



NCL INDUSTRIES LIMITED

CEMENT DIVISION



AN ISO 9001 : 2015 COMPANY

CIN : L33130TG1979PLC002521

// REGISTERED POST A/D//

NCL/QC/ENVT/2020-21/278

Date: 29.06.2020

To

The Member Secretary,
TSPC Board,
Paryavaran Bhavan,
A-3, Industrial Estate,
Sanathnagar,
HYDERABAD – 500 018.

Sub: Submission of Environmental Statement Audit Report Form – V for the Year 2019 -20.

Ref: Amendment of CFO&HWA Order No: - TSPCB/RCP/NLG/HO/CFO/2018 - 2563;

Dated: 19/11/2018.

Dear Sir,

With reference to the above cited subject, we are here with submitting three copies of Environmental Statement Audit Form –V for the financial year ending March 2020.

Kindly acknowledge the receipt of the same.

This is for your kind information.

Thanking you.

Yours faithfully,

For NCL INDUSTRIES LIMITED


S. Chakradhar
President - Works

Encl: As above.

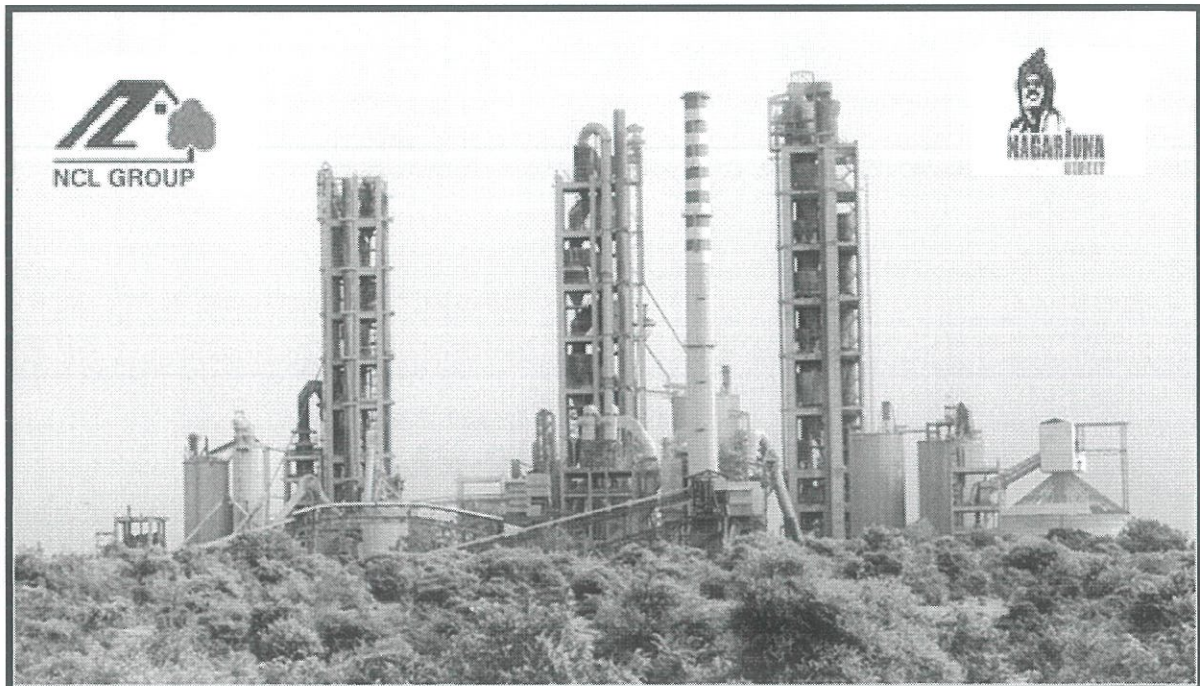
Copy to: The Environmental Engineer, TSPC Board, Regional Office,
H.No.8-15,1st Floor, Sri Laxmi Complex,Near RTA office,
Sri Vinayak Nagar, NALGONDA 508 201, TELANGANA.

