O/C

ADITYA BIRLA

UltraTech

UTCL/BACW/HPSPCB/Cement Plant/ESR/33/2023-24/2194 **Date :09.09.2023**

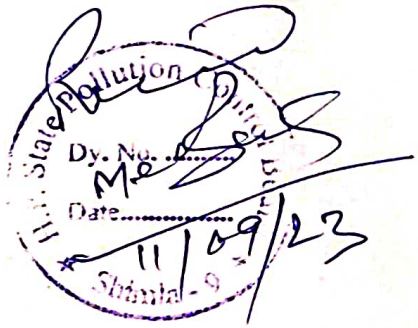
The Member Secretary
Himachal Pradesh State Pollution Control Board,
"Him Parivesh", Phase – III, New Shimla -171009.

Sub: Submission of Environmental Statement in Form-V of the year 2022-23 for Cement Plant located at Village-Baga, Tehsil- Arki, Dist.- Solan (H.P.) by UltraTech Cement Ltd. (Unit: Baga Cement Works).

Referances:

1. Consent No. CTO/BOTH/RENEW/RO/2020/1684271, Dated 20/08/2020, (Industry Registration ID: 10229).
2. MoEF&CC Letter No. J-11011/26/2006-IA. II (I) dated 18.05.2006 and subsequent amendment/ transfer of EC letter for the production of 2.97 MTPA Clinker and 2.54 MTPA Cement.

Dear Sir,
With reference to above, we are submitting herewith the Environmental Statement Form- V for the period from April 2022 to March 2023 in respect of our Cement Plant located at Village- Baga, Tehsil- Arki, Dist.- Solan (H.P). Hope the above is in order, please.



This is for your kind information and good office record please.

Thanking you,

Yours faithfully,
For UltraTech Cement Ltd.
(Unit: Baga Cement Works)

Suresh Kumar Gopala Krishnan
Assistant Vice President (Technical)

Encl: As above
Copy to: -

1. The Regional Officer, HPPCB, SCF-6,7 & 8, Sector-IV, Parwanoo, District Solan (HP).
2. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (NCZ), 25, Subhash Road, Dehradun - 248001.
3. The Deputy Director General of Forests (C) Ministry of Env., Forest and Climate Change, Integrated Regional Office, Shitnla 1' 2nd Floor, C.G.O. Complex, Longwood, Shimla -171001.

UltraTech Cement
The Engineer's Choice

UltraTech Cement Limited
(Unit- Baga Cement Works)
Village – Baga, Post Office: Kandhar, Tehsil: Arki, Distt. Solan, H.P.- 171102
T: +91 1796 223299, 223300 | W: www.ultratechcement.com
Regd. Office: Ahura Centre, 'B' Wing, 2nd Floor, Mahakali Caves Road, Andheri (East), Mumbai-400093, India
T: +91 22 6691 7800 | CIN: L26940MH2000PLC128420

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ENVIRONMENTAL STATEMENT
(FORM- V)
Environmental Statement for the financial year: 2022-23
PART – A

i.	Name and address of the owner/occupier of the industry operation or process.	UltraTech Cement Ltd (Unit: Baga Cement Works), Village- Baga, Tehsil- Arki, Dist.- Solan- 171102 (Himachal Pradesh)
ii.	Industry Category Primary- (STC Code) Secondary – (STC Code)	Red Category
iii.	Production capacity	Clinker: 2.97 MnTPA Cement: 2.54 MnTPA
iv.	Year of establishment	Plant has been commissioned and operational since 24.02.2010
v.	Date of the last environmental statement submitted.	02.09.2022

PART – B
WATER AND RAW MATERIAL CONSUMPTION

(i) Water Consumption: -

Description	**m3/day**
Process	N.A. (as plant is based on dry process technology)
Cooling/Spraying/Dust suppression	477.66
Domestic	797.09

Name of the Products	**Specific water consumption per unit of products (KL/ MT of product)**	
	During the current financial year (2021-22)	**During the current financial year (2022-23)**
Clinker	0.047	0.052
Cement	0.039	0.033

(ii) Raw Material Consumption:

Name of the Raw materials	**Name of the Products**	**Consumption of raw material per unit of output (MT/MT of Product)**	
		During the current financial year (2021-22)	**During the current financial year (2022-23)**
Limestone	Clinker	1.305	1.355
Shale		0.145	0.131
Red ochre- LG		0.035	0.083
Red ochre- HG		0.024	0.015
Bauxite		0.0001	0.0000
Mill Scale		0.016	0.000
Iron Ore		0.0000	0.0021
Fly ash (wet)		0.008	0.005
Slag		0.001	0.000

