

INSPECTION REPORT

OF

M/s. GOA CARBON LTD.

Dated: 28/05/2024



SUBJECT: - ORIGINAL APPLICATION NO.80 OF 2024 (WZ)

Scheduled Tribe Association &Ors Applicants

Versus

Goa State Pollution Control Board &OrsRespondents

Briefing about the Court matter

The Matter is placed before The Hon'ble National Green Tribunal Western Zone Bench, Pune. The Original Application No. 80 of 2024 (WZ) has been filed by three Associations i.e. Scheduled Tribe Association of Sao Jose De Areal (Applicant No.1), Social Justice Forum of Sao Jose De Areal (Applicant No.2) and Raloi Residents Welfare Association of Sao Jose De Areal (Applicant No.3).

It is mainly prayed by the applicants that a direction may be issued to Respondent No.1 i.e. The Goa State Pollution Control Board to ensure that the Unit of Respondent No. 4 i.e. Goa Carbon Limited be permanently closed down or be relocated elsewhere in Industrial area and Respondent No.1 i.e. The Goa State Pollution Control Board be restrained from renewing the Consent to Operate dated 28/03/2019 or revoke any new Consent subsequently granted.

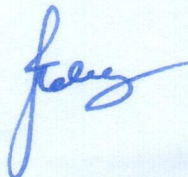
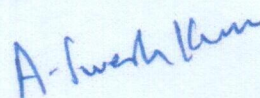
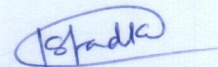
The Hon'ble National Green Tribunal through its Order has directed to constitute a Joint Committee comprising one member each of Goa State Pollution Control Board (GSPCB), The Chief Secretary, State of Goa and The Ministry of Environment, Forests and Climate Change (MoEF& CC), GSPCB being the nodal agency of the said Committee, with a direction that the Committee shall visit the spot after intimating the applicants the date of its visit to the spot. After visiting the spot, the Joint Committee will submit a report as to whether Respondent No. 4 i.e. Goa Carbon Limited has been granted all the Consents which were required to be obtained for setting up the industry and whether the conditions laid down therein have been complied with by them or not and if there is any non-compliance on the part of the Respondent No. 4 i.e. Goa Carbon Limited, amount of Environmental Damage Compensation (EDC) to be levied from the Respondent No. 4 i.e. Goa Carbon Limited and the corrective action may be proposed. Let the report of the Committee be submitted before The Hon'ble National Green Tribunal by The Goa State Pollution Control Board within a period of one month.

The matter is put up for next consideration on **18/07/2024**.

Formation of Joint Committee

Based on the O.A. No.80 of 2024 (WZ) the following members were nominated to conduct the Joint Inspection/meetings.

Sr.No.	Name of the official & Designation
1	Shri. Johnson Fernandes , Director, Department of Environment & Climate Change (Nominee of the Chief Secretary, Goa)
2	Dr. Shamila Monteiro , Member Secretary, Goa State Pollution Control Board.
3	Shri. Suresh Kumar Adapa , Scientist 'E', MoEF&CC, Regional Office, Bengaluru.
4	Smt. Jenica Sequeira , Scientist 'D', Goa State Pollution Control Board.
5	Smt. Nandan Prabhudessai , Assistant Environmental Engineer (AEE), (HO), Goa State Pollution Control Board
6	Shri. Keshav Fadke , Assistant Environmental Engineer (AEE), Goa State Pollution Control Board.
7	Smt. Edma Shet , Scientific Assistant (SA), Goa State Pollution Control Board
8	Shri. Sherwin da Costa , Junior Environmental Engineer (JEE), Goa State Pollution Control Board.

Background of M/s Goa Carbon Limited

Goa Carbon Limited is a public limited company and is in the business of the manufacture and marketing of Calcined Petroleum Coke and has an annual capacity of 1,00,000 TPA. The unit is located at Plot No. 66, 67, 68 & 75, St. Jose de Areal, Salcete - Goa


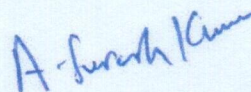
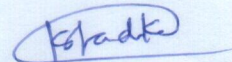
Certificates possessed by Goa Carbon Limited

1. **CERTIFICATE OF INCORPORATION – FORM I. R. (No. 76/G of 1967-68 dated 22/06/1967)** under the Companies Act, 1956 (No.1 of 1956) issued by The Registrar of Companies for Union Territories of Goa, Daman & Diu.
2. **CERTIFICATE FOR COMMENCEMENT OF BUSINESS – (No. 75/G of 1967-68 dated 22/06/1967)** under the Companies Act, 1956 issued by The Registrar of Companies for Union Territories of Goa, Daman & Diu.
3. **RENEWAL OF FACTORY LICENSE** issued by The Inspectorate of Factories and Boilers, Government of Goa under Rule 9 of The Factories Act, 1948 and the rules thereunder- **FORM 4** (Registration No: 165, License No: GOA/170 & NIC Code No.: 19209) valid for calendar year 2024 to 2028.
4. **RENEWAL OF CONSENT TO OPERATE AND AUTHORIZATION** under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 (i) of the Hazardous and other Wastes (Management and Transboundary Movement) Rules 2016, as amended thereafter issued by The Goa State Pollution Control Board (Ref No. 12/2024-PCB/2072562/R00014597 dated 03/04/2024 valid up to 31/03/2029)
5. **AUTHORIZATION FOR IMPORT OF RESTRICTED ITEMS** issued by Directorate General of Foreign Trade, Department of Commerce, Ministry of Commerce and industry, Government of India for import of Raw Petroleum Coke (RPC) valid up to 31/03/2025.
6. **NO OBJECTION CERTIFICATE** issued by Directorate of Fire & Emergency Services, Government of Goa (File No. DFES/FPNA/2024/30 dated 31/01/2024)

Manufacturing Process and Plant Layout

Calcination is a high temperature process for transforming the physical properties of raw petroleum coke. Sized petroleum coke is stored in silos and fed into a rotary kiln in controlled ratios. The calcination process raises the material temperatures in the kiln to around 1200 to 1260°C depending on the quality of raw cokes and specification of C P Coke desired.

