



SHREE CEMENT LTD.

An ISO 9001, 14001, 45001 & 50001 Certified Company

Regd. Office

BANGUR NAGAR, POST BOX NO.-33, BEAWAR 305901, RAJASTHAN, INDIA

SCL/Ras/Syn.Gyp. /Env Statement/2022-23/ 5361

Date : 10.09.2022

To,
The Member Secretary,
Rajasthan Pollution Control Board,
4, Institutional Area, Jhalana Doongri,
JAIPUR-302004 (Rajasthan)

File No. C-144

Sub: - Environmental Statement for the period from 1st April 2021 to 31st March 2022 for Synthetic Gypsum Manufacturing Plant of Shree Cement Limited situated at Village- Ras, Tehsil- Jaitaran, Dist- Pali (Raj).

Ref:- (1) CIO No.- F(Tech)/Pali(Jaitaran)/51(1)/2017-2018/868-870 dated 25.06.2021

Respected Sir,

We are submitting herewith Environmental Statement for the **period from 01st April 2021 to 31st March 2022** for **Synthetic Gypsum Manufacturing Plant** of Shree Cement Limited situated at Village- Ras, Tehsil- Jaitaran, Dist- Pali (Raj).

This is for your kind information please.

Thanking you,
Yours faithfully,

For Shree Cement Ltd;

(Satish Chander)

Vice President & Unit Head

Copy to:-

1. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Jaipur , A-209&218, Aranya Bhawan, Mahatma Gandhi Road, Jhalana Institutional Area, Jaipur – 304002, Rajasthan
2. The Regional Officer, Rajasthan State Pollution Control Board, SA-6, Mandia Road, Industrial Area, Near Pali Urban Co-Operative Bank, Pali- 306401 (Raj.)

ENVIRONMENTAL STATEMENT
FORM – V

Shree Cement Limited,
Unit- Synthetic Gypsum Plant
Period from: April 2021 to March 2022

PART – A

1.	Name and address of the Owner / Occupier of the Industry operation or process	Shree Cement Ltd. Unit: Synthetic Gypsum Plant, Village: Ras, Tehsil: Jaitaran, Dist:Pali - 306107 (Rajasthan)
2.	Industry Category Primary (S.T.C. Code) Secondary (S.T.C. Code)	Red Category
3.	Production Capacity	7000 TPD
4.	Year of Establishment	2015
5.	Date of the last Environmental Statement Submitted	10.09.2021

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	:	19399 KL
Domestic	:	66982 KL (Common for cement plant, power plant, synthetic gypsum plant & mines)

Name of Product	Process Water Consumption per Unit of Product Output	
	During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
Synthetic Gypsum	0.351 KL/MT	0.0395 KL/MT

(II) RAW MATERIAL CONSUMPTION:

Name of Raw Material	Name of Product	Consumption of Raw Material Per Unit of Output (Syn.Gypsum)	
		During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
1. Water	Synthetic Gypsum	0.075 KL/MT	0.039 KL/MT
2. Lime Stone		0.716 MT/MT	0.689 MT/MT
3. Sulphuric Acid		0.431 KL/MT	0.602 KL/MT

(III) POWER CONSUMPTION (KWH/T OF SYNTHETIC GYPSUM):

During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
16.036 KWh/MT (Limestone grinding + Synthetic Gypsum manufacturing)	18.292 KWh/MT (Limestone grinding + Synthetic Gypsum manufacturing)

(IV) TOTAL SYNTHETIC GYPSUM PRODUCTION (MT):

During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
416136	491101

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 being generated & discharged outside the plant premises.	Waste water generated from the scrubber is recycled in the process, so no liquid effluent is generated from the plant process. The waste water generated from the office toilet and canteen is being treated in STP and treated water & sludge generated is being used in plantation and horticulture activities. Analysis Report of STP treated water is attached as Annexure-3	
(b) Air	PM - 0.0213 T/Day	Please refer Annexure - 1 & 2	