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NAGARJUNA CEMENT

ENVIRONMENTAL STATEMENT (FORM - V)
For The Financial Year Ending March -2020



M/S. NCL INDUSTRIES LTD
(CEMENT DIVISION)
SIMHAPURI, MATTAPALLI (V),
MATTAMPALLI (M) SURYAPET (DIST).

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FORM – V

(See Rule 14)

**ENVIRONMENTAL STATEMENT (AUDIT) REPORT
FOR THE FINANCIAL YEAR ENDING 31st MARCH, 2020**

PART – A

- i) Name and address of the owner/ Occupier of the industry operation or process. : **M/s. NCL INDUSTRIES LTD.,**
(Cement Division)
Simhapuri, Mattapalli (V),
Mattampalli (M) Suryapet (Dist).
- ii) Date of the last Environmental Audit Report submitted : 29.09.2018
- iii) Production Capacity (Units) : Clinker 7800 TPD (2.6 MTPA)
Cement 6120 TPD (2.0 MTPA)
- iv) Year of Establishment :
- Line- 1 1984
 - Line -2 2010
 - Line-3 2017
 - Power Generation – WHR Project Under commissioning

PART – B

WATER AND RAW MATERIAL CONSUMPTION

i) Water consumption (m³ /day) : 900

1. Process & Cooling – 650
2. Domestic – 250

Name of Products	Water consumption per unit of products (KL/MT)	
	During the previous Financial year (2018–2019)	During the current financial year (2019–2020)
Ordinary Port Land Cement	0.210	0.205

NCL Industries Ltd., (Cement Division)

ii) Raw material consumption:

Name of raw materials	Name of product	Consumption of raw material per unit of output (Ton/Ton)	
		During the previous financial year (2018-2019)	During the current financial year (2019-2020)
1. Lime Stone	Clinker	1.356	1.355
2. Aluminum Laterite	Clinker	0.059	0.08
3. Iron ore	Clinker	0.036	0.014
4. Coal	Clinker	0.156	0.159
5. Gypsum	Cement	0.027	0.028
6. Fly Ash	Cement	0.109	0.108

PART – C

POLLUTION DISCHARGED TO ENVIRONMENT

(Parameter's as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (kg/day) 2019-2020	Concentrations Of Pollutants in Discharges (mg/L) 2019-2020	Standard Limit mg/nm3	Percentage of variation from prescribed standards with reasons
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a) Wastewater: There is no process waste water generation only domestic sewage is the only waste water source it is sent to septic tank followed by soak pit.

NCL Industries Ltd., (Cement Division)

b) Air					
Stack Attached to	Pollutants	Quantity of Pollutants in Emissions (kg/day) 2019-2020	Concentrations Of Pollutants in Emissions (mg/ N m ³) 2019-2020	Standard Limit mg/nm ³	Percentage of variation from prescribed standards with reasons
Line 1 Kiln /Raw Mill with PJBH	SPM	62.60	13	30	56.67 % Less
Line 1 Cooler	SPM	12.31	10	30	66.67 % Less
Line 1 Cement Mills	SPM	13.03	16	30	47.10 % Less
Line 1 Coal Mill	SPM	08.57	17	30	42.97 % Less
Line 1 Packing plant	SPM	03.37	20	30	34.55 % less
Line 2 L.S. Crusher	SPM	15.85	23	30	23.94 % Less
Line 2 Kiln /Raw Mill with RABH	SPM	62.89	14	30	54.06 % Less
Line 2 Cooler	SPM	57.72	17	30	43.39 % Less
Line 2 Cement Mill	SPM	07.09	14	30	52.55 % Less
Line 2 Packing Plant	SPM	09.17	21	30	28.55 % Less
Line 2 Coal Mill	SPM	45.14	16	30	47.52 % Less
Line 3 Kiln with PJBH	SPM	193.68	14	30	54.24 % Less
Line 3 Cooler	SPM	97.66	11	30	63.03 % Less
Line 3 Cement Mill	SPM	11.08	9	30	69.94 % Less
Line 3 Packing Plant	SPM	07.00	20	30	33.58 % Less

PART - D

HAZARDOUS WASTE

(As specified under hazardous wastes/Management and handling rules, 1989)