Clinker	Cement	0.789	0.765
Gypsum		0.038	0.035
Fly ash		0.157	0.184
PI - (Lime Stone) OPC43 & OPC53		0.016	0.016

(iii) Fuel Consumption:

Name	Name of the Products	Consumption of Fuel per unit of output (MT/MT of Clinker)	
		During the current financial year (2021-22)	During the current financial year (2022-23)
Petcoke	Clinker	0.063	0.074
Coal (Imported)		0.034	0.017
Alternative fuel (Non-HZ & HZ)		0.0015	0.0015

***Note-** Petcoke using as feed stock raw material.

(iv) Power Consumption:

Name of the Products	Consumption of Power per unit of output (Kwh/MT of Product)	
	During the current financial year (2021-22)	During the current financial year (2022-23)
Clinker	53.40	51.49
Cement	32.10	30.36
Total	85.74	69.74

(v) Production:

Name of product	During the current financial year (2021-22)	During the current financial year (2022-23)
Clinker (MT)	20,46,983.00	24,42,806.00
Cement (MT)	13,66,495.00	14,43,919.03

PART – C

DISCHARGED TO ENVIRONMENT / UNIT OF OUTPUT

Pollutants	Quantity of Pollutants Discharged Tonne/day	Concentration of Pollutants in Discharge (Mass/Volume)	Percentage of variation from prescribed standard with reasons
a) Water	The cement plant based on dry process technology, hence there is no trade effluent generation from cement plant process. The water only required for spraying in mills and cooling of plant machinery/ equipment, which is re-circulated & recycled back into the system. Domestic effluent treatment through STP.	Nil	NA

b) Air

1. Stack Emission Level:

Location	APCD	Parameters	Min.	Max.	Avg.	Limit (mg/Nm3)	PM Kg/MT of Clinker
Raw Mill & Kiln Stack	Bag House	PM	13.59	24.80	18.54	30	
		SO2	0.00	3.40	0.68	100	Load or Mass based standard 0.41 kg/tone of clinker (for kiln stack only)
		NOx	289.00	623.00	535.97	800	
Coal Mill Stack	Bag House	PM	2.84	22.23	10.60	30	
Clinker Cooler Stack	ESP	PM	14.42	26.70	18.82	30	
Cement Mill Stack	Bag House	PM	10.90	26.10	20.20	30	

2. Ambient Air Quality:

Ambient Air Quality Monitoring at Plant Boundary

Location	Near Panali Camp			Near Village- Baga			Shalughat			Near Village Nerri-Jajjar			Limits (µg/m3)	
Parameters	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	24 Hr	Annual
PM10	39.0	48.9	44.4	47.6	57.5	51.9	47.2	56.8	52.2	46.2	51.5	48.9	100	60
PM2.5	24.7	31.6	28.4	24.5	29.9	30.1	27.3	32.8	30.2	28.8	30.9	28.0	60	40
SO2	6.7	9.3	7.6	6.6	9.7	8.0	6.4	10.1	8.4	6.6	8.9	7.6	80	50
NO2	13.6	17.3	15.3	18.6	22.8	20.3	18.2	22.8	20.3	17.3	20.0	18.6	80	40

3. Ambient Noise Level:

Ambient Noise Monitoring at Plant Boundary

Location	Near Panali Camp			Near Village-Baga			Shalughat			Near village Nerri-Jajjar			Limit (dB(A) Leq)
Noise Level	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	
Day Time (6:00 AM-10:00 PM)	46.4	62.3	56.5	53.4	59.7	56.2	54.1	73.2	65.0	43.4	57.5	52.3	75 dB(A)Leq
Night Time (10:00 PM- 6:00 AM)	40.2	48.0	44.0	39.2	45.6	42.7	42.7	56.3	49.6	37.1	43.6	41.3	70 dB(A)Leq

PART – D
HAZARDOUS WASTE

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

Hazardous Waste (Cat. 5.1: Used Spent Oil & 33.1 Empty Drums)	Total Quantity (MT)	
	During Current Financial Year (2021-22)	During Current Financial Year (2022-23)
(a) Process	Cat. 5.1: Used Spent Oil-11.800	Cat. 5.1: Used Spent Oil - 9.560
(b) Pollution Control Facilities	NA	NA

