



BIHAR CEMENT PLANT

(A Unit of Shree Cement Ltd.)
Jasoia More, BIADA Industrial Growth Centre,
Post/P.S.- Aurangabad (Bihar)-824101, India
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E-mail Id : shreebcgu@shreecementltd.com
CIN:L26943RJ1979PLC001935

SCL/Bihar/BCP/Env/2021-22/ 2632

Date: 24/09/2021

To,
The Member Secretary,
Bihar State Pollution Control Board
Parivesh Bhawan, N.S.B-2
Patliputra Industrial Area,
Patna (Bihar) - 800010

Sub: Submission of Environment Statement Report of Clinker Grinding Unit "M/s Bihar Cement Plant, (A Unit of Shree Cement Ltd.)" located at BIADA, Industrial Growth Center, Aurangabad, District – Aurangabad, Bihar for the period of April, 2020 to March, 2021 under Environment Protection Act, 1986

Ref: Consent to operate letter no. T – 1041 and T – 1042, dated 17/02/2018.

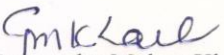
Sir,

With reference to the above subject and referred CTO letter, we are submitting herewith the Annual Environment Statement Report (in form – V) for the period from April 2020 to March 2021 for M/s Bihar Cement Plant (A Unit of Shree Cement Ltd.) situated at Jasoia More, BIADA, Industrial Growth Centre, Aurangabad, Tehsil & Dist.-Aurangabad (Bihar).

This is for your kind information and record please.

Thanking you.

Yours faithfully,
For BIHAR CEMENT PLANT
(A Unit of Shree Cement Ltd.)


(Gyanendra Mohan Khare)
Unit In-charge

Copy to: The Additional Principal Chief Conservator of Forest (APCCF), Ministry of Environment, Forests & Climate Change, Regional Office, (ECZ), Bungalow No. A – 2, Shyamali Colony, Ranchi – 834002.

ENVIRONMENT STATEMENT

FORM-V

(See Rule-14)

(APRIL, 2020 to MARCH, 2021)

PART – A

1.	Name and address of the Owner / Occupier of the Industry operation or process	M/s Bihar Cement Plant (A Unit of Shree Cement Ltd.), Jasoia More, BIADA, Industrial Growth Centre, Aurangabad, Tehsil & Dist. Aurangabad, Bihar
2.	Industry Category Primary (S.T.C. Code) Secondary (S.T.C. Code)	Red Category
3.	<u>Production Capacity</u> Cement : D.G. Set :	4.5 Million TPA 2 x 500 KVA
4.	Year of Establishment	2014
5.	Date of the last Environmental Statement submitted	24 September 2020

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(I) WATER CONSUMPTION:

Process : N.A. (As plant is based on dry Process technology)

Cooling and Dust Suppression : 33468 KL

Domestic : 20188 KL

Name of Product	Cooling & Dust Suppression Water Consumption per Unit of Product Output	
	During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
Cement	0.0224 KL/ MT of Cement	0.0166 KL/ MT of Cement

(II) RAW MATERIAL CONSUMPTION: (CEMENT PLANT)

Name of Raw Material	Name of Product	Consumption of Raw Material Per Unit of Output (Cement)	
		During Previous Financial Year (2019-20) Metric Tons	During Current Financial Year (2020-21) Metric Tons
1. Clinker	Cement	0.522	0.510
2. Gypsum		0.096	0.098
3. Fly Ash		0.303	0.298
4. Slag		0.079	0.094
5. Coal (in HAG)	Heat	0.0068	0.0102
6. Diesel (in D.G. Set)	Power	0.456 L/KWH	0.356 L/KWH

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

During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
38.39	32.56

(IV) TOTAL CEMENT PRODUCTION (MT):