PART - D
HAZARDOUS WASTE

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

Hazardous Waste	Total Quantity	
	During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
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)	Common authorization for Hazardous Waste Management & Handling for Cement Plant, Power Plant, Synthetic Gypsum Plant, D.G. Sets and Nimbeti Limestone Mines. Total Quantity generated from April-2020 to March-2021 = 65250 Ltrs. Old Stock = 0 Ltrs. Total Used oil = 65250 Ltrs. Sold-out to registered recycler = 0.0 Ltrs. Co-processed in cement kilns = 65250 Ltrs. Balance Quantity = 0 Ltrs	Common authorization for Hazardous Waste Management & Handling for Cement Plant, Power Plant, Synthetic Gypsum Plant, D.G. Sets and Nimbeti Limestone Mines. Total Quantity generated from April-2021 to March-2022 = 100985 Ltrs. Old Stock = 0 Ltrs. Total Used oil = 100985 Ltrs. Sold-out to registered recycler = 0.0 Ltrs. Co-processed in cement kilns = 100985 Ltrs. Balance Quantity = 0 Ltrs
(b) From Pollution Control Facilities	N.A.	N.A.

PART - E
SOLID WASTE
SOLID WASTE

Sr. No.	Particulars	Total Quantity	
		During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
(a)	From Process	Nil	Nil
(b)	From Pollution Control Facility	Dust collected in the ESPs, Bag Houses and Bag Filters are recycled & reused in cement manufacturing.	
(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

A. No Hazardous waste is generated from the process except used oil which is basically petroleum-based or synthetic oil, black in color & flammable in nature, generated from machineries / equipment. Used oil is being Co-processed/utilized in cement kilns as authorization obtained from RSPCB.

B. Used & old lead acid batteries are sold to CPCB authorized recyclers

Sr. No.	Particulars	Total Quantity	
		During Previous Financial Year (2020-2021)	During Current Financial Year (2020-2021)
1	Used oil (Co processed in Cement Kiln)	65250 Ltr	100985 Ltr
2	Lead acid battery waste (Sell to authorized recycler)	11.170 MT	11.282 MT

B. Hazardous wastes were received and co-processed as specified under Hazardous Wastes (Management, Handling & Trans boundary Movement Rule, 2016) during the Current Financial Year : 2021-2022 (During the Period of April -2021 to March-2022)

S. No.	Type of hazardous waste	Category	Quantity (MT)
1	Spent catalyst and molecular sieves	1.6	52.730
2	Drill cutting (oil and Gas exploring industries)	2.1	15285.731
3	Oil emulsion sludge	4.1	1759.460
4	Spent catalyst	4.2	494.460
5	Organic Residue from process	4.4	70.417
6	Spent Clay containing oil	4.5	91.493
7	Used Oil/ Spent Oil (Co-processing)	5.1	16.770
8	Grinding/Oily/waste or residues containing oil	5.2	7535.863
9	Phosphate sludge	12.5	386.081
10	Sludge from acid recovery unit	13.2	583.500
11	Carbon residue	18.2	25.270
12	"Contaminated aromatic, aliphatic or naphthenic solvents may or may not be fit for reuse"	20.1	14.935
13	Spent solvent	20.2	11559.555
14	Distillation residues	20.3	2657.330
15	Process waste residues and sludges	21.1	3763.565
16	Waste/ Residues Not made with vegetable or animal material	23.1	2963.025
17	Process waste sludge/ residues containing acid or other toxic metals or organic complexes	26.1	1460.799
18	Dust from air filtration system	26.2	6.345

19	"Spent acid (sulphuric acid) sch-I (26.3) and sch-II B-15"		100222.247 Utilizes as a RAW material for Synthetic Gypsum
		26.3	
20	Process Residues and wastes	28.1	5869.375
21	Spent catalyst/spent carbon	28.2	7.775
22	Spent carbon	28.3	753.590
23	Off specification products	28.4	628.250
24	Date Expired Products (Pharma Industries)	28.5	123.615
25	Spent Solvent (Pharma Industries)	28.6	2385.02
26	Process waste/ residues	29.1	6272.270
27	Sludge Containing Residual Pesticides	29.2	18.105
28	Spent solvents	29.4	63.190
29	Contaminated cotton rags or other cleaning materials	33.2	61.640
30	Exhaust Air or Gas cleaning residue	35.1	10.070
31	Spent Ion exchange resin containing toxic metals	35.2	125.815
32	Chemical Sludge from Waste treatment	35.3	29355.414
33	Any process or distillation residue	36.1	3063.301
34	Incineration ash	37.2	41.775
35	Waste Mix Liquid	Sch-1	2408.233
Total Quantity			200137.014

Total 200137.014 MT hazardous waste has been co-processed/utilized at Ras complex during FY 2021-2022.