The material flows in a counter direction to the temperature controlled hot gases fired from a kiln burner. During the radiation heat transfer process, the material comes across various reactive zones where it de-moisturises, devolatilises and stabilizes with improved crystalline structure. Operating parameters are controlled to impart the required crystal structure, density and electrical conductivity.

The **calcined coke** is first cooled by water quenching the red-hot material, and then further cooled by natural draft air as it tumbles through the length of the cooler, on its way to the conveyors leading to storage in the godown.

Run of the kiln (ROK) **calcined coke** silos are also sieved in various sizes as specified by customers.

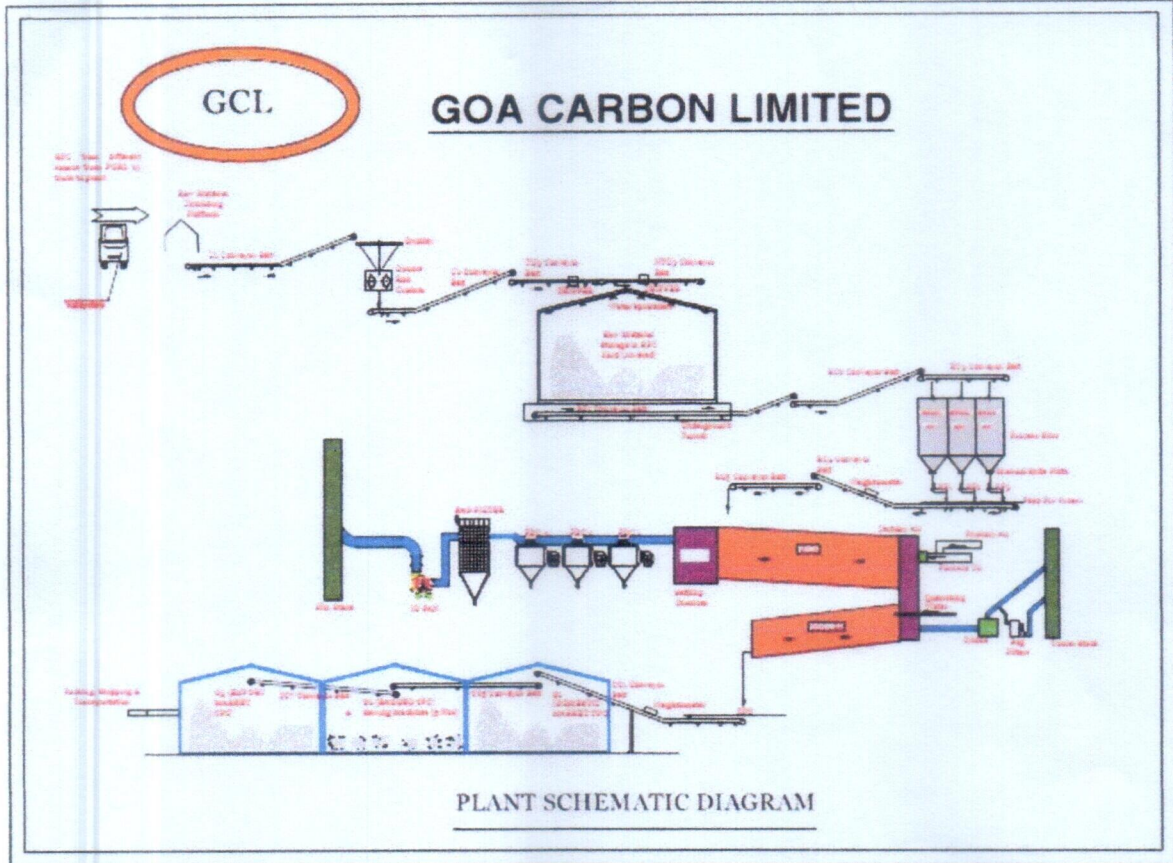


Image : Plant Schematic Diagram of M/s Goa Carbon Limited

Air Pollution Control Devices installed

The following are the Air Pollution Control Devices and Methods adopted by M/s Goa Carbon Limited:

1. Dust Extraction System
2. Bag Filters
3. Water Sprinklers
4. Automatic Sweeping Machine
5. Development of plantation around the Unit
6. Use of Low Sulphur High Speed Diesel (1.5 S MAX)

Dust Extraction System:

DES Systems (bag filters) have been installed for Kiln & Cooler. Motor capacity of Kiln bag filter is 180 HP & cooler is 40 HP.

Working:

During calcination process, flue gases generated from burning of RPC comes into the settling chamber where some unburnt carbons settle in the bottom of the chamber by gravity. Then all the gases sucked through the ducts of the FDC (Force draft cooler) by ID fan. There are 3 FDCs, FDC 1,2 & 3. Where cool air is supplied through SS & MS pipes to cool down the temperature of Flue gases from 1050-1100deg to 240 degrees.

At this temperature the flue gases are passed through the Bag filtration unit, separation of all the dust particles come along with the flue gases. The dust particle stuck around the filter bags & allows only clean gases to let out. Continuously cleaning of the bags are done by using jet of compressed air, and the dust material gets collected in the jumbo bags in the bottom hopper and shifted to godown. The dust collected is also rich in carbon 95% F.C. It is sold in the market comparatively in very low rate.

For Kiln:

There are 560 nos. of bags of 160 mm dia. Complied & 5500 mm long, imported woven fibre glass filter bags and thermal laminated on outer dust collection side of bag with acid resistance fabric finish.850 GSM (Grams per square meter)

For Cooler:

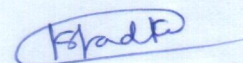
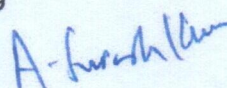
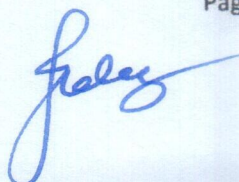
There are 210 nos. of bags of 155 mm dia. & 3660 mm long, imported woven fibre glass filter bags and thermal laminated on outer dust collection side of bag with acid resistance fabric finish.750 GSM (Grams per square meter)

The Unit has provided 22 nos. water sprinklers on the internal road towards the unloading area and approximately 104 water sprinklers (nozzles) in the RPC storage area. The Unit has provided wind breaker wall of approximately 12 meters height, along the western boundary measuring approximately 300 meters in length. Also, metal sheet enclosures are provided at the transfer points to reduce dust emissions during transfer. The conveyor belts are covered with hood and garden mesh.

