ADITYA BIRLA

UltraTech

VC/QC/EC-7.22/2023/19685 Date: 16.09.2023

The Member Secretary,
M.P. Pollution Control Board
Paryawaran Parisar, E-5, Arera Colony
Bhopal – 462 016 (M.P.)

Sub: Submission of Environment Statement (Form-V) for the FY- 2022-23 of our Vikram Cement Works & TPP (2 x 23 MW) regarding.

Ref: Air/water consent no. AW-56140 dated 18.06.2022, Validity 28.02.2025 and Hazardous waste Authorization no. H -57379 dated 18.01.2023, Validity 31.12.2027 (PCB ID-19441)

Dear Sir,

This is in reference to above mentioned subject & condition mentioned in Air & Water consent and Hazardous Waste Authorization; we are submitting here with the Environment Statement Report (Form-V) for the financial year 2022-23 of our Vikram Cement Works & TPP (2 x 23 MW), Khor (Neemuch).

Thanking you,

For **UltraTech Cement Limited**
(Unit: Vikram Cement Works)

Bijneswar Mohanty

Bijneswar Mohanty
Joint Executive President & Unit Head
Encl: Form-V
Copy to:

1. The Regional Officer, MPPCB, Deputy Director General of Forests (C), MOEF&CC, Integrated Regional Office, E-5, Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3, Ravishankar Nagar, Bhopal – 462016 (M.P.)
2. The Regional Officer MPPCB, 17, Bharatpuri, Dewas Road Ujjain– 456010 (M.P.)
3. The RD, CPCB Regional Office, Paryawaran Parisar, E-5, Arera Colony Bhopal – 462 016 (M.P.)

Environment Statement Report
(Form – V)
Vikram Cement Works

Period: April 2022 – March 2023

UltraTech Cement Limited

(Unit - Vikram Cement Works)
Vikram Nagar, P.O.: Khor-458470
Dist. Neemuch (M.P.) India

About UltraTech

UltraTech Cement Limited is the largest cement company in India and among the leading producers of cement globally. It is also the country's largest manufacturer of white cement and Ready-Mix Concrete.

The Company has consolidated capacity of 136.85 Million Tonnes Per Annum (MTPA)) of grey cement. UltraTech has 23 integrated manufacturing units, 29 grinding units, one clinkerisation unit and 8 bulk packaging terminals. UltraTech has a network of over one lakh channel partners across the country and has a market reach of more than 80% across India. In the white cement segment, UltraTech goes to market under the brand name of Birla White. It has one white cement unit and one wall care putty unit, with a current capacity of 1.98 MTPA. UltraTech has over 230+ ready mix concrete (RMC) plants in 100+ cities across India. It also has a slew of specialty concretes that meet specific needs of discerning customers. Our Building Products business is an innovation hub that offers an array of scientifically engineered products to cater to new-age constructions. UltraTech pioneered the UltraTech Building Solutions (UBS) concept to provide individual home builders with a one-stop-shop solution for building their homes. Today, UBS is the largest single brand retail chain with over 2500 stores across India.

UltraTech is a founding member of Global Cement and Concrete Association (GCCA). It is a signatory to the GCCA Climate Ambition 2050, a sectoral aspiration to deliver carbon neutral concrete by 2050. UltraTech has adopted new age tools like Science Based Target Initiative, Internal Carbon Price and Energy Productivity as part of its efforts to accelerate adoption of low carbon technologies and processes across its value chain and thus reduce carbon footprint over the life cycle. UltraTech is the first company in India and the second company in Asia to issue dollar-based sustainability linked bonds. As part of its CSR, UltraTech reaches out to nearly 2.1 million beneficiaries in over 500 villages across India covering areas of education, healthcare, sustainable livelihoods, community infrastructure and social causes.

Vikram Cement Works Details

The unit produces Grey Cement and Clinker, having a cement production capacity of 6.67 MTPA. Sprawled over an area of over 1000 hectares, VCW (captive limestone mines, cement plant, captive thermal power plant and township) stands tall, as a symbol of 'Sustainable Industrial Development' in western part of Madhya Pradesh. VCW started single line in the year 1985. Later on, Line-2 was established in the year 1986. Subsequently, in the year 1991, Line-3 was established. Subsequent retrofitting of coolers and implementation of numerous continual improvement and optimization projects, has upgraded capacity to 6.67 MTPA of cement production & 4.00 MTPA Clinker Production. 46 MW captive thermal power plants have been commissioned to ensure self dependency of power and also to reduce the cost of manufacturing cement. Today, VCW is acknowledged as one of the most efficient, vibrant, productive, profitable, technologically updated and state-of-the-art unit of Aditya Birla Group's cement business.