During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
2035903	2015770

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

During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
13154	7297

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 is discharged outside the plant premises.	The plant is being operated on dry process technology, hence no liquid effluent is generated from the Clinker Grinding Unit. The waste water generated from the township, office toilets, canteen and guest house are being treated at sewage treatment plant (STP). The STP treated water is being utilized in horticulture activities and also to flush water in toilets. Monthly quantity and quality of STP treated water is given in Annexure -I	
(b) Air	Particulate Matter from stack emission is 0.0419 MT/Day	Please refer Annexures - II & III	
(c) Noise	—	Please refer Annexure - IV	

PART – D**HAZARDOUS WASTE**

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

Hazardous Waste	Total Quantity (Liters.)	
	During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
a) From Process Cement manufacturing (Grinding) is based on “Dry Process” No Hazardous waste is generated from the process except used oil which is drained from Machinery / Equipments)	Total quantity generated = 0.0 MT Old stock = Zero Total disposal= 0.0 MT Balance quantity= Zero	Total quantity generated = 7.2 MT Old stock = Zero Total disposal= 7.2 MT Balance quantity= Zero
(b) From Pollution Control Facilities	N.A.	N.A.

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 Houses and Bag Filters are recycled to 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 the categories of wastes:

(I) Hazardous Waste:-

No Hazardous waste is generated from the process except used oil/grease which is drained from machineries / equipment. Used oil is sold to the CPCB/BSPCB authorized recycler. In 2020-21 total quantity of used oil/grease generated is 7.2 MT

(II) Battery waste:-

During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
100 (1.72 Tons)	Nil

The used batteries sent to registered recycler M/s Bhagwati Metalloys Pvt. Ltd. Fatuha, Patna.

(III) Bio-Medical Waste:

During Previous Financial Year (2019-20)	During Current Financial Year (2020-21)
1.110 kg	1.605 kg

We are registered with M/s Synergy Waste Management (P) Ltd. for proper treatment and disposal of the bio-medical waste.

(IV) E- Wastes:

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

(V) Solid Wastes: - N.A.

PART – G

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

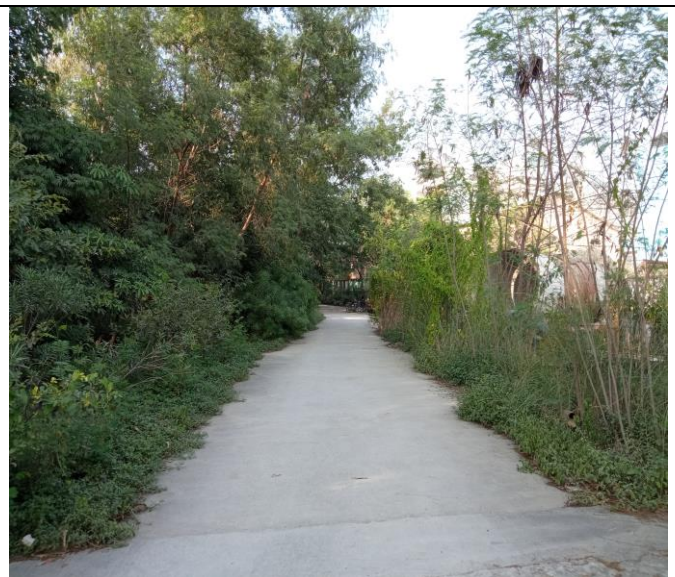
M/s Bihar Cement Plant, A Unit of Shree Cement Limited (Grinding Unit) is being operated on dry process technology, which is cost effective and environmentally clean technology. The advantage of dry process is also in fuel economy. The stack emissions from the plant are controlled by equipment like bag houses and 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 equipment and hence no cost impact on the production cost. Further fly ash and slag are being utilized in the production of cement thus eliminating the harmful impacts on environment.

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. 1.88 Crore approximately. Green belt development and tree plantation are our ongoing activity within the plant and outside of the plant area. Every year plantation activities are being done to increase the density and bio-diversity of the area. More than 33 % of the total plant area developed under greenbelt development area. In 2020-21 (last monsoon) 5000 trees have planted inside / outside the plant area. In monsoon of 2021-22, we have planted 1000 trees to dense the green area.