Hazardous Wastes

Total Quantity per year

	During the previous financial year (2018-2019)	During the current financial year (2019-2020)
a) From Process	-N.A-	-N.A-
b) From Pollution control facilities	-N.A-	-N.A-

PART - E

SOLID WASTES

Total quantity MT per year

	During the previous financial year (2018-2019)	During the current financial year (2019-2020)
a) From Process	-NA-	-N.A-
b) From Pollution Control Facility	-NA-	-N.A-
c) Quantity recycled or re-utilized	-NA-	-N.A-

PART – F

Please specify the characteristics (in terms of concentration and quantum) of Hazardous as well as solid wastes and indicates disposal practice adopted for both these categories of wastes.

There is no hazardous waste generated. Solid waste from pollution control equipment is taken into the process again.

PART – G

Impact of the pollution control measures on conservation of natural resources and consequently on the cost of production.

Pollution control measures for different stacks in cement plant results in saving natural resources and most of dust is either from intermediate stage or final product. By controlling emissions, the management can avoid unnecessary loss.

PART – H

Additional investment proposal for environmental protection including abatement of pollution.

The Management's objective is to establish in this year 10.25 MW WHR POWER PALNT with the investment of 87 Cores, this power generated by using waste heat generated from existing cement plant facility and addition to this about 50,000 samplings (including mines/haulage roads) were planted during 2019–2020. The growth of greenery is visibly aesthetic around the plant, colony and mines. The plant too has the monitoring equipment.

PART – I

Any other particulars in respect of environment protection and abatement of pollution.

The Management's objective is to achieve the production without affecting the physical, chemical and biological environments of the nearby vicinity.

Industry has taken lot of efforts to raise the plantation in and around the plant premises even though the land is unfavorable for plantation due to rocky nature of the soil. The green canopy in and around the factory stands as an example for efforts made by industry in the barren land.

1. INTRODUCTION

M/s. NCL INDUSTRIES LTD., (Cement Division) has setup a cement plant to manufacture Ordinary Portland Cement and Portland Pozzalona Cement at Simhapuri, Mattampally Mandal of Suryapet (Dist) of Telangana. The Plant is established in the year of 1984 with capacity of 1800 T/day Line-I. Line-II was installed and commissioned on April 2010 with capacity of 3000 T/day. And line -III installed and commissioned on March 2018 with capacity of 3000TPD. Present the total plant producing from three lines clinker capacity is 7800TPD (2.6 MTPA) and Cement manufacturing capacity is 6120 TPD (2.0 MTPA). Recently we got CFE approval for establish 10.25 MW WHR Power Plant. The project is under execution.

2. OBJECTIVE OF THE STUDY

The objective of the present study is to review the performance of pollution control systems installed by the industry so as to identify efficient pollution prevention and control systems which could be beneficial to both environment and its components. And also **Inserted by rule 2 of the Environment (Protection) second Amendment & Rules, 1992 vide G.S.R. 329 (E), dated:13-3-1992.** Every person carrying on an Industry, operation or process requiring consent under section 25 of the water (prevention and control of pollution) Act 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution), Act 1981 (14 of 1981) or both or authorization under the Hazardous wastes (Management and Handling) Rules, 1989 issued under the Environmental (Protection) Act 1986 (29 of 1986) shall submit an environmental audit report for the financial year ending 31st March in Form - V to the concerned state pollution control board on or before the 30th day of September every year beginning 1993.

3. Benefits of Environmental Audit

Environmental audit creates awareness in the conservation of natural resources and helps to improve production safety and health. The benefits of audits are:

1. It helps in reduction of raw material consumption by way of waste minimization and adoption of recovery of waste and recycles the same.
2. Determined the performance of process systems and helps to improve the systems.
3. Efficiency of pollution control systems can be calculated.
4. This gives the awareness of environmental organization in the industry.
5. Data available will help the management for use in the plant modification and adopting pollution control for different types of technology.
6. It helps to identify pollution creating systems and exposure to it by the employees for taking remedial measures.
7. The management will be assisted in complying with local, regional and national laws regulations by adopting standards.
8. It helps to identify hazardous wastes, handling measures taken and exposure to litigation can be reduced.
9. To determine the impact on the surrounding environment due to the disposal of its pollutants and identify suitable preventive measures.
10. Energy saving systems can be adopted by considering fuel consumption data.