Bio-Medical Wastes:

Bio-medical waste generated is common for cement plant, power plant and mines during current financial year April 2021 to March 2022 under the Bio-Medical Waste (Management & Handling) Rules 2016, are as follows.

Period	Bio-Medical Waste Quantity (Kg) as per Color Coding			
	Yellow	Red	Blue	White
April 2020 to March 2021	58.6	53.5	20.2	28.3
April 2021 to March 2022	54.7	50.0	22.2	26.8

Above mentioned waste has been sent to Sales Promoter, CBWTF Bio Medical Treatment Facility, Jaipur Bye Pass Road, Ajmer (Raj.) for further disposal.

E- Wastes:

Particulars	Total Quantity (Kg)	
	During Previous Financial Year (2020-2021)	During Current Financial Year (2021-2022)
From Process	Nil	Nil
From Pollution Control Facility	Nil	Nil

Total 10680 KG e waste generated from different categories i.e. electrical, instrumentation & information technology etc. is common for cement plant, power plant and mines.

We have sold out generated e-waste of to RPCB authorized/registered recycler only

Solid Wastes: - Other Municipal solid waste generated from all units (Cement Plant, Power Plant, Synthetic Gypsum plant and Nimbeti Limestone Mines) of the entire campus is being collected, manage and disposed as per MSW Rules, 2016.

Battery Wastes:

As specified under Batteries (Management and Handling) Amendment Rules, 2010, we have sold out used/ old batteries of different categories is common for cement plant, power plant and mines to CPCB authorized recycler. The details are as follows:

Number of used batteries of categories mentioned in Sl. No 3 and Tonnage of scrap sent manufacturer/dealer/importer /registered recycler/or any other agency to whom the used batteries scrap was sent	Current Year Financial Year (1 st Apr 2020 to 31 st Mar 2021)		Current Year Financial Year (1 st Apr 2021 to 31 st Mar 2022)	
	(i) No. of Batteries	(ii) Approximate Weight (In Metric Tonnes)	(i) No. of Batteries	(ii) Approximate Weight (In Metric Tonnes)
(i) Automotive				
a) Four wheeler	275	10.914	219	7.25
b) Two wheeler	Nil	Nil	Nil	Nil
(ii) Industrial				
a) UPS	32	0.256	507	4.032
b) Motive Power	Nil	Nil	Nil	Nil
c) Stand -by	Nil	Nil	Nil	Nil
(iii) Others	Nil	Nil	Nil	Nil
Total	307 Nos.	11.170 MT	726 Nos.	11.282 MT

Used battery scraps were sent to CPCB authorized recyclers.

PART - G

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

Shree Cement Limited, Ras 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 slack emissions from the plant are controlled by air pollution control equipment like ESPs & Bag Houses. 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 back in process and neutralizing the cost of operation of pollution control equipment and hence no cost impact on the production cost. Synthetic Gypsum is being used in place of natural gypsum thus directly conserves the mineral gypsum. Waste Heat Recovery System (WHRS) is installed at all kilns, pre-heaters and cooler sections for trapping gasses of high temperatures are being used for generation of Green Power which has resulted in conservation of fuel, reduction of GHG emissions and water conservation.

Company has separate AFR cell looking after the utilization of alternative fuels and raw materials. Unit is utilizing various types of waste such as ETP sludge, Paint sludge, oily rags, waste mix solids, phosphate sludge, etc. for co-processing in cement kilns.

PART – H

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

Green belt development and tree plantation is our ongoing process within our plant area and also outside the plant boundary. Every year we are doing new tree plantation to increase the density and bio-diversity of the area. Plantation has been carried out in an area of around 63.8 hectare with (Total land: 187.56 ha.) 165511 trees, which is ~34 % of the total land of plant area.

We have been incurred total Rs. 14.90 Crore in environment management in following activities:

1. Plantation and greenbelt development and their maintenance.
2. General and periodically maintenance of all pollution control measures i.e. Bag houses, ESPs, dust collectors.
3. Flooring, paved roads and continuous housekeeping by vacuum sweeping machines and maintenance of vacuum sweeping machines.
4. Effective waste managements in plant, mine and colony premises.
5. General and periodically maintenance of CEMS and CAAQMS instruments.
6. Operation and reoccurring of STP installed in plant and colony premises.
7. Celebration of important days for spreading awareness for protection of environment and conservation of natural resources.
8. The amount in same activities will be incurred in next year also.

PART – I

ANY OTHER PARTICULATES FOR IMPROVING THE QUALITY OF ENVIRONMENT.