Proceedings of the Inspection

Based on the O.A. No.80 of 2024 (WZ) the joint inspection was scheduled for 28/05/2024 and the intimation of the said inspection was served to the Applicants as directed by the NGT Order.

Dr. Shamila Monteiro (The Member Secretary, Goa State Pollution Control Board) could not participate in the site inspection, however a group of Senior Officers from the Pollution Control



Board represented the Board in the inspection. The Joint Committee assembled at the entrance of M/s Goa Carbon limited at approximately 10:45 am. The Committee introduced themselves to the members of the three Associations i.e. Scheduled Tribe Association of Sao Jose De Areal (Applicant No.1), Social Justice Forum of Sao Jose De Areal (Applicant No.2) and Ralloi Residents Welfare Association of Sao Jose De Areal (Applicant No.3) so as to understand the grievances faced by them. The Committee noted down the grievances described by the applicants. The Applicants also requested the Committee to be a part of the site inspection. However, initially the request was denied by the Committee in order to avoid any law-and-order situation inside the premises and also because it was not a mandate of the Order. However, the Committee later decided to allow one representative of each Association to be a part of the inspection in order to have transparency of the Inspection.

The following representatives of respective associations took part for the inspection:

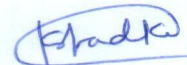
1. **Shri. Tonny Paul Fernandes** representing Social Justice Forum of Sao Jose De Areal.
2. **Shri. Sairaj K Naik** representing Ralloi Residents Welfare Association of Sao Jose De Areal.
3. **Shri. Pedro Castanha** representing Scheduled Tribe Association of Sao Jose De Areal.

The inspection commenced at approximately 11:25 am. First, the Committee along with the above-mentioned representatives gathered in the conference hall of the Unit where the representatives of Goa Carbon Limited gave a brief presentation of the activity of the plant along with the layout i.e. from raw material handling to the finished product. The Unit presented all the types of licenses it possesses to operate the plant. The Unit also presented extra measures it takes to reduce environmental pollution, the community connect it has with the locality, the beach clean-up drives it has undertaken and that M/s Goa Carbon had constituted 3rd party study through BITS Pilani in December 2021 to check and monitor the emissions patterns of SPM/ Particulate matter over a period of time and that the study has validated that the emissions are under prescribed norms. The Unit also presented that they conduct annual health checkups for all their workers (many of them who have been working for decades in the plant) on rotation basis. The Unit also presented the medical reports of the employees in front of the Committee and the 3 representatives and the reports did not show any adverse effects on their health condition. One such employee, **Shri. John Fernandes** aged 54 years who has been a part of the organisation for 34 years was physically presented in front of the committee and the 3 representatives to show the physical fitness of the employee.

Post presentation, the committee, the 3 representatives and the GCL representatives conducted a physical inspection of the factory as per layout shown in **Image 1** i.e. from Raw material handling to finished good handling.

Subsequent to the physical inspection, committee discussed with the 3 representatives of the respective associations to understand any shortcomings/ failures of the Unit or any specific area





that the committee has not visited. The shortcomings put forth by the 3 representatives are as follows: -

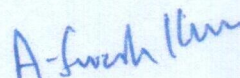
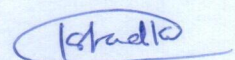
1. **Shri. Sairaj K Naik** pointed out that "the part of the plant was not in operation".
Action taken: - The above-mentioned representative was taken to whichever desired location he wants to see up to his satisfaction.
2. **Shri. Tonny Paul Fernandes** pointed out that "there was no raw material handling carried out"
Action taken: - It was explained to the above-mentioned representative that the raw material handling happens only as per shipment received at Mormugao Port Trust (MPT) as the Unit imports it Raw Material from Brazil, China, Indonesia, Kuwait, Malaysia, Netherlands, Oman, Spain, United Arab Emirates and USA. (may refer the **AUTHORIZATION FOR IMPORT OF RESTRICTED ITEMS** issued by Directorate General of Foreign Trade, Department of Commerce, Ministry of Commerce and industry, Government of India for import of Raw Petroleum Coke (RPC) valid up to 31/03/2025)
3. **Shri. Pedro Castanha** pointed out that "the finished product bagging area was not visited"
Action taken: - The committee, the 3 representatives and the GCL representatives did a physical inspection of the bagging area. The Unit also demonstrated the Bagging process to the committee and the 3 representatives.

Post inspection of the bagging area, the committee once again asked the 3 representatives whether any part of the industry was not covered by the committee. The 3 representatives agreed that the inspection in the factory was conducted up to their satisfaction and that the plant was in operation at the time of inspection. However, they requested to visit some residential houses within close vicinity that they wanted to show.

In view of the above, the committee decided to visit few neutral residences in order to avoid any fabrication of evidence within a radius of 1 km of the factory premises and the observation made are as follows:

- **Residence 1**

Address: H. No. 625, Igorjewaddo, Sao Jose de Areal
Name of the Owner: Shri. Miguel Escolante Fernandes
Distance from Factory premises: 213.2 m