4. LOCATION:

The Industry is located In Simhapuri, Mattapalli Village, Mattampally Mandal of Suryapet District of Telangana, The project site falls under the latitudes of 16° 40' & 16° 45'N and longitudes of 79° 45' & 79° 50'E(Toposheet No. 56 P/14). The unit is located about 1.5 km due NNE of Mattapalli village. The village is located on the northern bank of Krishna river. The project is rocky in nature the site comes under Arid Zone. The Plant Location map of the project is shown in fig 1.

5. RAW MATERIAL AND PRODUCTS

Raw material and products used/produced in the financial year 2019–2020 are as follows:

5.1 Raw Materials

1.	Lime Stone	–	22,08,9404 MT/year
2.	Coal	–	2,59,170.455 MT/year
3.	Aluminum Laterite	–	1,24,375 MT/year
4.	Gypsum	–	39,142 MT/year
5.	Iron Ore	–	23,135 MT/year
6.	Fly ash	–	1,60,217 MT/year

5.2 Products

1.	Clinker	–	16, 24,816 MT/year
2.	Cement	–	14, 18,388 MT/year

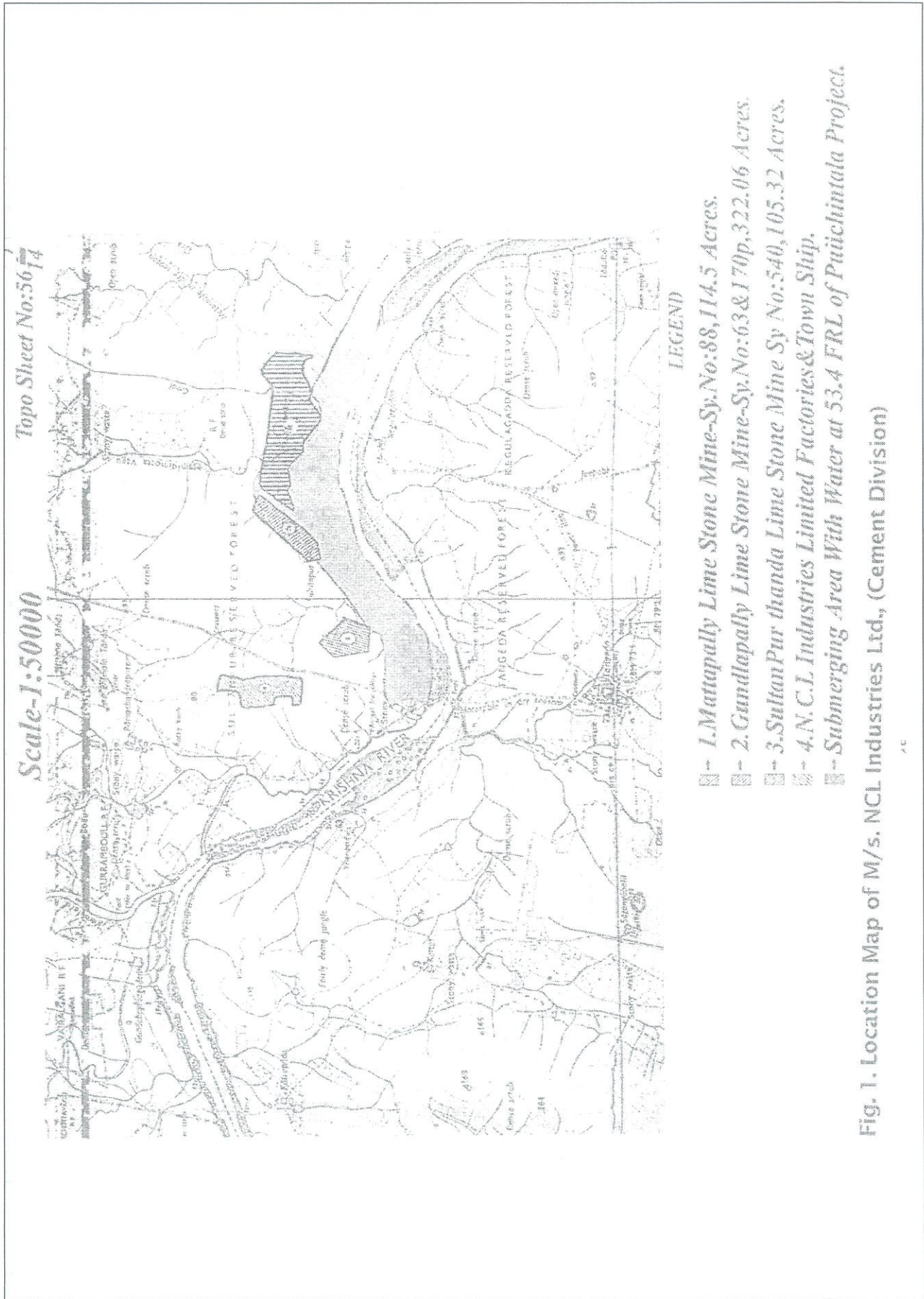


Fig. 1. Location Map of M/s. NCL Industries Ltd., (Cement Division)

6. MANUFACTURING PROCESS DESCRIPTION

Ours is a dry process cement plant with a 6 stage Pre-heater and Pre-calciner. Total plant is operated through centralized control system. Limestone is mined from our captive mines which are located at a distance of 2Kms. and 6kms from the plant. The Limestone from the Mines are transported by our vehicles to the crusher where we have Impact crusher to reduce the size of the Limestone. The Crushed Limestone is stored in a covered shed and circular stock pile.

One Vertical Raw Mill grinding the Limestone along with the additives like Aluminum Literate and Iron Ore.O-Sepa and LNV Classifier has been installed in this section, in which output from the mills are fed. The classifier separates fine and course material. The coarse material has been fed back into the mills and fine material is taken as final product. The Raw Meal prepared as above is stored in a Blending Silos and storage silos. The Raw Meal passes through Pre-heater section, consisting of 6 stage cyclones and pre-calciner and enters into Rotary Kiln.