1. We have full-fledged Environment Department with three separate cells, for monitoring, maintenance of pollution control equipment and Green Belt development.
2. Monitoring of stack emission, ambient air, noise & water quality is being done regularly basis.
3. Maintenance department is doing regular checking and scheduled maintenance of all the pollution control devices.
4. Civil dept. taking care of housekeeping.
5. Truck parking area and vehicle movement areas are paved and concreted to avoid any fugitive emissions.
6. Horticulture Department in coordination with environment department is taking care of tree plantation and green belt development. Every year during monsoon season, we are doing new tree plantation. During year 2021-2022 total 8692.56 tonnes of CO₂ has been sequestered by plantation done in cement plant, power plant & mine area.

7. Effective operation and maintenance of Bag House at Raw Mill & Kiln, Coal Mill, Cement mill and Cooler ESP.
8. Effective operation of cooler ESP transformer and control panel in first field to further reduce PM emission levels.
9. Constructed concreted roads at all Stacker and Re-claimer area for further reduction of fugitive emissions.
10. Installed new bag filters at various application like DBC, transfer points etc.
11. Modification of Coal Mill Bag House for further reduction of Particulate emissions.
12. Installed NOx mitigation systems in all cement kilns (Unit-3 to 10) as pollution control measure to achieve prescribed standards.
13. Covered shed and silos have been constructed for raw material storage.
14. Domestic waste water generated from office toilets and canteen is being treated at Sewage Treatment Plant (STP) and treated water is being utilized in plantation & gardening.
15. We are committed and maintaining Zero Liquid Discharge (ZLD) from our premises

We are enclosing herewith following documents: -

Annexure-1: Stack Emission monitoring report (PM, SO₂ & NO_x)

Annexure-2: Ambient Air Quality (PM₁₀, PM_{2.5}, SO₂ and NO₂) & Ambient Noise
Level monitoring report

Annexure-3: STP treated water test report.

Shree Cement Ltd, Ras - Synthetic Gypsum Plant
Stack Emission Report (PM and Mist All values in mg/Nm³)

Year: 2021-2022

S. No.	Month	Mixer and Den Three Stage Wet Scrubber		Limestone Ball Mill
		PM	Acid Mist	PM
1	Apr-21	13	12	16
2	May-21	12.6	6.8	14.1
3	Jun-21	16	7	14
4	Jul-21	17.6	8.4	12.5
5	Aug-21	21.6	9.2	16.4
6	Sep-21	18.9	8.4	18.6
7	Oct-21	15.2	9.8	12.5
8	Nov-21	13.6	11.1	15.8
9	Dec-21	18.9	8.4	18.6
10	Jan-22	15.8	10.9	19.8
11	Feb-22	16.9	13.4	16.7
12	Mar-22	14.6	11.2	13.8
Average		16.2	9.7	15.7

