, fit in accordance with Section 27 of the Act.
- 8.8 In case of change of ownership/management the name and address of the new owners/partners/directors/proprietor should immediately be intimated to the Board.
- 8.9 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon. Supreme order in w.p. no. 657 of 1995 dated 14th October 2003.

9. SPECIFIC CONDITIONS:

- 9.1 The authorized actual user of hazardous and other wastes shall maintain records of hazardous and other wastes purchased in a passbook issued by the State Pollution Control Board along with the authorization.

- 9.2 Handling over of the hazardous and other wastes to the authorized actual user shall be only after making the entry in the passbook of the actual user.
- 9.3 In case of renewal of authorization, a self-certified compliance report in respect of effluent, emission standards and the conditions specified in the authorization for hazardous and other wastes shall be submitted to SPCB.
- 9.4 The occupier of the facility shall comply Standard operating procedure/guidelines published by MOEF&CC or CPCB or GPCB from time to time.
- 9.5 Unit shall comply provisions of E-Waste Management Rules-2016.
- 9.6 The disposal of Hazardous Waste shall be carried out as per the waste Management hierarchy.
- 9.7 The occupiers of facilities shall not store the hazardous and other wastes for a period not exceeding ninety days. Prior permission of the Board shall be obtained for extension of the storage period.
- 9.8 The occupier shall maintain the records of generation, sale, storage, transport, recycling, co processing and disposal of hazardous waste and make available during the inspection.
- 9.9 The transportation of the hazardous waste shall be carried out in GPS mounted dedicated vehicles.

For and on behalf of
Gujarat Pollution Control Board


(M. R. Macwana)
Unit Head, Surat

NO: GPCB/CCA-SRT-2458/ID-88242/

Date:

Issued to:

✓ M/s. Deendayal Port Authority
Essar Bulk Terminal Ltd, Adani Hazira Port Road,
Hazira Gam, Suvali - 394270,
Tal: Chorasi, Dist: Surat.

Outward No: 747490, 13/07/2023

Annexure –II

Monitoring the implemental Safe guards
Ministry of Environment, Forests & Climate Change
Regional office (WZ), Gandhinagar.
Monitoring Report (Period from October, 2024 to March, 2025)
DATA SHEET

Sr. No.	Particulars	Reply
1.	Project type: River valley/Mining/ Industry/thermal/ nuclear/Other (specify)	Infrastructure and Miscellaneous Projects + CRZ
2.	Name of the project	Development of Ro-Ro/Ro-Pax Facility at Hazira by Deendayal Port Authority (600 m water front and 24 Ha. backup area
3.	Clearance Letter (s). OM no and date	MoEF&CC, GoI vide letter dated 4/4/2022 issued Bifurcation of Environmental and CRZ Clearance accorded to M/s Essar Bulk Terminal Limited vide letter dated 6th May, 2014 in the name of Deendayal Port Trust (Now Deendayal Port Authority)
4.	Location a) District (s) b) State (s) c) Location/latitude/longitude	Dist: Surat State: Gujarat Location: Geo Coordinates: Latitude: 21° 04' 39.432" N to 21° 4 39.15 N Longitude: 72°38' 26.93" E to 72°38'58.88" E
5.	Address for Correspondence a) address of Concerned Project Chief Engineer (with pin code & telephone/telex/fax numbers b) Address of Executive project Engineer/manager/ (with pin code fax numbers)	Chief Engineer, Deendayal Port Authority, A.O. Building, Annex, Post Box No.-50, Gandhidham- Kutch. Gujarat Pin – 370201 Tel: 02836-233192, Fax-02836-220050. XEN (RoRo), A.O. Building, Annex, Gandhidham, Gujarat.
6.	Salient features a) Of the Project b) Of the Environmental Management Plan	Development of 600 m waterfront and 24 ha back up area at Hazira port for RoRo/RoPax facility. Salient Features of EMP prepared for the Development of Ro-Ro/Ro-Pax Facility at Hazira by Deendayal Port Authority has already been communicated with the compliance report dated 05/08/2022.

	Production Details during compliance period and (or) during the previous financial year	N/A. DPA developed Ro-Ro/Ro-Pax facility which is being used for public conveyance and also for trailer, trucks, cars etc.
7.	Breakup of the project area: a) Submergence area: forest & non-forest b) Others	N/A. Project area is 600 m waterfront and 24 ha back up area
8.	Breakup of the project affected population with enumeration of those losing houses/dwelling units only agricultural land & landless laborer's/artisen a) SC. ST/Adivasis b) Others (please indicate whether these figures are based on any scientific and systematic survey carried out of only provisional figures, if a survey is carried out give details and years of survey).	N/A The GMB had allotted land of 24 Hectares to Deendayal Port Authority. N/A N/A
9.	Financial details a) Project cost as originally planned and subsequent revised estimates and the year of prices reference. b) Allocation made for environmental management plans with item wise and year wise break-up c) Benefit cost ratio/ Internal Rate of Return and the year of assessment Whether (c) includes the cost of environmental management plans so far. d) Actual expenditure incurred on the project. e) Actual expenditure incurred on the environmental management plans so far.	69.06 Crores The allocation made under the scheme of "Environmental Services & Clearance thereof other related Expenditure" during RBE 2024-25 is Rs. 585 Lakhs. The project is carried out on public interest; hence, IRR is not possible. 83.41 Crores (Excluding GST) The expenditure made under the scheme of "Environmental Services & Clearance thereof other related Expenditure" is Rs. 522 Lakhs from October, 2024 to March 2025.

10.	Forest land requirement a) The status of approval for diversion of forest land for non-forestry use b) The status of clear felling c) The status of compensatory a forestation, if any d) Comments on the viability & sustainability of compensatory a forestation programmed in the light of actual field experience so far	Nil (Not Applicable) N/A N/A N/A N/A
11.	The status of clear felling in non-forest areas (such as submergence area of reservoir, approach roads), if any with quantitative information.	N/A
12.	Status of construction: a) Date of commencement (Actual and/or planned) b) Date of completion (Actual and/or planned)	Work Order has been issued on 15/4/2021 and accordingly work has been initiated DPA has developed RoRo/RoPax facility (170 m berthing jetty and other allied structure viz. approach jetty, pontoons, link span etc. and 5 Ha. area (onshore facility)). However, for remaining development of onshore /offshore facility, DPA engaged Indian Ports Association, New Delhi. After receipt of sreport of IPA, further development will be undertaken.
13.	Reasons for the delay if the Project is yet to start	N/A
14.	Date of site visited a) The dates on which the project was monitored by the regional office on pervious occasion. if any b) The date site visit for this monitoring report	---
15.	Details of the correspondence with project authorities for obtaining action plans/information on status of compliance to safeguard other than the routine letters for logistic support for site visit. (The first monitoring report may contain the details of all the letters issued so far but the later reports may cover only the letters issued subsequently.)	---