PHOTOGRAPHS OF PLANTATION IN PLANT AREA

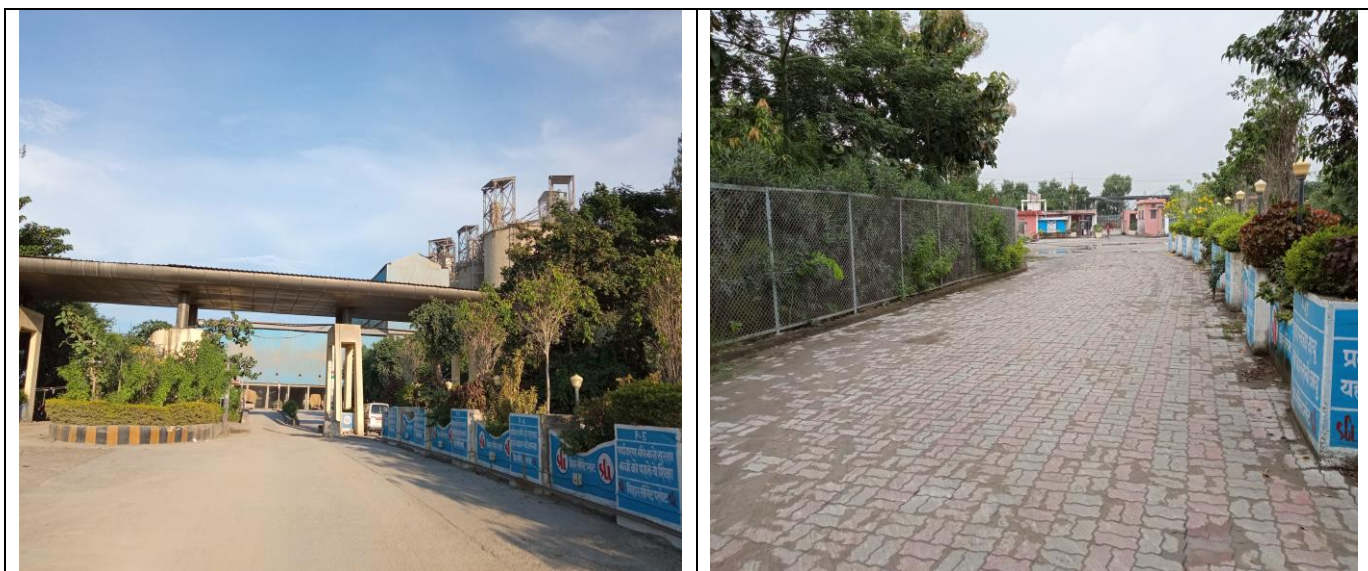


RAIN WATER HARVESTING POND



CONCRETED/ AAC BLOCK ROADS





PART – I

ANY OTHER PARTICULATES FOR IMPROVING THE QUALITY OF ENVIRONMENT

1. We have full-fledged environment department for monitoring, maintenance of pollution control equipment and greenbelt development.
2. Regular monitoring of stack emissions, ambient air quality, ambient noise and ground water quality & levels is being done on periodically and regular basis. Data analysis is being done to further improve the environment quality of the plant area.
3. Maintenance Department is performing regular checking and scheduled maintenance of all the pollution control devices i.e. bag filters etc.
4. Civil and Personal & Administration departments are taking care of entire house keeping of the Plant area.
5. To further reduce fugitive emissions, we have a big size truck mounted and 02 nos of small 3D TPS sweeping machines for regular sweeping and cleaning of paved area.
6. All the material transfer belts are covered and transfer points are equipped with pollution control equipment.
7. Truck parking area and vehicle movement area are concreted to avoid any fugitive emissions.
8. Our horticulture section in coordination with environment department is taking care of tree plantation and green belt development. Every year during monsoon, we are planting tree species inside and outside of the plant area.
9. We have installed Continuous Emission Monitoring System (CEMS) to display the data on CPCB and BSPCB servers.
10. Domestic waste water generated from office toilets, canteen, guesthouse and colony is being treated at Sewage Treatment Plant (STP) and treated water is being utilized in plantation & dual flushing.
11. We are maintaining Zero Liquid Discharge (ZLD) from our premises.
12. We create environment awareness for all our stakeholders through meetings, training programs, world environment day celebrations etc.

