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 **SHREE JHARKHAND CEMENT PLANT**
(A UNIT OF SHREE CEMENT LTD.)

Vill : Hansda-Burudih, Dist : Seraikela Kharsawan, Jharkhand 833220



SCL/Jharkhand/Env. Statement/2021-22/12

Date: 02.09.2021

To,
The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division Building (Ground Floor),
H.E.C. Dhurwa, Ranchi – 834004

Sub: Submission of Environmental Statement of M/s. Shree Jharkhand Cement Plant (A unit of Shree Cement Limited) for the period from April 2020 to March 2021 under Environmental Protection Act, 1986.

Ref: CTO No.– JSPCB/HO/RNC/CTO – 6972715/2020/210; dated 22/01/2020.

Dear Sir,

With reference to the above subject and referred CTO letter, we are submitting herewith the Environmental Statement (in form- V) as per Rule 14 of EP Act 1986 for the period from April, 2020 to March, 2021 for Shree Jharkhand Cement Plant (A unit of Shree Cement Limited) located near Village – Hansda, PO – Burudih, Dist. – Saraikela-Kharsawan, Jharkhand.

Submitted for your kind information and record please.

Thanking you,
Yours faithfully,
For M/s. Shree Jharkhand Cement Plant (A unit of Shree Cement Ltd.)


Ashok Kumar
AGM (Operations)

CC:

1. The Additional Principal Chief Conservator of Forests (APCCF),
Ministry of Environment, Forest and Climate Change,
Regional Office (Ranchi), Bungalow No. A-2, Shyamali Colony, Ranchi – 834002
2. The Regional Officer, JSPCB,
Regional office cum laboratory,
M.15, New Housing Colony, Adityapur, Jamshedpur – 831013

JAIPUR OFFICE : SB-187, Opp. Rajasthan University, JLN Marg, Jaipur 302 015
Phone : 0141 6611200, 6611204, Fax : 0141 6612219
NEW DELHI OFFICE : 122-123, Hans Bhawan, 1, Bahadurshah Zafar Marg, New Delhi 110 002
Phone : 01123370828, 23379218, 23370776, Fax : 011 23370499
CORP. OFFICE : 21, Strand Road, Kolkata 700 001, Phone : 033 22309601-4, Fax : 033 22434226

ENVIRONMENTAL STATEMENT
M/s Shree Jharkhand Cement Plant (A Unit of Shree Cement Limited)
Period from April 2020 to March 2021
FORM – V
(See Rule-14)

PART – A

| | | |
|----|---|--|
| 1. | Name and address of the Owner / Occupier of the Industry operation or process | Shree Jharkhand Cement Plant (A Unit of Shree Cement Limited) Village – Hansda, PO – Burudih, Dist. – Saraikela-Kharsawan, Jharkhand – 833210 |
| 2. | Industry Category Primary (S.T.C. Code) Secondary (S.T.C. Code) | Red Category |
| 3. | Production Capacity | 2.5 Million TPA Cement |
| 4. | Year of Establishment | 2019 |
| 5. | Date of the last Environmental Statement Submitted | 24.08.2020 |

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(I) WATER CONSUMPTION

Process : Nil (As plant is based on dry process Technology)
 Industrial : 24795 KL
 Domestic & Construction : 35352 KL

| Name of Product | Process Water Consumption per Unit of Product Output | |
|-----------------|--|---------------------------------------|
| | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| Cement | 0.026 KL/MT of Cement | 0.015 KL/MT of Cement |

(II) (a) RAW MATERIAL CONSUMPTION (CEMENT PLANT)

| Name of Raw Material Consume | Name of Product | Consumption of Raw Material Per Unit of Output (Cement) (Metric Tons) | |
|------------------------------|-----------------|---|---------------------------------------|
| | | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| 1. Clinker | Cement | 0.518 | 0.488 |
| 2. Gypsum | | 0.089 | 0.081 |
| 3. Fly Ash | | 0.283 | 0.250 |
| 4. Slag | | 0.110 | 0.181 |