PART – E
SOLID WASTE

		Total Quantity	
		During Current Financial Year (2021-22)	During Current Financial Year (2022-23)
(a)	Process	Nil	Nil
(b)	Pollution control facility	Dust collected from the air pollution control devices (Bag house, ESP and bag filters) recycled back into the process.	Dust collected from the air pollution control devices (Bag house, ESP and bag filters) recycled back into the process.
(c)	Quantity recycled or re-utilized within the unit	100% reutilized in process.	100% reutilized in process.
	Sold	Nil	Nil
	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:

1) Hazardous Waste Management:

- The in-house generated used spent oil (Cat. 5.1) and Empty Drums (Cat. 33.1) from and plant machineries/equipment is being stored in M.S. drums on concreted floor under covered room and is being sold out to authorized recycler.
- Authorization for co-processing of hazardous waste obtained on 19.02.2020 for co-processing of 18000 ton/annum mixed solid waste source from M/s Shivalik Solid Waste Management.

2) Non-Hazardous Waste management:

- Non-hazardous wastes as an alternative fuel (RDF, saw dust, wooden chips, plastic waste, coal ash and pine needle) 3749.37 MT co-processed in cement kiln and 181553.927 MT Petcoke (Petcoke using as feed stock raw material) & 41908.683 MT Coal used in cement kiln during 2022-23 to conserve the fossil fuel.

3) Solid Waste Management:

- Solid waste generated from pollution control equipment (Bag houses, ESP & bag filters) recycled back into the system and reutilized.
- The refractory bricks and iron/steel scrap etc. disposed to vendors.
- Road & paved areas are being regular cleaned by sweeping machines.
- The non- biodegradable and bio-degradable waste from plant & colony is being segregated into combustible for co-processing in kiln and manure for horticulture purpose.

4) Batteries Waste Management:

- Complying with the provisions under Batteries (Management & Handling) amendment Rules, 2010 and subsequently amended rules 2022, as a Bulk Consumer, the half year return regarding purchase & disposal of batteries is submitted regularly to HPPCB.

5) E-Waste Management:

- Complying with the provisions under E-Waste (Management) Rules, 2016 and subsequently amended rules 2022, as a Bulk Consumer, the annual return regarding disposal of e-waste is submitted regularly to HPPCB. The E-waste generated from the unit is being sold out only to authorized e-waste recyclers.

6) Biomedical Waste Management:

- Complying with the provision under Bio-Medical Waste Management Rules, 2016 and subsequently amended rules 2019, for the generation, segregation & disposal of Bio-medical waste generated from OHS Centre. The Bio Medical waste is being segregated into colored bins disposed through the authorized CBMWTDF i.e. M/s Enviro Engineers in its own vehicle for transportation of Bio Medical waste for final treatment/disposal.

PART – G

Impact of the Pollution Control Measures on Conservation of Natural Resources and Consequently on the Cost of Production:

Cement plant is based on dry process technology, which is cost effective and environmentally clean technology. The advantage of dry process is also in fuel economy. The co-processing of non-hazardous waste such as RDF etc. as alternate fuel and petcoke of refinery waste as fuel in cement kiln and fly ash 265805.63 MT used in Cement Production and 11109.06 MT used in Clinker Production of TPP waste as an alternate raw material for cement manufacturing conserving the natural resources and reduction of CO2 emission also. The stack emissions from the plant are controlled by air pollution control equipment like Bag houses & ESP's and fugitive emission controlled by bag filters installed at various material transfer points. 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.

1) Air Pollution Control Measure:

- Closed storage facility provided for raw material and product.
- Covered conveyor belt provided for transportation of raw material and product inside the plant premises.
- Cooler DPC transfer point covered by MS sheet along with three side to control air born dust.
- Approx. 36% area covered under green belt development.
- Online ambient air quality monitoring station (02 nos) provided at plant boundary and online monitoring system installed for stack emission control.
- Dust collected inside the pollution control devices recycled back into the process.
- Bag filters provided at all the raw material transfer points and material/product storage silos to control fugitive emission.
- Water sprinkling at haulage roads and inside the plant premises.
- Efficiency increased of Water sprinkling system installed at LS reclaimer stacker 1430.
- Routine maintenance of air pollution control equipments.
- Collector installed at Coal mill area to collect rejects and sweeping material
- Conducted detailed performance assessment study of coal mill Bag House By premier institute Central Government body, National Council for Cement and Building Materials (NCCBM).
- Sources of air emission with measure provided for pollution control are given as under:

S.No	Major Source of Air Pollution	Pollution Control Measures
1.	Raw Mill & Kiln	Bag House & low NOx burner in kiln
2.	Coal Mill	Bag House
3.	Clinker Cooler	ESP
4.	Cement Mill	Bag filter
5.	Packer	Bag filter
6.	Material transfer points & storage	Pipe conveyor and Bag filters
7.	D.G. Set	Closed building