Annexure: 2

Shree Cement Ltd, Ras																
Ambient Air Quality ($\mu\text{g}/\text{m}^3$) Monitoring Report For The Period Of April 2021 To March 2022																
Common for Cement plant, Power plant & O ₂ Plant																
Location →	Plant Boundary Near Main Gate				Plant Boundary Near Mess				Plant Boundary towards Stacker & Reclaimer				Plant boundary towards village Khara & Jawangarh			
	AAQ in $\mu\text{g}/\text{m}^3$				AAQ in $\mu\text{g}/\text{m}^3$				AAQ in $\mu\text{g}/\text{m}^3$				AAQ in $\mu\text{g}/\text{m}^3$			
Parameter →	PM 2.5	PM 10	SO ₂	NO ₂	PM 2.5	PM 10	SO ₂	NO ₂	PM 2.5	PM 10	SO ₂	NO ₂	PM 2.5	PM 10	SO ₂	NO ₂
Apr-21	29.5	38.4	8.1	8.5	26.8	41.8	7.8	8.2	26.5	42.3	7.6	8.1	24.9	39.5	7.3	7.7
May-21	31.1	37.3	7.8	8.4	29.6	41.3	7.7	8.5	27.9	42.1	7.5	7.9	25.6	36.8	7.2	7.8
Jun-21	31.6	40.6	7.9	8.9	30.5	45.4	7.5	8.5	32.1	41.8	7.6	8.3	27.8	39.5	7.2	8.1
Jul-21	33.1	44.8	8.7	11.5	32.2	47.3	8.2	9.9	36.1	45.8	8	9.6	25.9	33.6	7.6	9.0
Aug-21	30.5	41.9	8.2	12.3	28.8	38.4	7.7	9.4	34.9	48.2	7.6	9.1	22.8	30.3	7.2	8.6
Sep-21	28.1	34.8	7.6	8.9	31.0	39.5	8.3	8.7	31.4	40.8	7.7	8.4	20.6	28.6	7.2	8.2
Oct-21	27.4	35.5	8.5	10.8	26.5	39.5	8.7	11.8	28.1	37.8	8.4	10.4	25.6	34.4	7.9	10.0
Nov-21	29.4	41.7	8.2	11.4	26.9	42.6	8.5	12.8	28.9	43.6	8.2	9.6	24.6	37.6	7.7	9.7
Dec-21	32.9	43.8	8.6	12.6	27.7	35.4	8.6	14.6	25.6	37.1	8.4	10.1	27.4	37.9	8.0	10.4
Jan-22	31.5	54.5	8.9	12.9	29.5	50.4	8.6	15.8	25.6	42.8	8.5	11.3	24.1	36.6	8.2	11.7
Feb-22	24.1	47.0	9.3	12.8	23.3	50.8	9.9	14.3	24.3	43.0	9.4	11.9	24.0	37.9	9.0	11.6
Mar-22	28.2	60.5	9.0	11.9	29.3	63.4	9.4	13.4	30.0	53.5	8.7	11.5	27.0	52.6	8.3	11.3
Average	29.8	43.4	8.4	10.9	28.5	44.7	8.4	11.3	29.3	43.2	8.1	9.7	25.0	37.1	7.7	9.5

<u>Shree Cement Ltd, Ras</u>								
Ambient Noise Level dB(A) Monitoring Report For The Period Of April 2021 To March 2022								
Common for Cement plant, Power plant & O ₂ Plant								
Location →	Plant Boundary Near Main Gate		Plant Boundary Near Mess		Plant Boundary towards Stacker & Reclaimer		Plant boundary towards village Khera & Jawangarh	
	Noise Level in dB(A)		Noise Level in dB(A)		Noise Level in dB(A)		Noise Level in dB(A)	
Parameter Month	Day time	Night time	Day time	Night time	Day time	Night time	Day time	Night time
Apr-2021	73.1	63.7	61.5	58.4	72.6	62.3	65.2	57.5
May-2021	72.1	63.2	66.9	58.4	73.8	63.1	65.5	56.8
Jun-2021	70.3	64.1	64.1	57.2	73.1	63.8	65.5	59.4
Jul-2021	71.1	63.6	63.4	57.7	72.2	63.4	64.6	60.2
Aug-2021	70.5	61.2	66.1	56.3	71	61.8	63.1	59.4
Sep-2021	68.6	62.3	63.1	58.1	73.6	65.4	62.8	58.3
Oct-2021	72.3	66.2	68.2	62.4	74.1	67.1	66.9	62.5
Nov-2021	70.4	63.9	67.5	61.8	71.8	68.5	63.1	61.7
Dec-2021	72.3	66.2	68.2	62.4	74.1	67.1	66.9	62.5
Jan-2022	71.4	68.3	70.2	66.7	73.2	64.2	65.3	60.7
Feb-2022	71.7	66.1	69.5	63.6	71.4	62.1	65.3	61.2
Mar-2022	71.7	66.1	69.5	63.6	71.4	62.1	65.3	61.2
Average	73.1	63.7	61.5	58.4	72.6	62.3	65.2	57.5

Shree Cement Ltd, Ras														
(STP Treated Water Quality Report for the period of April' 2021 to March' 2022)														
S. No.	Parameter ↓	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Avg.
1	pH	7.3	7.61	7.29	7.25	7.56	7.88	7.22	7.6	7.29	6.94	7.88	7.1	7.39
2	Total Suspended Solids (mg/L)	44	73	42.3	48	57	61	68	49	42.3	49	72	48	60
3	Oil & Grease (mg/L)	3.1	1.37	2.21	3.2	3.1	1.14	2.4	1.7	2.21	2.17	2.44	1.4	2.4
4	BOD 3days 27°C (mg/L)	17.6	14	25	14	9	21	26	22	25	20	14	12	16.3
5	COD (mg/L)	98	114	74.2	90.7	78	49.2	87	106	74.2	101	97	122	103