(II) (b) RAW MATERIAL CONSUMPTION (HAG)

| Name of Raw Material Consume | Name of Product | Consumption of Raw Material Per Unit of Output (Metric Tons) | |
|------------------------------|-----------------|--|---------------------------------------|
| | | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| Fuel / Coal | Heat | 0.009 | 0.008 |

(II) (c) RAW MATERIAL CONSUMPTION (D.G.Set)

| Name of Raw Material Consume | Name of Product | Consumption of Raw Material Per Unit of Output (Ltrs/KWh) | |
|------------------------------|-----------------|---|---------------------------------------|
| | | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| Diesel | Power | 0.440 | 0.409 |

(III) POWER CONSUMPTION (KWH/T OF Cement):

| During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
|--|---------------------------------------|
| 41.12 | 33.65 |

(IV) TOTAL CEMENT PRODUCTION (MT):

| During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
|--|---------------------------------------|
| 572944 | 1601977 |

(V) TOTAL D.G. POWER PRODUCTION (KWh):

| During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
|--|---------------------------------------|
| 2726 | 979 |

PART – C

DISCHARGED TO ENVIRONMENTAL / UNIT OF OUTPUT

| Pollutants | Quantity of Pollutants Discharged (Mass/Day) | Concentration of Pollutants in Discharge (Mass/Value) | Percentage of variation from prescribed standard with reasons |
|------------|---|--|---|
| (a) Water | No waste water discharged outside the plant premises. | The plant is being operated on dry process technology and therefore no liquid effluent is generated from the cement plant. Waste water generated from office toilets and canteen is being treated through Sewage Treatment Plant (STP) and soak pit via septic tank. The STP treated water is being utilized in horticulture activities. | |
| (b) Air | 16.24 kg/Day | Please refer Annexure – 1 & 2 | |
| (c) Noise | | Please refer Annexure – 3 | |

PART – D

HAZARDOUS WASTE

(As specified under Hazardous Wastes (Management, Handling & Trans boundary Movement Rule, 2016)

| Hazardous Waste | Total Quantity (Ltrs.) | |
|---|--|---------------------------------------|
| | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| a) From Process (Cement manufacturing is based on “Dry Process” No Hazardous waste is generated from the process except used oil which is drained from Machinery / Equipments) | No Hazardous waste has been generated. | |
| (b) From Pollution Control Facilities | | |

PART – E

SOLID WASTE

| | | Total Quantity | |
|-----|--|--|--|
| | | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| (a) | From Process | N.A. | N.A. |
| (b) | From Pollution Control Facility | Dust collected in the bag house and bag filters are recycled back into the system. | Dust collected in the bag house and bag filters are recycled back into the system. |
| (c) | 1. Quantity rejected or re- utilized within the unit | 100% | 100% |
| | 2. Sold | Nil | Nil |
| | 3. Disposed | Nil | Nil |

PART – F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both the categories of wastes:

Hazardous Wastes

Cement manufacturing is based on “Dry Process”. No Hazardous waste is generated from the process except used oil which is drained from Machineries / Equipments.

Battery Wastes:

| Total Battery Waste Quantity | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
|------------------------------|---|--|
| | Nil | Nil |

Bio-Medical Wastes

| | Bio-Medical Waste Quantity (Kg) as per Color Coding | | | |
|--|--|-------|-------|-------|
| | Yellow | Red | White | Blue |
| During Previous Financial Year 2019-20 | No Bio-Medical Waste has been generated during the financial year. | | | |
| During Current Financial Year 2020-21 | 0.635 | 1.325 | 0 | 0.885 |

E- Wastes:

| | Total Quantity | |
|---------------------------------|---|--|
| | During Previous Financial Year 2019-20 | During Current Financial Year 2020-21 |
| From Process | Nil | Nil |
| From Pollution Control Facility | Nil | Nil |

Solid Wastes: - N.A.