2) Water Pollution Control Measures:

- The Cement Plant based on "Dry Process Technology", hence there is no effluent/waste water generation from cement plant process. The water only used for cooling & spraying purpose, recirculated/recycled back into the system.
- Treatment of domestic effluent through STP and treated water reutilized for dust suppression and greenbelt development.
- Installed new Hydraulic filter press at township STP, to reduction of evaporation and fast drying process of sludge in rainy seasons.
- Facility installed at HEMM washing center for re- utilization waste water with amount

3) Noise Pollution Control Measures:

- Adequate noise control measures have been provided for the control of noise level within the permissible limits at our plant premises:
- Closed building & acoustic silencers for compressors.
- Closed building for D.G. sets
- Regular maintenance of plant machineries
- Green belt development inside & around plant boundary including colony & mines area.
- The Ambient noise level at plant boundary are being monitored at regular intervals and well within the prescribed standards i.e. below 75 dBA (day time) and below 70 dBA (night time).
- The work zone noise level is also monitored at regular intervals and overall noise level is well with the standards of <85 dB. personal; protective equipment i.e. earplug provided to the workers/employees exposed to the high noisy area.

4) Compliance with all the applicable recommendations mentioned in Charter of Corporate Responsibility for Environmental Protection (CREP) specified for Cement Plant:

- The stack emission level within the limit of 30, 100 & 800 mg/Nm3 for PM, SO2 & NOx respectively as prescribed HPPCB.
- The plant is neither located in critically polluted area nor in urban area.
- Bag house is provided at raw mill & kiln stack to control stack emission.
- Applicable notifies standards for Particulate Matter, Sulphur Dioxide and Oxides of Nitrogen is followed and necessary measures is taken to maintain the same within standards.
- Fugitive dust emission controlled by providing closed storage shed for clinker, coal, stacker reclaimer of limestone & additives, Silo provided for Raw Meal, Cement. Closed conveyor belts and dust collectors provided at all the raw material transfer points. Water sprays arrangements at coal shed.

- Indigenous Petcoke is being used in cement kiln as fuel in place of natural coal (fossil fuels).
- Opacity monitors installed at cement plant stacks for continuous monitoring of particulate matter (PM).
- Continuous emission monitoring system installed for monitoring of flue gases i.e. SO2 & NOx in Raw Mill &Kiln bag house stack.
- Fly ash sourced from outside TPPs is being used in cement manufacturing.
- Non-hazardous waste like RDF, saw dust/wooden chips, coal ash etc. is being used as an Alternative fuel in cement kiln and Petcoke of refinery waste as a fuel in cement kiln for the conservation of natural resources.

PART – H

Additional Measures / Investments Proposal for Environment Protection including Abatement of Pollution:

- Ambient air quality as well as stack emission monitoring through online monitoring system for control of air emission discharge.
- Dust collection and extraction system including bag filters at all transfer points.
- Process interlocking system has been provided to trip the complete system in case of rise in temperature of gasses and/or dust concentration across bag house or in case of failure of any of the emission control system.
- An amount of Rs 54.12 lacs & Rs 134.38 lacs has already been deposited with forest department for wild life management & soil/water conservation.
- Eco-development park developed at plant near hanuman temple.
- Constructed new Rain Water Harvesting system for ground water recharge at CCR Building.
- Installed tarpaulin covering stand for the safe tarpaulin covering and ensure all the material should be transport after tarpaulin covering.
- Constructed and maintained concert road form plant to jable.
- Facility for wetting of tyres at each entry & exit point of Plant
- Facility of Collection & segregation of biodegradable and non-biodegradable waste from colony & Plant.
- Organized various environmental awareness programs, to aware environmental issues i.e. Single use plastic ban, world environment day, world water day etc.
- Eco-development measures and community welfare activities are being taken up in co-ordination with the district authorities for increasing the livelihood of surrounding people and infrastructure developmental activities through our CSR programme in the nearby villages is our continuous process. In this regard, Rs. 151 Lakh incurred towards CSR activities during April'2022 to March' 2023.
- The environmental pollution control equipment has already been installed and are in operation. The funds so provided not diverted for any purpose, other than environment protection measures. Rs. 11.5632 crores incurred during April' 2022 to March' 2023 towards environmental protection measures.