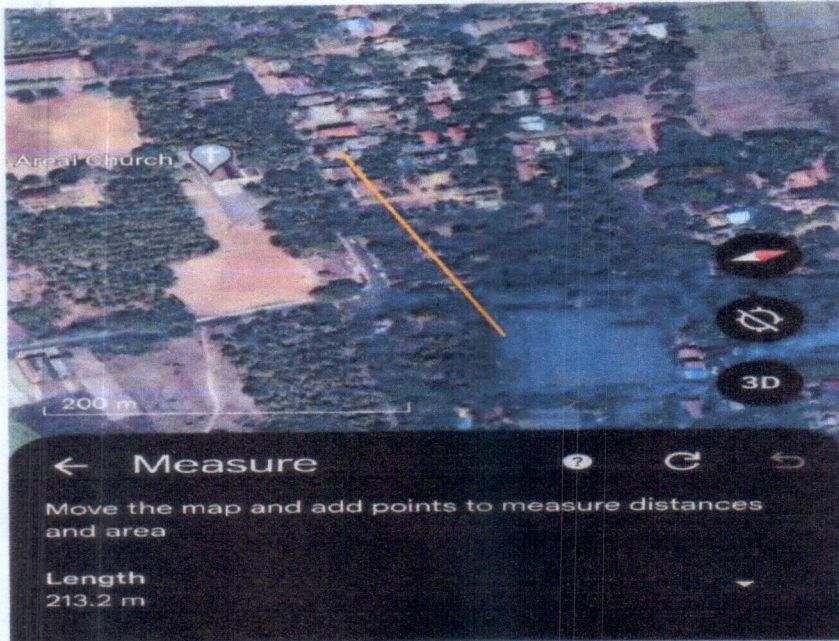


Image :Google Earth image showing the distance between **Residence 1** and factory Premises

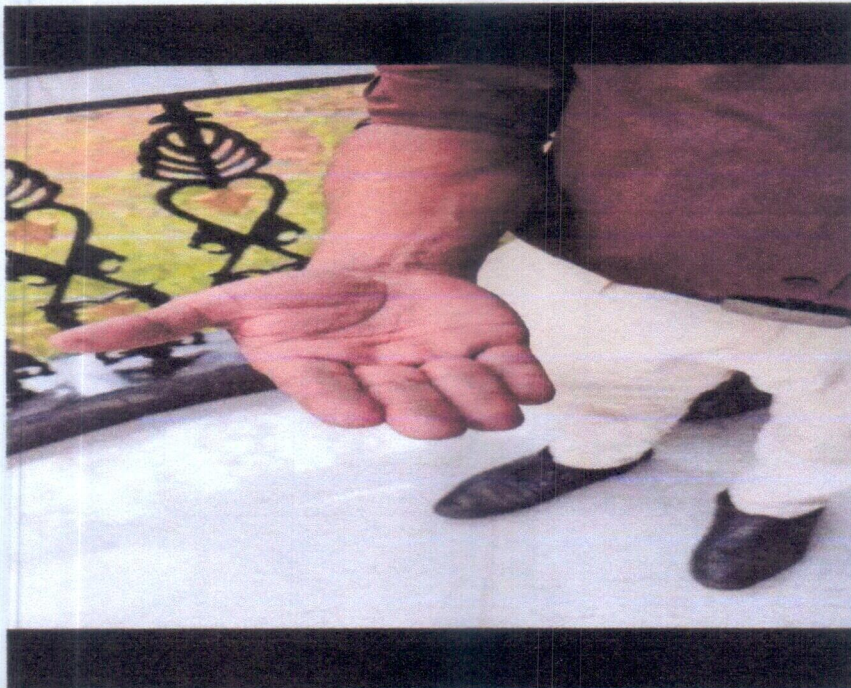


Image :photograph clicked after touching the floor of **Residence 1**

Jaleel

A-Surrah Khan

(Ishack)

Conclusion: It was observed by the committee that there were **No** traces of RPC or CPC powder (Black in colour) on the floor of **Residence 1** considering the plant was in operation.

▪ **Residence 2**

Address: H. No. 584, Igorjewaddo, Sao Jose de Areal

Name of the Owner: Shri. Piedade Travasso

Distance from Factory premises: 482.54 m

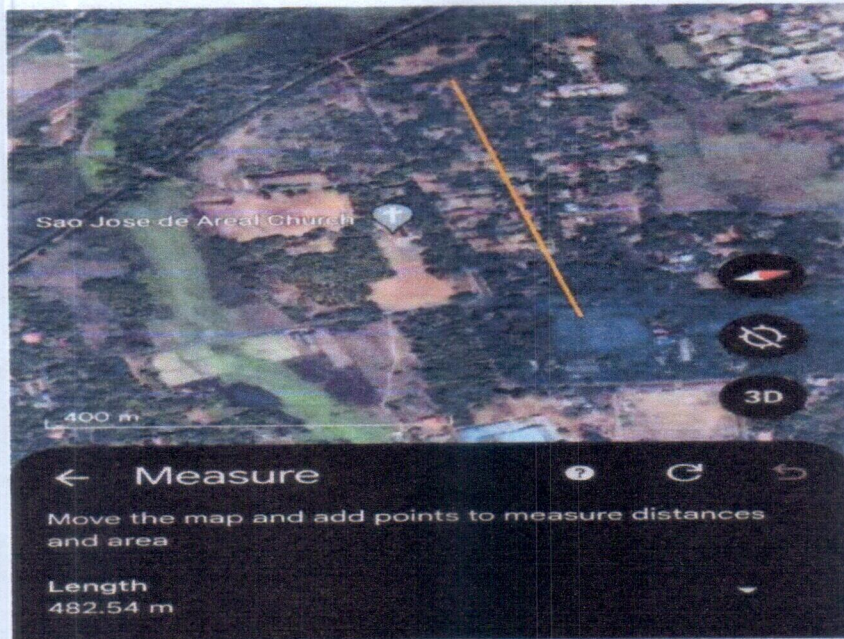


Image :Google Earth image showing the distance between **Residence 2** and factory Premises