PART – G

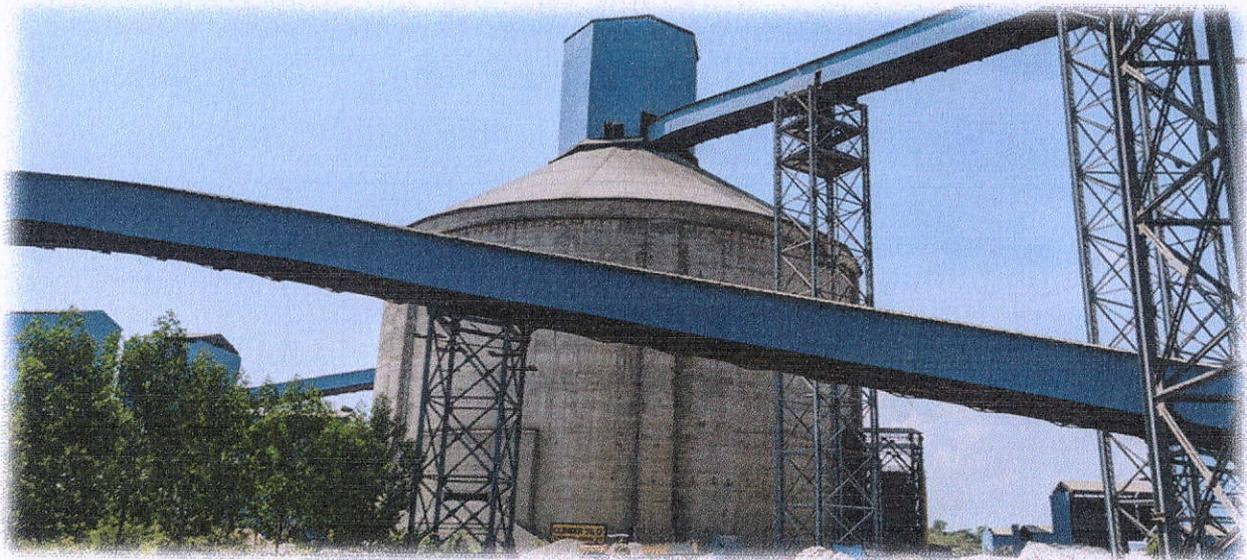
IMPACT OF THE POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON THE COST OF PRODUCTION

M/s Shree Jharkhand Cement Plant (A Unit of Shree Cement Limited) is a clinker grinding unit and is operated on dry process technology, which is cost effective and environmentally clean technology. The advantage of roller press for pre grinding of clinker is an energy conservation process. The stack emissions from the plant are controlled by equipment like Bag Houses and 57 number of Bag Filters installed at various material transfer points to clean the process and arrest the fugitive emissions. The particulate matter collected in the pollution control equipment is recycled in process and neutralizing the cost of operation of pollution control equipments and hence no cost impact on the production cost. Further fly ash and slag are also being utilized in the production of PPC & PSC cement, thus eliminating the harmful impacts on environment.



(Image Showing Baghouse of Cement Mill)

Moreover, to control the dust nuisance emission effectively, M/s Shree Jharkhand Cement Plant has constructed concrete silos and covered yard to store raw materials and end product.