Imported coal (South Africa) and Coal from various collieries of Singareni Collieries in a lump form crushed in Coal Crusher and stored in coal pile before feeding into a Ball Mill and Vertical coal mill for grinding into fine coal. This coal mill is an Air Swept Mill, wherein the powdered coal pass through static grit separator and finally thro' bags type dust collector where the fine coal is collected. This fine coal is used to fire into the Rotary Kiln.

The Clinker formed in the Rotary Kiln then passes through the Reciprocating Cooler, where is gets cooled from 1400°C to around 140°. The hot air from the Cooler is being fed into Kiln as secondary air and also hot air is fed into Calciner section. Installed PJBH in the Kiln-1&3 Sections and RABH for kiln-2 section, wherein the dust laden hot air from Pre-heater and also the dust laden air from Raw Mill section are fed. The dust is arrested in the ESP,PJBH and RABH and dust free air is vented out.

The clinker thus manufactured is stored in the covered Clinker Storage yard and clinker silo. The clinker from the storage yard is transported to the Cement Mills, which are also Ball Mills. To produce Ordinary Portland Cement and Pozzolona Portland Cement in the Ball Mills Clinker with the required proportion of Gypsum and Fly ash is being ground to get Cement. Installed one O-Sepa for all the Cement Mills and they are closed circuit Mills.

The Cement thus manufactured is stored in the Cement Storage Silos, from where it is extracted and transported through bulkers. Bags are Packed in two Stationary Spout Packers in line-1 and 12 & 16 spout roto packers are available in line-2 &3 respectively. The packed bags are fed into the trucks and dispatched from our factory.

7. WATER REQUIREMENT

The total consumption is 900 m³/day and the break up details is given below:

1. Process and cooling – 650 m³/day
2. Domestic – 250 m³/day

Most of the process and cooling water will be evaporated / consumed. The domestic requirement includes requirements of colony, plantation, drinking as well as sanitation. The water requirement is being met by pumping water from the Krishna River.