Jalaz

A. Suresh Kumar

K. S. K. K.

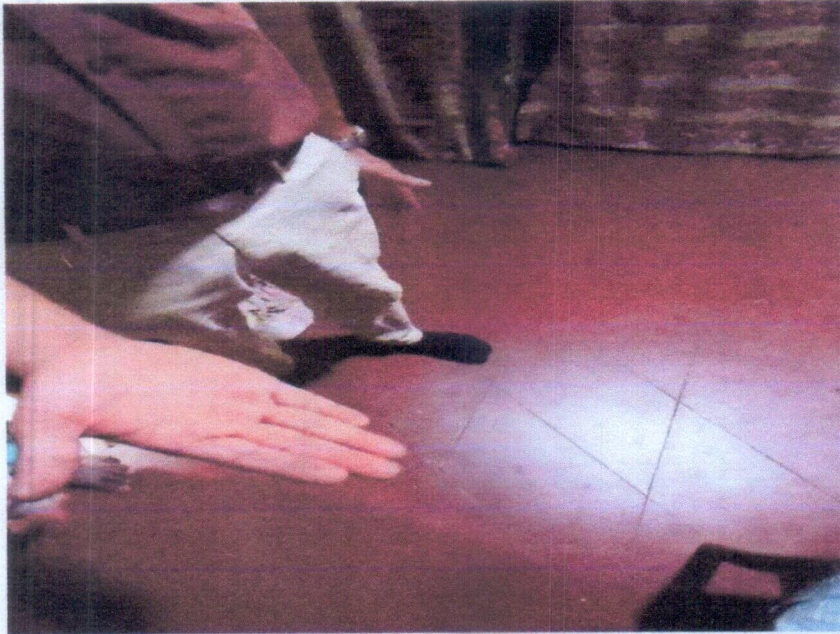


Image : photograph clicked after touching the floor of **Residence 2**

Conclusion: It was observed by the committee that there were **No** traces of RPC or CPC powder (Black in colour) on the floor of **Residence 2** considering the plant was in operation.

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Shadki

COMPLIANCE TO THE CONDITIONS OF THE RENEWAL OF CONSENT TO OPERATE ISSUED TO -

M/S. GOA CARBON LTD.

Bearing No. 12/2024-PCB/2072562/R0001459 Date: 03/04/2024

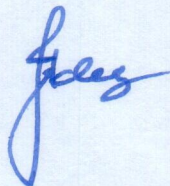
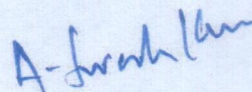
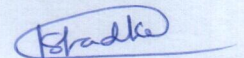
Sr.No.	Conditions	Compliance	Status
1.	The domestic waste-water shall be treated in a properly designed septic tank and discharged on land for Percolation through soak pit of adequate size within the Factory premises. The unit Should empty septic tank and Soak pit periodically through Night soil tankers for safe Disposal and submit the copies Of the receipts to the Board on Regular basis.	Unit has provided six septic tanks and soak pits. The same are periodically cleaned through night soil tankers.	Complied.
2.	The unit shall ensure that all Storm water in the premises is Treated in the settling pond Connected to garland drains before discharging outside Premises.	Unit has provided settling Pond for the Storm water Drain.	Complied.
3.	A good house-keeping shall be Maintained within the unit premises. All pipes, valves and Drains shall be maintained in leak-proof condition. Floor Washings shall be maintained to the effluent collection System only and shall not be Allowed to find way in open areas.	Unit has improved the Housekeeping, however same needs further improvement in finished product packaging area. Unit has a road sweeping machine, which is operated within the Premises. Also housekeeping Laborers are engaged.	-----

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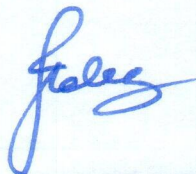
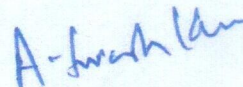
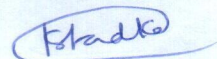
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4.	The unit should implement rain water harvesting and ground water re-charge measures in consultation and approval of the Water Resource Department, Govt. of Goa and Directorate of Industries, Trade and Commerce, Govt. of Goa.	Unit has provided two rain water recharge pits near the administrative office and near RPC Yard.	Complied.
5.	The unit shall maintain and operate air pollution control system of adequate capacity for the following equipments.	The exhaust gases from the kiln are passed through settling chamber, dust extraction system (DES) and baghouse and are passed through 30 meters stack. The flue gases from the cooler are passed through bag filters and Stack of 25 meters height.	Complied.
6.	The unit should carryout emission monitoring from the stacks connected to D.G.set once in a year and stack connected to kiln once a month from a laboratory recognized by Ministry of Environment and Forest under the Environment Protection Act, 1986 and shall be submitted to this Board.	Unit conducts stack monitoring of the DG set and Kiln stack and cooler stack as per the frequency specified through MoEF recognized laboratory. The results are within permissible limits. In addition, The Board also receives online Particulate matter data from the dust analyzer connected to the rotary kiln stack. The online PM values are found to be within limits from January 2024 to May 2024, except at one instance, wherein the exceedence is recorded on 28/03/2024 at 4.15 p.m. measuring 201.8 mg/Nm ³ as against the permissible limit of 150 mg/Nm ³ .	Complied.
7.	The unit shall take adequate Measures for control of noise levels from its own sources Within the premises in respect of noise.	Unit has provided enclosures for DG set, wind breaker walls provided at the western boundary. Unit carries out noise monitoring within the premises.	Complied.
8.	The Unit shall carryout	The unit carries out Ambient Air	Complied.

	Ambient Air Quality Monitoring once a month from a laboratory recognized by MOEF under the Environment Protection Act., 1986 and the report should be submitted to the Board by the 15th of the subsequent months.	Quality Monitoring through MOEF recognized laboratory and the results are submitted as per the frequency specified in the consent. The parameters are within permissible limits.	
9.	The occupier shall maintain the records for collection, storage and disposal of hazardous waste in Form 3 of as per Hazardous And Other Wastes(Management & Movement)Rules 2016.	Unit has maintained the form 3 of used oil generated. Used oil is disposed through authorized recycler.	Complied.
10.	The unit shall submit annual returns in prescribed format to the Board for financial year by 30th June of every year for the previous financial year.	The unit submits form V for the financial year and form IV of hazardous waste returns.	Complied.
11.	The manifest shall be endorsed by the dispatcher, transporter and receiver of hazardous wastes. The endorsed copy shall be furnished to the Goa State Pollution Control Board.	The Manifest copies are submitted when the material is dispatched through the authorized recycler.	Complied.
12.	Under no circumstances the hazardous waste shall be disposed of to unauthorized facilities.	The hazardous wastes are disposed through the authorized agencies.	Complied.
13.	The unit shall put up an online board (minimum size 6x4 Feet) at prominent location near the main gate providing details as follows in English and Konkani languages:	The unit has provided fixed metallic board next to the main entrance.	-----
14.	The unit should maintain their coke handling activities and maintain and operate adequate and effective Air pollution Control Systems in rotary kiln	The exhaust gases from the kiln are passed through settling chamber, dust extraction system (DES) and bag house and are passed Through 30 meters stack.	Complied.