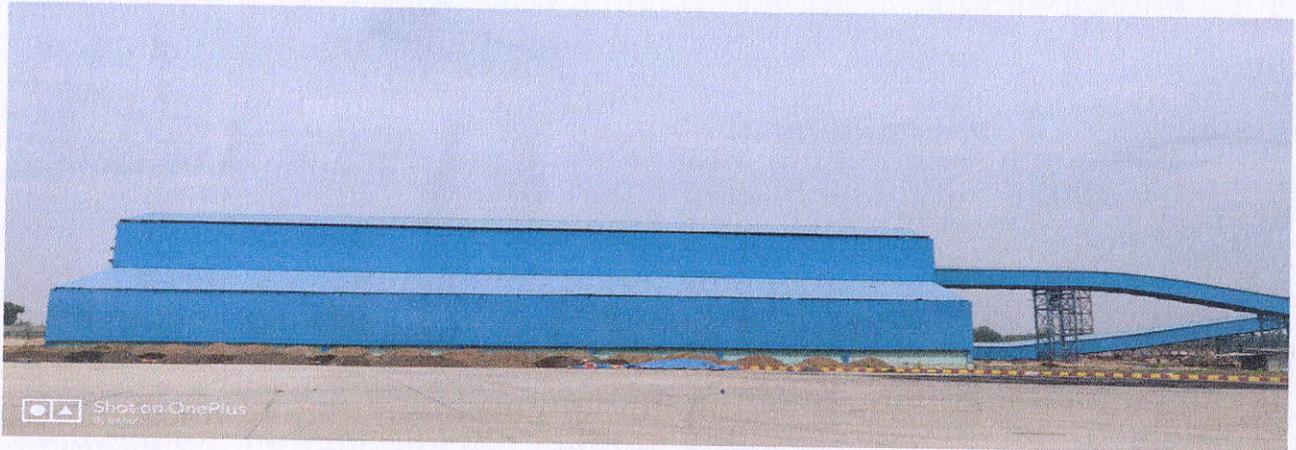
(Clinker Silo)



(Cement Silo-1)

(Cement Silo-2)

(Fly Ash Silo)



(Gypsum Yard)

PART – H

ADDITIONAL MEASURES / INVESTMENTS PROPOSAL FOR ENVIRONMENT PROTECTION INCLUDING ABATEMENT OF POLLUTION

Annual recurring cost towards the environmental protection measures for the FY 2020-21 is Rs.1.02 Cr. Approximately. In the FY 2021-22, plan to dense the existing green belt with a minimum 3000 numbers of tree plantation.

Green belt development and tree plantation is our ongoing activity within the plant area and outside of the area. Every year plantation activities are being done to dense the bio-diversity of the area. Till 31st March, 2021, green belt has been developed in 37.2 acres (33.8%). We have planted different type of forest plant species like Mangifera indica, Azadiracta indica, Dalbergia sissoo, Syzygium cumini, Millettia pinnata, Anacardium occidentale, Roystonia regia, Albizia lebbeck, Delonix regia, Mimusops elengi etc.



(Plantation inside plant premises)

PART – I

ANY OTHER PARTICULATES FOR IMPROVING THE QUALITY OF ENVIRONMENT.

1. We have full-fledged Environment Department for monitoring and ensure maintenance of pollution control equipment and for Green Belt development.
2. House-keeping of the plant area is being maintained in perfect order. To control fugitive dust nuisance two number of vacuum sweeping & cleaning machine has been engaged.
3. Moreover, all the material transfer belts are covered and transfer points are equipped with pollution control equipment. To further control fugitive dust nuisance, we have developed concrete area within the vehicle movement area.
4. Frequent monitoring and analyses of data for ambient air quality, ambient noise and ground water quality & levels is being done to improve the environment quality of the plant area.
5. Special attention has been given to Green belt development with planting tree of different species inside to improve its density.
6. LED street light has been installed inside plant premises which is ecofriendly.
7. We have installed Continuous Emission Monitoring System (CEMS) and 4 numbers of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) for real time monitoring and to display the data on PCB web sites.
8. We have installed STP of capacity 25 KLD to recycle domestic waste water.
9. We have developed Rain Water Harvesting Structure to recharge ground water.
10. We have installed 1.999 MW Solar Power system.
11. We have installed water sprinklers to control fugitive dust nuisance.
12. RO reject water is being used in Mill Spray.
13. Temperature sensors are systemized at Cooling tower for the automation of pump running. Moreover, high TDS cooling tower water is used in Mill spray which also omit the blow down Process.