PART – I

Any Other Particulates for Improving the Quality of Environment:

- Plant design has adopted world class technology and is environmental friendly. All the pollution control equipments (bag filters & ESP) are installed to get the emission level below 30 mg/ Nm^3.
- X-ray fluorescence and X-ray diffraction techniques available with the production lab helps in optimum use of raw material and coal. Also, pyrojet burner at kiln firing system helps in improved burn-ability and complete combustion.
- Roof top rain water harvesting system has been installed as per plan submitted to HPPCB. The rain water so harvested is being directed to recharge the ground water.
- Proper operation of pollution control devices is being ensured by regular checking & Scheduled maintenance of all concerned devices.
- High efficiency air-based clinker cooling system resulting to no water consumption.

1. **Environment Management Cell: -**
   - The unit has established an Environment Management Cell under the control of senior executives.
   - The Environment Cell is responsible for take care of overall environmental monitoring of all type air, water and noise pollution; implementation of environment protection measures; pollution control equipment performance checking & operation, regular checking of leakage points and spillage and look after other general environmental activities like green belt, rain water harvesting etc. with co-ordination of plant people.
   - Environment monitoring lab is established with all the monitoring and measurement facility.

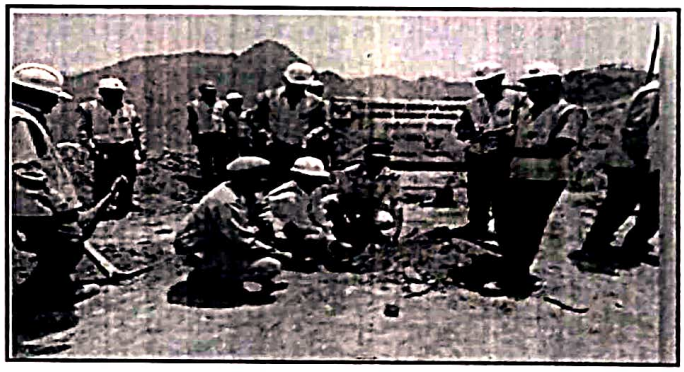
2. **Environment Monitoring Programme:**
   - We have already installed adequate pollution control equipment and provided various pollution control
   - measures at various sources of the plant and mining areas. To check the effectiveness of provided pollution control measures, we have made a comprehensive environment monitoring plan and environment monitoring is carried out by the approved third-party lab regularly as per standard frequency/schedule.
   - Established the 04 nos. Ambient Air Quality Monitoring Stations i.e. around the plant periphery in upwind, down wind and crosswind direction to monitor real impact of emission on Air Environment.
   - The stack emission monitoring facility with safe platform, staircase have been provided at the major process stacks of plant.
   - The effluent/waste water analysis is being carried out by approved third party lab.
   - The calibration of all the monitoring equipment are being done by external calibration agency on yearly basis.

3. **Online Continuous Emission Monitoring Systems/ Facilities:**
   - As per the guideline/ instruction by CPCB/HPPCB, the online Continuous Emission Monitoring System for stack monitoring and Continuous Ambient Air Quality Monitoring System (CAAQMS) for Air Quality monitoring has been installed at unit.
   - The connectivity of Continuous Emission Monitoring System (CEMS) has been done with the CPCB & HPPCB server. The parameters such as PM, SO2 & NOx, Temperature, Velocity and Pressure are being monitor by CEMS on real time basis and data is being transmitted to CPCB/HPPCB server continuously.
   - The online digital display board have been provided for the online display of CEMS & CAAQMS monitoring data at our plant main gate in the public domain with real time updates.

4. **Plantation/Green Belt Development:**
   - Plantation is an ongoing programme and unit has carried out extensive tree plantation in and around our plant premises, mines & colony area which is quite effective to minimize the ambient dust level.
   - The Greenbelt development consisting of local/native species which are good dust trappers and equally good to tolerate dust pollution without incurring significant damage to growth. Our Environment Improvement Programs includes Greenery at the Plant, Township, Mines areas.
   - Full time and well qualified horticulturist is taking care of tree plantation and green belt development and also nursery provided at plant site.
   - 3615 nos of sapling planted at plant, colony and nearby area during FY 2022-23.

Glimpses of Green Belt

Plantation with consultation of HPSPCB RO_ FY 2023-24



Plantation with consultation DFO_ FY 2023-24

5. **Corporate Social Responsibility:**
   - Unit is untiringly committed to the social up-liftment of rural and under developed weaker sections of the society through social, economic, cultural and eco development beyond business as the responsible towards rural community development.
6. **Accreditation:**
   - The unit is an ISO 14001:2015 certified for Environment Management System towards the overall environmental management.

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