	stack.		
15.	<p>The unit should maintain the Use enclosures (detachable, if required) on conveyors or Chutes and telescoping arm loaders, hoppers to reduce spillage and dust; also, Minimize the distance between The working area and trucks Being loaded/material stocked To reduce the area exposed to Fugitive dust generation and area that has to be swept / cleaned. Free fall of Material should be prevented.</p>	<p>Unit has provided 22 nos. Water sprinklers on the internal Road towards unloading area and approx 112 water sprinklers (nozzles) in the RPC storage area & unloading area. PP shall provide water sprinklers for the entire RPC handling area. Unit has Provided windbreaker wall Of approx.11 meters along the eastern & western boundary approx 300 meters length. The Conveyor belts are covered With hood and garden mesh at majority of the length of the conveyor. The conveyor belt was not covered at one of the places as shown in the following photograph:</p>  <p>PP shall take steps to cover the conveyor at the above shown location.</p> <p>Also metal sheet enclosures Are provided at the transfer points to reduce dust emissions during transfer. Unit has hired an road Sweeping machine, operation Within the premises.</p>	-----
16.	<p>The unit should cover the stock pile within premises Temporarily with an impervious tarpaulin, adequately anchored, as soon as possible after loading / Unloading and adjusting the</p>	<p>At the time of inspection NO RPC was stacked in Open plot; all RPC was stored Inside the godown, in closed Stock shed.</p>	Complied.

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A-Sunshin

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	Cover as material is removed from the pile there by ensuring Maximum closure of the pile and minimum exposure to Existing weather conditions.		
17.	The unit should to Maintain Pile size/volume to maximum Height specified by the Board Or consistent with customer demand, transportation Schedules and materials cost, Whichever is lesser to reduce the amount of material Exposed to weather conditions; And for the shortest time as possible. Dry cargo pile Heights should remain low, to minimize material from Becoming air borne.	The RPC is stocked in the Closed shed provided with sprinklers. Hence, the said condition is presently not applicable.	Complied.
18.	The unit should maintain the Storm water / run-off around the stock pile with drainage channels or impermeable perimeter, tyre washing areas, Channeling the runoff into Adequately sized and suitably Lined holding tanks prior to Disposal post treatment and compliance to stipulated Standards prior to discharge. Periodically clean the drainage Channels and properly dispose of the sediment as per Applicable regulations. Storm drainage channels/holding tanks should not be discharged	Unit has provided settling pits For the storm water drains and the same are periodically cleaned.	Complied.

Jones

A-Suntharan

Etude

	Directly into outside surfaces or areas or surface waters without prior Consent of the Board and compliance Verification.	
19.	The unit should maintain the wash down or spray the underside and tires of trucks/other vehicles suitably bermed allotted areas transporting dry bulk materials / otherwise and completely seal the cargo, Preferably with the use of Specialized sealed containers, Prior to exiting on to public Roads to reduce dust transfer And fugitive emissions.	The raw RPC is transported Through trucks. The same are Covered with tarpaulin. Unit Has provided pipeline with Manual washing at the rear side of the unloading area and sealing is made for RPC trucks.
20.	The unit should maintain and operate the dust suppression systems, bag house, screw conveyors and Vacuum collecting equipment wherever practical in the handling and further retention of dispersion of fine, granular or powdery material.	Unit has provided 22 nos Water sprinkler on the internal Road towards unloading area and approx 112 water sprinklers (nozzles) in the RPC storage area. Unit has Provided windbreaker wall Of approx. 11 meters along the eastern & western boundary approx 300 meters length. The conveyor belts are covered With hood and garden mesh. Also metal sheet enclosures Are provided at the transfer Points to reduce dust emissions during transfer. Unit has hired road sweeping machine, operation Within the premises.

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<p>21.</p>	<p>The unit shall operate and Maintain the Dust Extinction Moisture (DEM) for the various cargoes handles as Applicable and ensure that all powder form of material (directly or indirectly derived) brought into, stockpiled and unloaded/loaded is at, or above, the Dust Extinction Moisture (DEM) for that Particular material type. DEM, as well as any specific characteristics such as Hydrophobicity which would Indicate that practices relying On water application would be Effective enough or ineffective. Both the DEM and the hydrophobicity of coke or Other powder form of material (directly or indirectly derived) Should be determined and the Reports of the same should be submitted to the Board including their respective Material (or mineral) characteristics of the bulk material.</p>	<p>Unit has provided 22nos Water sprinklers on the internal Road towards unloading area and approx 112 water sprinklers (nozzles) in the RPC storage area. Unit has provided windbreaker wall Of approx.11 meters along the Eastern & western boundary approx 300 mters length. It was informed that moisture Content is maintained by Water sprinkling in the RPC Storage yard.</p>	<p>Complied.</p>
<p>22.</p>	<p>The unit should use Water cannons/sprinklers/ mist Ejectors on all stockpile areas To maintain the Dust Extinction Moisture (DEM)of the product and prevent dust emissions associated with Wind erosion. Use of low-volume misting nozzles Directed along the raw</p>	<p>Unit has provided closed shed For storage of raw pet coke (RPC).Unit has provided 22 Nos. water sprinklers on the internal road towards Unloading area and approx 112 water sprinklers (nozzles) In the RPC storage area. Unit Has provided wind breaker Wall of approx. 11meters along The western boundary approx 300</p>	<p>Complied.</p>