On the support of above, we are enclosing herewith following documents: -

- Annexure-1: Stack Emission monitoring report
- Annexure-2: Ambient Air Quality monitoring report
- Annexure-3: Ambient Noise Level monitoring report
- Annexure-4: Vacuum sweeping & cleaning machine
- Annexure-5: Water Sprinklers
- Annexure-6: STP

Shree Jharkhand Cement Plant
(A unit of Shree Cement Limited)

| Stack Emission Monitoring Data (values in mg/Nm³) | |
|---|-------------------------------------|
| Months | Norms : 20 mg/Nm³ |
| Apr-20 | 6.7 |
| May-20 | 8.1 |
| Jun-20 | 6.3 |
| Jul-20 | 7.8 |
| Aug-20 | 8.9 |
| Sep-20 | 9.9 |
| Oct-20 | 7.7 |
| Nov-20 | 10.2 |
| Dec-20 | 8.7 |
| Jan-21 | 10.3 |
| Feb-21 | 11.8 |
| Mar-21 | 9.9 |
| Average | 8.86 |

Shree Jharkhand Cement Plant

(A unit of Shree Cement Limited)

Ambient Air Quality Monitoring Data (values in µg/m³)

Year: 2020-21

| Sr. No. | Location → Unit → Parameters → Month | Plant boundary near logistic building (µg/M3) | | | Plant boundary near Rain water harvesting pond (µg/M3) | | | Plant boundary near railway siding (µg/M3) | | | Plant boundary near wagon tippler (µg/M3) | | | | | | |
|---------------------|---|---|-------------|-------------|--|-------------|-------------|--|-------------|-------------|---|------------|-------------|-------------|-------------|------------|-------------|
| | | PM10 | PM2.5 | SO2 | NOX | PM10 | PM2.5 | SO2 | NOX | PM10 | PM2.5 | SO2 | NOX | | | | |
| | | 1 | Apr-20 | Shutdown | | | 35 | 14 | 10.9 | 7.1 | 30 | 20 | 14.4 | 18.2 | 36 | 22 | 9.8 |
| 2 | May-20 | Shutdown | | | 54 | 24 | 12.1 | 16.6 | 44 | 23 | 9.0 | 11.8 | 58 | 20 | 10.7 | 27.1 | |
| 3 | Jun-20 | Shutdown | | | 46 | 32 | 13.3 | 16.1 | 49 | 23 | 9.9 | 11.8 | 50 | 30 | 11.0 | 26.7 | |
| 4 | Jul-20 | 47 | 26 | 9.9 | 10.5 | 48 | 23 | 7.8 | 12.6 | 31 | 16 | 9.2 | 17.1 | 43 | 22 | 11.1 | 12.6 |
| 5 | Aug-20 | 46 | 25 | 10.6 | 10.2 | 43 | 27 | 11.2 | 12.6 | 49 | 28 | 11.4 | 11.2 | 46 | 25 | 10.6 | 10.2 |
| 6 | Sep-20 | 48 | 14 | 10.7 | 12.5 | 41 | 21 | 9.5 | 13.3 | 31 | 19 | 11.9 | 17.2 | 38 | 20 | 12.2 | 13.1 |
| 1 | Oct-20 | 53 | 29 | 9.0 | 15.0 | 38 | 20 | 12.2 | 12.8 | 31 | 19 | 9.2 | 14.2 | 60 | 31 | 6.1 | 7.2 |
| 2 | Nov-20 | 51 | 21 | 8.6 | 18.3 | 35 | 17 | 5.5 | 6.2 | 62 | 31 | 7.3 | 13.6 | 62 | 31 | 7.3 | 13.6 |
| 3 | Dec-20 | 59 | 38 | 13.6 | 17.2 | 38 | 18 | 4.7 | 6.2 | 62 | 29 | 9.5 | 19.3 | 57 | 50 | 10.0 | 10.2 |
| 4 | Jan-21 | 61 | 34 | 11.7 | 15.9 | 65 | 23 | 10.6 | 22.3 | 42 | 19 | 6.2 | 6.4 | 45 | 27 | 10.6 | 13.3 |
| 5 | Feb-21 | 47 | 23 | 9.6 | 11.9 | 46 | 22 | 12.9 | 13.6 | 40 | 18 | 6.6 | 9.4 | 45 | 18 | 8.6 | 27.0 |
| 6 | Mar-21 | 66 | 34 | 10.4 | 22.5 | 67 | 35 | 9.8 | 24.0 | 50 | 30 | 5.8 | 16.3 | 56 | 32 | 8.2 | 22.3 |
| Average | | 51.6 | 26.5 | 10.5 | 13.9 | 46.4 | 22.9 | 10.0 | 13.6 | 43.6 | 23.0 | 9.2 | 13.9 | 49.6 | 27.3 | 9.7 | 16.1 |
| Annual Norms | | 60 | 40 | 50 | 40 | 60 | 40 | 50 | 40 | 60 | 40 | 50 | 40 | 60 | 40 | 50 | 40 |