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

Annexure-I	:	Monthly treated domestic effluent Report for the year 2020-21
Annexure-II	:	Ambient Air Quality Monitoring Report for the year 2020-21
Annexure-III	:	Stack Emission Level Monitoring Report for the year 2020-21
Annexure-IV	:	Ambient Noise level Monitoring Report for the year 2020-21
Annexure-V	:	Yearly plantation Report up to the year 2020-21

MONTHLY TREATED DOMESTIC EFFLUENT

QUANTITY OF STP TREATED DOMESTIC EFFLUENT(Monthly)		
YEAR: 2020-21		
MONTH	MONTHLY VOLUME (KL)	DAILY AVERAGE (KLD)
April,20	919	30.6
May,20	1485	47.9
June,20	973	32.4
July,20	1241	40.0
August,20	1892	61.0
September,20	760	25.3
October,20	985	31.8
November,20	1067	35.6
December,20	1071	34.5
January,21	984	31.7
February,21	988	35.3
March,21	1117	36.0
Total	13482	36.9

QUALITY OF STP TREATED DOMESTIC EFFLUENT													
YEAR: 2020-21													
Parameters	Prescribed Standard Limit (mg/l) except pH	Observed value(mg/L) except pH											
		April 20	May 20	June 20	July 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21
pH	5.5-9.0	-	6.98	7.06	6.86	7.12	6.94	7.27	6.91	7.07	7.11	6.83	7.32
Total Suspended Solids	100.0	-	32.0	38.0	42.0	36.0	24.0	63.0	38.0	30.0	28.0	16.0	67.0
Oil and Grease (O&G)	10.0	-	1.2	1.4	1.8	2.1	1.3	1.1	1.4	1.2	1.1	<1.0	<1.0
B.O.D. (3 days at 27°C)	30.0	-	24.0	26.0	25.0	22.0	18.0	18.0	26.0	22.0	21.0	18.0	20.0
C.O.D	250.0	-	72.0	80.0	76.0	72.0	60.0	76.0	88.0	80.0	76.0	16.0	84.0
Total Residual Chlorine as Cl	1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloride as Cl		-	52.0	48.0	38.0	50.0	44.0	46.0	32.0	28.0	26.0	40.0	40.0
Sulphide as S	2.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ammonical Nitrogen as N	50.0	-	9.2	8.8	9.6	10.6	8.2	8.4	12.3	14.6	12.0	11.0	9.0
Total Kjeldahl Nitrogen as N	100.0	-	21.0	17.2	24.0	26.4	21.6	15.1	22.4	21.3	21.0	18.0	16.2