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	<p>material stream. Use of water addition Nozzles in conjunction with the Low volume misting nozzles Where the raw material is not At DEM.</p>	<p>meters length. The Conveyor belts are covered With hood and garden mesh. Also metal sheet enclosures Are provided at the transfer points to reduce dust emissions during transfer. Unit has hired an road Sweeping machine, operation Within the premises.</p>	
<p>23.</p>	<p>The unit should explore the use of total or partly retractable permanent enclosures for stock pile handling areas, during loading / unloading or installation of an additional windscreen (height to be established keeping in mind, the elevation height of The nearest tallest residence/And the structural stability of the same) adjacent to the road adjoining the unit and the residences, whichever is feasible, for control of dust generation with extraction to suitable bag or appropriate filters to minimize fugitive dust emissions, thereby controlling material loss.</p>	<p>Unit has provided closed shed For storage of raw pet coke (RPC).Unit has provided 22 Nos. water sprinklers on the internal road towards Unloading area and approx 112 water sprinklers (nozzles) In the RPC storage area. Unit Has provided wind-breaking Wall of approx 11 meters along The western boundary approx 300 meters length. The conveyor belts are covered with hood and garden mesh. Also metal sheet enclosures are provided at the transfer points to reduce dust emissions during transfer. Unit has hired road sweeping machine, operation within the premises. During the site inspection, an opening was observed in the raw material storage yard.</p> <div style="text-align: center;"> </div> <p>PP submitted that it is not feasible practically to cover the shed due to</p>	<p>-----</p>

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		operational issues.	
24.	The unit should consider predominant wind patterns When stock piling, avoiding dry and windy conditions Where possible. Spray Stockpiles immediately prior to strong wind events or dry Weather conditions.	Unit has provided closed shed For storage of raw pet coke (RPC).Unit has provided 22 Nos. water sprinkler in the internal road towards unloading area and approx 112 water sprinklers (nozzles) In the RPC storage area. Unit Has provided windbreaker Wall of approx 11 meters along The Eastern & western boundary approx 300 meters length. The Conveyor belts are covered With hood and garden mesh. Also metal sheet enclosures Are provided at the transfer points to reduce dust emissions during transfer. Unit has hired road Sweeping machine, operation Within the premises. It was informed that the said conditions will be more applicable to port area.	Complied.
25.	The unit should remove materials from the bottom of piles to minimize dust re-suspension.	The RPC is stacked in closed shed and sprinklers arrangements are provided. Also the RPC is transferred through underground conveyor belt in the closed RPC shed.	Complied.
26.	The unit should regularly vacuum clean the docks, and handling areas, trucks, rail storage areas, and paved roadway surfaces.	Unit has provided labourers for cleaning the internal roads. Also unit has deployed road sweeping machine. The same is operated within the premises on the internal road.	Complied.

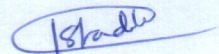
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27.	All roads/handling/storage areas within premises are regularly cleaned and maintained (including truck routes) on a daily basis.	Unit has provided labourers for Cleaning the internal roads. Also unit has hired road Sweeping machine. The same is operated within the premises. All internal roads are repaired to get a smooth surface which is helping in removal of fugitive dust by road cleaning/sweeping machine.	Complied.
28.	Provide details of water source for sprinklers and provide flow meters to the sprinkling systems line and submit daily readings of input and output at the end of the month to the Board.	Unit submits the water details every month.	Complied.
29.	The unit shall improve the operation of Air Pollution control, Devices attached to the stack to ensure that the SO ₂ limits are within permissible limits.	The exhaust gases from the kiln are passed through settling chamber, dust extraction system (DES) and bag house and are passed through 30 meters stack. The flue gases from the cooler stack are passed through bagfilters and stack of 25meters height. The dust particles collected in bag house are Stored within the premises. The SO ₂ levels in the stack emissions were monitored regularly through MoEF&CC recognized laboratory. As per the monitoring data the SO ₂ levels found to be compliant.	Complied.
30.	Green belt (minimum ht. of 5mtrs) to be enhanced along all boundary perimeter to serve as a secondary barrier.	Unit has maintained the greenbelt of approx 50-60% of the plant area. Plantation was observed all along the boundary of the project.	Complied.





31.	Noise sources in GCL include Cargo handling, Truck movement, rotary kiln and loading/unloading activities to be, controlled and regulated within defined time frames keeping in view the distribution of population density.	Unit carries out noise monitoring. It was mentioned that truck movement is restricted only during the daytime. The noise levels were monitored regularly through MoEF&CC recognized laboratory. As per the monitoring data, the noise levels found to be within limits.	Complied.
32.	Permanently stabilize entire work areas / transportation routes to minimize fugitive dust emissions within three months from date of order.	Internal roads used for movement is tarred.	Complied.
33.	Improve Housekeeping in and around GCL, especially along its transportation routes.	Unit has provided labourers for cleaning the internal roads. Also unit has deployed road sweeping machine. The same is operated within the premises. PP shall regularly monitor the cleanliness of the transportation route of material to and from the project and take steps to clear any material falling on the road due to transportation of raw material and finished products.	-----
34.	To enhance handling capacities only after remedial measures have been successfully adopted, implemented and verified.	Unit has not requested for increase in handling capacity.	Complied.



A. Sivakumar

(Signature)

35.	To control the overall loading/unloading operations and authorize suspending unloading and handling operations during unfavourable weather conditions (precipitation, wind) that could, otherwise, increase run-off or fugitive emissions, restrict noise generating activities at night.	It is informed that during any unfavourable conditions the plant shuts down its operations.	PP agreed upon.
36.	The unit shall control the noise from the operation of the Air Pollution Control Devices to comply to the standards as specified at clause No 4 (viii) of the consent.	Unit conducts noise monitoring within the premises at 8 locations. The analysis report indicates that the parameters are within permissible limits.	Complied.
37.	Unit has to install continuous online stack monitoring system for the Kiln stack and Cooler stack within 3 months of issue of this consent and connect the same to Board.	Unit has installed continuous online stack monitoring system for the Kiln stack and Cooler stack and the same is connected to the Board.	Complied.
38.	Unit has to ensure that RPC has to be stored in the closed shed and no stacking outside the shed.	At the time of Inspection, no RPC was stacked in open plot, all RPC was stored inside the godown, in closed stock shed.	Complied.
39.	Unit has to install energy meter for the Air Pollution control equipment and maintain the logbook of the same.	Unit has provided energy meter for Air Pollution Control Device and the logbook of the daily readings is maintained.	Complied.
40.	Ambient Air Quality Monitoring has to be carried out on all the four location once in every month.	Unit conducts Ambient Air Quality Monitoring at four locations once every month from MoEF recognized laboratory. The latest reports reveal that the parameters are within permissible limits.	Complied.