Shree Jharkhand Cement Plant
(A unit of Shree Cement Limited)

FY: 2020-21

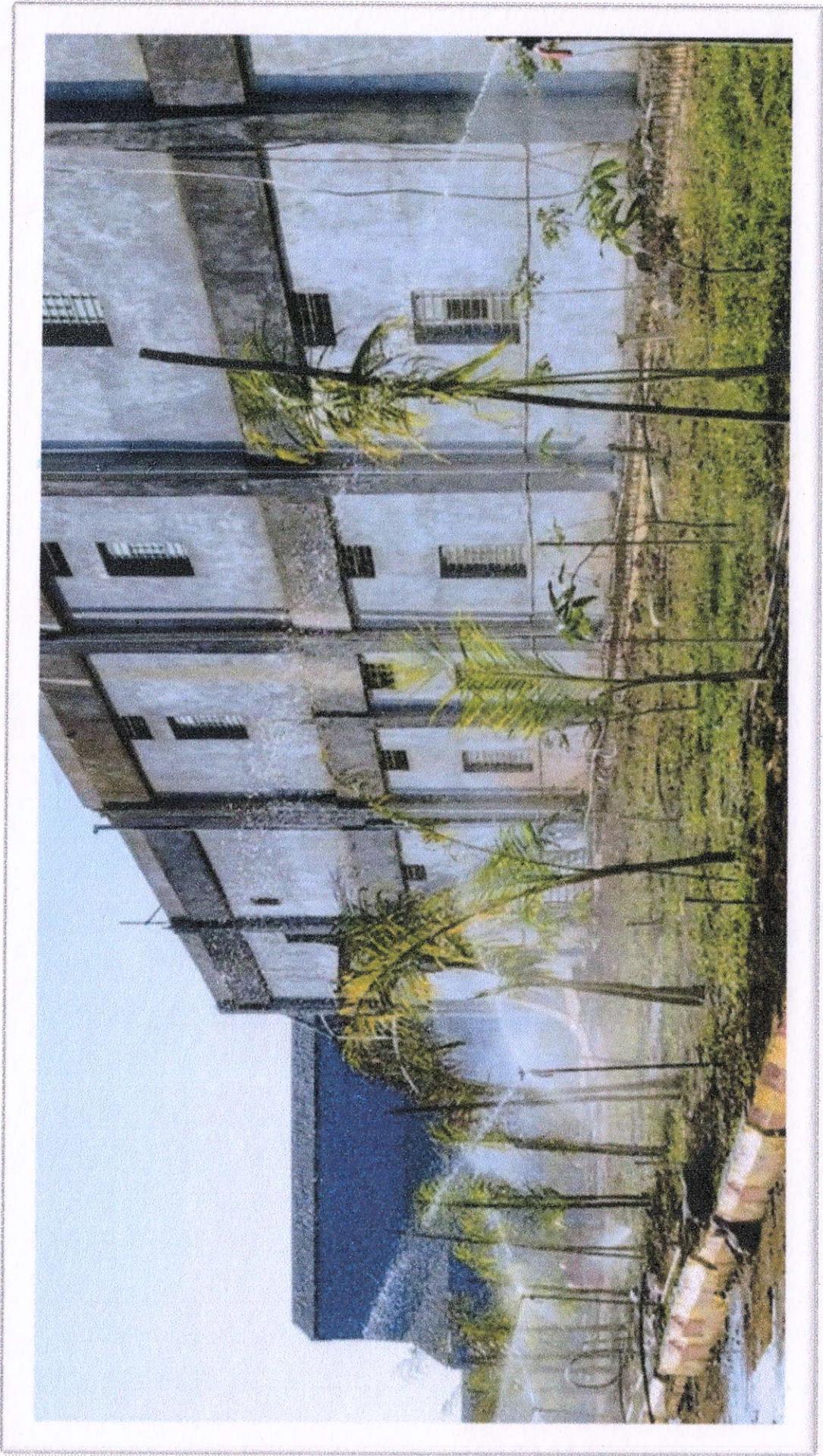
Ambient Sound Level Monitoring Data Leq. in dB(A)