8. POLLUTION CONTROL IN THE PLANT

The industry has given top priority for pollution prevention and control. Provided water spray system at lime stone crusher dump hopper to suppress dust emissions. PJBH & RABH Bag filters are attached to Kilns to control air emission. Bag filters are connected to raw mills, coal mills, packing plants and cement mills. Electrostatic Precipitators are connected to coolers. To control the secondary fugitive emissions water sprinkling is adopted. High efficiency bag filters are installed at various transfer points to control the emissions. WHR Power Plant established for Line 2 Cooler & Line 3 Cooler and Line 3 Pre -heater. Stack emissions levels will be controlled with WHR Power Project and further emissions will be controlled in ESP's.

- PJBH for Kiln -1 & Raw Mill

NCL Industries Ltd., (Cement Division)

- RABH for Kiln -2 & VRM
- PJBH and WHR P H Boiler (under establishment) for Kiln -3
- ESP for Cooler -1
- ESP and WHR AQC 2 Boiler (under establishment) for Coolers - 2
- ESP and WHR AQC 3 Boilers (under establishment) for Coolers - 3
- Bag Houses for Coal Mill -1&2
- Bag Filters for Lime stone crushers 1 & 2
- Bag Houses for Cement Mills Line-1 & 2 & 3
- Bag Filters for Packing Plants -1 & 2 & 3
- Bag Filters at various transfer points

8.1 Waste water Source

Most of the water used in the process as well as cooling is consumed / evaporated. Domestic wastewater is only wastewater source. Domestic wastewater is being treated in the Sewage Treatment Plant (STP) 250KLD located in the colony. The Treated water & compost are being used for Green Belt development & Gardening purpose.

8.2 Air Pollution Control

8.2.1 Stack Emissions

The emissions from Kiln are emitted through the stack via PJBH for Line-I and RABH for Line-II and PJBH for Line-III which reduces the particulate matter to the minimum levels. The emissions from cooler are emitted through stack after passing through ESP Electrostatic Precipitator, which reduces the particulate matter to the lower levels. The bag filters attached to L.S. Crusher, Raw Mill, Cement Mills, Coal Mills & Packing Plants reduces the particulate matter emissions to below the prescribed

NCL Industries Ltd., (Cement Division)

limit. The emissions from the stack attached to the kiln are monitored for the parameters like SPM, NO_x and SO_x. The emissions from the stack attached to the Crusher, Raw Mill, cement mill, coal mill, packing plant and cooler are monitored for SPM the data presented in Table 1 shows that the monitored values for different parameters are meeting the T.S. Pollution Control Board Standards.

TABLE - 1

NCL INDUSTRIES LIMITED: SIMHAPURI					
Source of Pollution and Details of Air Pollution Control Systems					
Average values of Stack Emissions monitoring data					
S.No	Source of Pollution	Pollution Control Equipment Provided	Stack Height in Mts above GL	Stack Dia (m)	Concentration (mg/Nm ³) SPM
1	Attached to Kiln -1 & Raw Mill-1	Pulse Jet Bag Filter	110	2.7	13
2	Attached to Kiln -2 & Raw Mill-2	RABH	140	2.5	14
3	Attached to Kiln -3	Pulse Jet Bag Filter	130	7.0	14
4	Attached to Cooler-1	ESP	55	1.6	10
5	Attached to Cooler- 2	ESP	55	2.6	17
6	Attached to Cooler -3	ESP	55	4.3	11
7	Attached to Coal Mill-1	Bag Filter	30	0.8	17
8	Attached to Coal Mill-2	Bag Filter	50	2.2	16
9	Attached to Cement Mill-1	Bag Filter	30	1.2	16
10	Attached to Cement Mill-2	Bag Filter	39	0.9	14
11	Attached to Cement Mill-3	Bag Filter	55	1.6	9
12	Attached to Packer-1	Bag Filter	30	0.5	20
13	Attached to Packer-2	Bag Filter	30	0.8	21
14	Attached to Packer-3	Bag Filter	30	0.97	20
15	Attached to Lime Stone Crusher	Bag Filter	30	1.25	23

8.2.2 Ambient Air Quality

Ambient air quality monitoring is carried out once in a month at the following locations in the factory premises to know the status of the ambient air quality.