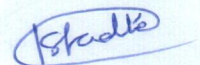




Image : Onsite Photograph of Bag Filter Unit installed for Cooler.



Image : Onsite Photograph of Dust Extraction System (DES).

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Image : Onsite Photograph of Bag Filter Unit installed for Kiln.

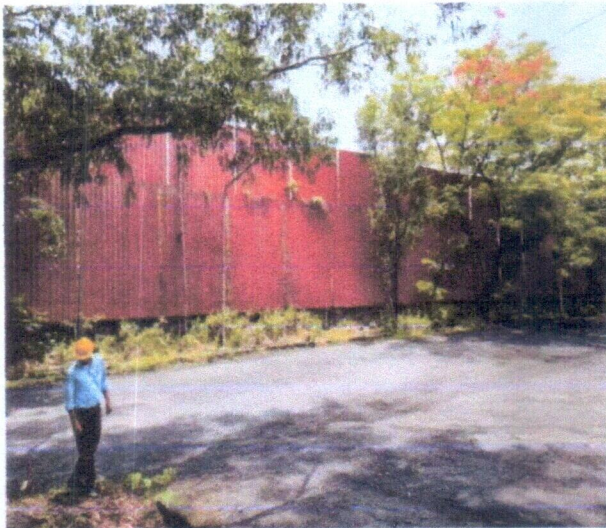


Image : Onsite Photograph of wind breaking barriers of approximately 12 meters height installed at Raw Material Handling Area.

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Image : Onsite Photograph of the Automatic sweeping machine purchased by M/s Goa Carbon Limited.



Image : Google earth image of the green belt cover within and outside the factory premises.

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A. Suresh Kumar

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Image : Onsite Photograph of the water sprinklers in operation for suppression of dust along the raw material handling route within the premises.



Image : Onsite Photograph of fruit bearing trees found within the premises of the factory

Jaleel

A-Suresh Kumar

K. Radha



Image : photograph showing the course of physical inspection.



Image : photograph showing the course of physical inspection.

Gray

A. Ibrahim Khan

Elhadji

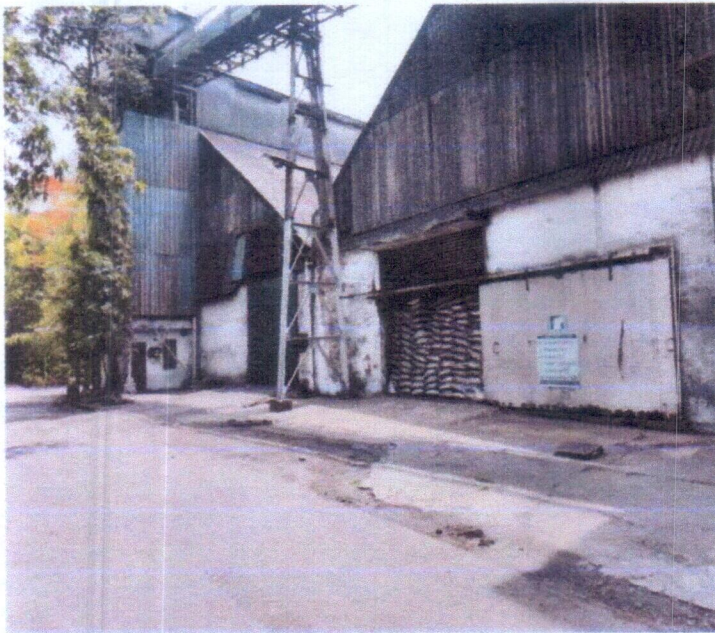


Image : photograph showing the course of physical inspection.



Image : photographs showing the course of physical inspection.

Jones

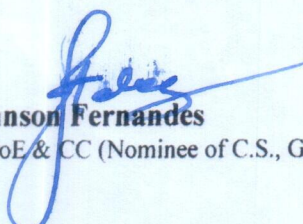
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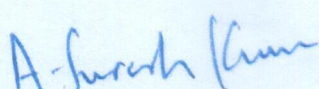
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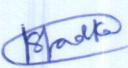
SCOPE FOR IMPROVEMENT:

Based on the observations made during inspection, following steps could be taken to further enhance the performance in terms of environmental compliance:

1. The unit needs to take up regular cleaning of the internal premises to avoid possibility of any fugitive dust emitting.
2. The drains need to be regularly cleaned and settling ponds to be de-silted before every monsoon.
3. Overall housekeeping needs to be improved.
4. The spillages at raw material storage shed and final product bagging shed to be timely handled.
5. The conveyor belt covers needs to be periodically checked and no open belt spaces to be allowed.
6. Sufficient lighting and ventilation needs to be provided in the product bagging shed in order to improve performance.
7. Additional mist sprinklers needs to be provided at Raw material unloading area, periphery of Raw material storage shed and on the periphery of product bagging shed in order to avoid any fugitive dust emission during handling.
8. PP shall install one continuous ambient air quality monitoring station in the nearby residential area outside the plant premises for continuous monitoring of ambient air quality in the surrounding residential area. Preferably in the land where the Government Primary School exists, the ambient air quality levels shall be continuously displayed to public. The system shall be regularly maintained and calibrated through authorised agencies.


Shri. Johnson Fernandes
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Shri. Suresh Kumar Adapa
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Mr. Keshav Fadke
Assistant Environment Engineer, GSPCB (Nominee of Member Secretary, GSPCB)