| Sr. No. | Month | Plant boundary near logistic building | | Plant boundary near Rain water harvesting pond | | Plant boundary near railway siding | | Plant boundary near wagon tippler | |
|----------------|--------|---------------------------------------|-------------|--|-------------|------------------------------------|-------------|-----------------------------------|-------------|
| | | Noise Level dB (A) | Night Time | Noise Level dB (A) | Night Time | Noise Level dB (A) | Night Time | Noise Level dB (A) | Night Time |
| | | Day Time | Night Time | Day Time | Night Time | Day Time | Night Time | Day Time | Night Time |
| 1 | Apr-20 | | | | | | | | |
| 2 | May-20 | 69.7 | 54.1 | 66.4 | 50.2 | 67.9 | 54.7 | 70.1 | 58.3 |
| 3 | Jun-20 | 69.8 | 54.6 | 68.1 | 52.4 | 69.4 | 56.7 | 71.5 | 60.1 |
| 4 | Jul-20 | 68.5 | 53.7 | 65.6 | 50.2 | 68.1 | 57.4 | 70.9 | 58 |
| 5 | Aug-20 | 69.1 | 53.4 | 64.2 | 48.5 | 67.8 | 56.4 | 69.6 | 57.3 |
| 6 | Sep-20 | 67.4 | 52.5 | 62.8 | 49.1 | 65.6 | 54.9 | 69.8 | 56.1 |
| 7 | Oct-20 | 69.5 | 54.1 | 60.9 | 48.4 | 70.5 | 58.4 | 68.7 | 58.7 |
| 8 | Nov-20 | 68.7 | 51.7 | 65.4 | 47.2 | 68.1 | 59.6 | 70.3 | 58.1 |
| 9 | Dec-20 | 70.1 | 55.8 | 62.4 | 50.6 | 66.8 | 55.3 | 72 | 59.4 |
| 10 | Jan-21 | 69.7 | 55.4 | 67.2 | 51.5 | 67.4 | 54.3 | 70.1 | 57.6 |
| 11 | Feb-21 | 69.4 | 54.7 | 67.2 | 53.8 | 71.4 | 60.4 | 72.5 | 59.2 |
| 12 | Mar-21 | 68.5 | 56.1 | 65.4 | 52.3 | 69.1 | 59.3 | 69.2 | 58.4 |
| Average | | 69.1 | 54.2 | 65.1 | 50.4 | 68.4 | 57.0 | 70.4 | 58.3 |
| Norms | | 75 | 70 | 75 | 70 | 75 | 70 | 75 | 70 |

Couldn't perform monitoring due to COVID-19 pandemic



(Vacuum sweeping & cleaning machine)



(Water Sprinklers arrangement inside plant premises)

Annexure: 6



(STP)