AMBIENT AIR QUALITY ($\mu\text{g}/\text{m}^3$) FOR YEAR 2020-21

Location Month	Plant boundary towards main gate / NH - 98				Plant boundary towards Hostel				Plant boundary towards Water harvesting pond			
	PM10	PM2.5	SO ₂	NO ₂	PM10	PM2.5	SO ₂	NO ₂	PM10	PM2.5	SO ₂	NO ₂
Apr-20	51	23	5	15	49	24	5	14	44	22	5	12
May-20	52	28	5	18	51	25	5	17	46	25	5	11
June-20	54	30	7	22	52	28	5	20	51	29	5	16
July-20	55	31	9	21	50	27	9	17	50	28	7	19
Aug-20	54	34	8	21	53	30	9	20	52	30	5	15
Sept-20	50	29	11	24	52	27	12	22	48	26	10	18
Oct-20	72	39	4	19	86	52	6	18	74	45	4	18
Nov-20	49	25	4	15	46	22	5	15	41	22	4	14
Dec-20	47	26	7	20	48	24	5	19	42	25	4	15
Jan-21	45	28	9	21	47	26	8	12	44	26	7	16
Feb-21	56	31	8	20	54	30	9	11	50	29	6	11
Mar-21	50	28	9	19	51	25	7	17	48	25	5	12
Median	51.5	28.5	7.5	20	51	26.5	6.5	17	48	26	5	15

ANNEXURE-III
STACK EMISSION LEVEL (mg/Nm^3) FOR YEAR 2020-21

Sr. No.	Month	Pollution Control Measures	Cement Mill - PM (mg/Nm^3)	Ball Mill - PM (mg/Nm^3)
1	April-20	Bag House	16	-
2	May-20	Bag House	17	16
3	June-20	Bag House	17	20
4	July-20	Bag House	19	-
5	August-20	Bag House	19	-
6	September-20	Bag House	14	-
7	October-20	Bag House	18	-
8	November-20	Bag House	18	-
9	December-20	Bag House	17	-
10	January-21	Bag House	16	-
11	February-21	Bag House	15	-
12	March-21	Bag House	16	-
Median		Bag House	17	18

Stack emission level of 2 x 500 KVA DG Set (mg/Nm^3) for the Period of April, 2020 to March, 2021

S. No	Date & Month ↓	Stack attached with 500 KVA DG Set			
		Parameters	Monitored Value DG Set I (mg/Nm^3)	Monitored Value DG Set II (mg/Nm^3)	Prescribed Standard Limit (mg/Nm^3)
1	12.10.2020	Particulate Matter	30.6	27.4	75
		NO _x	166.1	172.6	710
		CO	28.0	32.0	150
		NMHC	20.0	24.0	100
2	11.03.2021	Particulate Matter	33.7	26.1	75
		NO _x	167.1	184.4	710
		CO	24.0	30.0	150
		NMHC	18.0	22.0	100

NOISE LEVEL Leq-dB (A) FOR YEAR 2020-21

S. No.	Monitoring Location ⇒ Month↓	Plant boundary towards main gate / NH - 98		Plant boundary towards Hostel		Plant boundary towards Water Harvesting Pond	
		Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
01.	Apr-20	38.7	37.5	39.0	35.7	38.5	36.2
02.	May-20	42.1	40.3	41.8	48.3	41.5	42.4
03.	June-20	56.8	55.2	59.1	55.4	56.8	54.2
04.	July-20	62.1	57.1	62.7	57.3	57.8	50.8
05.	Aug-20	65.2	55.3	64.8	55.8	59.3	52.3
06.	Sept-20	63.8	57.8	62.1	54.1	56.2	48.9
07.	Oct-20	68.5	58.6	63.5	56.7	59.7	49.8
08.	Nov-20	66.1	60.2	60.8	58.1	58.6	48.6
09.	Dec-20	65.8	59.4	62.1	56.4	57.6	52.1
10.	Jan-21	63.5	58.8	62.7	56.8	57.5	50.5
11.	Feb-21	66.2	56.5	63.8	54.9	58.7	55.1
12.	Mar-21	62.4	57.8	60.7	55.3	58.5	51.7
Median		63.7	57.5	62.1	55.6	57.7	50.7

YEARWISE PLANTATION DETAILS

Year	No. of plant saplings planted	No. of plant saplings survived	Rate of Survival (%)
2013-14	2000	1590	80
2014-15	2000	1685	84
2015-16	2000	1735	87
2016-17	2500	2198	88
2017-18	5998	4795	80
2018-19	12336	10856	88
2019-20	15750	12602	80
2020-21	5000	4384	88
Total	47584	39845	84