1. Security

NCL Industries Ltd., (Cement Division)

2. Guest house
3. Colony
4. Time office

Note: The Ministry of Environment and Forest (MOEF) New Delhi, has given amendment on 16th November 2009 for revised standards for Ambient Air Quality Standards. M/s. NCL Industries Ltd., has following the same Standards.

Ambient air quality is monitored for 8 hours at each station for the estimation of particulate matter – PM₁₀, particulate matter – PM_{2.5}, sulphur dioxide and Nitrogen dioxide. Average values for the parameters monitored are presented in the table 9.3. The analyzed values for PM₁₀, PM_{2.5}, SO₂ and NO₂ are within the limits prescribed by T.S.P.C.B.

TABLE – 2

AVERAGE VALUES OF AMBIENT AIR QUALITY DATA

	Near Security	Near Guest House	Near Colony	Time Office
Particulate Matter – PM ₁₀	75	49	60	65
Particulate matter – PM _{2.5}	29	18	22	24
Sulfur dioxide	12	8	9	11
Oxides of Nitrogen	24	17	19	22

Note: All the values are expressed as ($\mu\text{g}/\text{m}^3$)

9. GREENBELT DEVELOPMENT

Greenery / plantation recharge oxygen into environment. Greenbelt development may have the following benefits.

- a. Mitigation of fugitive emissions including odour
- b. Noise pollution control

NCL Industries Ltd., (Cement Division)

- c. Improving the local eco-system
- d. Arresting the soil erosion
- e. Improving the landscape of the area
- f. Aesthetics

The greenbelt development programme in this rocky strata area is as follows:

Every year **Rs. 25.0 Lakhs (Rupees Twenty Five Lakhs only)** is ear marked for greenbelt development programme. For this year 50,000 saplings, separate manpower is engaged to take care of these saplings. Presently 50m³/day of water is used for greenbelt development programme.

11. PROPOSED BUDGET FOR POLLUTION CONTROL & ENVIRONMENT PROTECTION.

The budgetary allocation for the financial year 2020 – 2021 is **Rs. 2.5 Crore (Rupees two crore fifty lakhs only)** which includes **Rs. 25.0 Lakhs (Rupees twenty five lakhs only)** for greenbelt development programme **Rs. 2.25 Crore (Rupees two crore and twenty five lakhs only)** for rural welfare and maintenance of pollution control equipment.

11. House Keeping

Roads and open area in the plant are concreted, Road sweeping machine is engaged to keep the plant and colony premises neat tidy.

12. CONCLUSIONS

The NCL Industries Ltd., (Cement Division) is manufacturing Clinker 7800 TPD and Cement 6120 TPD. PJBH and RABH attached to Raw Mill and Kilns Line-I, II, III are effectively arresting the particulate matter. Bag filters are attached to the Cement Mills, Coal Mills and Packing Plants are effectively arresting the emissions. Electro

NCL Industries Ltd., (Cement Division)

Static Precipitator attached to the Coolers Line I, II & III effectively working, to conclude the industry is abating the pollution effectively. Waste Heat Recovery Power Plant (WHR) is under commissioning process.

13. AUDITOR'S COMMENTS

1. The audited figures show that the consumption of water is decreased by 0.005 KL/MT of product.
2. The fugitive emissions in Plant & Colony areas are within the prescribed limits of TSPCB.
3. The audit activities have enabled the authorities to control fugitive emissions and water consumption efficiently.
4. Investing 87 Crore for 10.25MW WHR (Waste Heat Recovery) Power Project will be established by utilizing existing Cement Plant emissions, Project work is under commissioning.
5. **During the financial year 2019-20 Rs. 4.64 Crore (Rupees Four Crore Sixty Four Lakhs only) spent on Environmental Protection and Social Welfare and CSR Activities by the management of NCL.**


Auditors Signature