GEOGRAPHY, GEOLOGY & CLIMATE

A. Geography:

The Vikram Cement Works Complex presently consisting of Vikram Cement Unit-I, II, and III. It is located close at 74°48'19.99" longitudinal and 24°34'45.8" latitudinal north of global medians, on the road connecting Jawad Road Railway Station to Jawad Town ship, a Tehsil of district Neemuch, which is in the North East of the Southern part of M.P.

The district headquarter is about 25 km. from the site while nearest railway station (Jawad Road) is about 4.0 km. and also plant is located about 3.5 km from the Highway.

B. Geology:

The terrain of the site is plain with some hillocks at about 15 kms away at Sukhanand mahadev holy pilgrimage place. The soil of the areas is typically black cotton one with occasionally large patches of red lateritic soils scattered all around. The area has two main Nallahs receiving water from elevated hillocks around. There is no major river around the Complex and the farthest River Nimbha is in the Rajasthan near the Nimbahera town.

C. Climate:

The area is at the border of Rajasthan but is a part of the famous Malwa Plateau. On an average the dry season prevails in the year except the June end to September/ First week of October, when the SW monsoon is received giving an annual average rainfall of about 700 – 800 mm. The eastern winds bring the winter i.e. during November – February end are cooler ones with temperature at times touching to 1-3°C in nights. March end to June is the typical dry summer, which is, not very harsh like northern plains. However, the temperature range may touches to 42-43°C. Sometime in December/January winter rains do occur.

Introduction

Environment is not the usual catchy word linked to pollution but now it is a sacred term, everyone wants a congenial environment with fragrant air, sweet smelling air and the cold elixir like water. Now this all need not only the techniques and technology, but more comprehensive strategy called management and apart from all this, one needs strong commitment and obviously, it requires certain tools like Environmental Statement, Auditing, Assessment and Evaluation.

The objective is not to meet the standards and complete the consent conditions laid by Government agencies or Pollution Control Boards but the real objective is to obtain consent from our ecosystems and their components. No certificate is more valid than this. The environment management of Vikram Cement is not just a routine one but it is a fact sheet of cohesive efforts of people, executives, labors and other employees. The Vikram Cement is not a new plant but factually it is new since to see the emission from its stacks is like to see a rare bird in the blue sky. The Environment Management System here is excellent and produced results. This is one company, which perhaps in too less a time of its inception got the ISO 9001 and 14001.

At a time of high crisis in the cement sector with nonprofit situation in production, the approach of the company's top executives has been environmentally positive, since it has gone for most expensive pollution control system, prepared energy conservation strategies, planned its resources management structure and managed the mines and spent a good sum of money for this purpose.

The Vikram Cement is thus a symbol of industrial environment management by any parameters, yardstick, standard or scrutiny.

The ES will thus offer the industry, to examine and get examined the processes, technologies and management, all the three components to diagnose the problems, explore the potential problem points, prepare the plan to combat and abate the problems, of course keeping in view the objectives and policies of the company and environment both. The aim thus is to maintain best possible balance between raw materials and resources utilized and final marketable output, so that environmental beam remains horizontal. The equation is thus set to minimize the losses, not only the raw material or water or energy but also any type of loss.

[FORM – V]

(See rule 14)

Environmental Statement for the financial year ending the 31st March 2023

PART – A

i.	**Name & address of the owner / occupier of the industry operation or process**	:	**Mr. Bijneswar Mohanty** Ultra Tech Cement Limited (Unit: Vikram Cement Works) P.O. - Khor, Dist. - Neemuch (MP) – 458 470
ii.	**Industry Category** Primary – (STC Code) Secondary – (SIC Code)	:	Cement Manufacturing – Large Scale Captive Power Plant (Generation of Electricity)
iii.	**Production Capacity**	:	Cement – 6.67 MTPA Clinker – 4.00 MTPA Electricity Generation – 46 MW
iv.	**Year of Establishment**	:	Cement Plant Unit # 1 Commissioned on 1985 Unit # 2 Commissioned on 1987 Unit # 3 Commissioned on 1991 Captive Power Plant Unit # 1 Commissioned on 30.03.2008 Unit # 2 Commissioned on 16.08.2008
v.	**Date of last Environment Statement Submitted**	:	Cement Plant - 12th September, 2022 (letter No. VC/QC/EC/7.22/2022/17036). CPP - 12th September, 2022 (letter No. VC/QC/EC/7.22/2022/17037).

PART – B

Water and Raw Material Consumption

i. Water consumption m^3/d:

A. Cement Plant

Process : Nil
Cooling : 3927
Domestic : 1110

Name of Products	Process & cooling water consumption per unit of product output (m^3/ton)	
	During the previous Financial Year 2021-2022	During the Current Financial Year 2022-23
	(1)	(2)
Clinker	0.420	0.421
Cement	0.437	0.437

B. Captive Power Plant m^3/d

Process : 29
Cooling : 70
Domestic : 20

Name of Products	Process & cooling water consumption per unit of product output (m^3/ton)	
	During the previous Financial Year 2021-2022	During the Current Financial Year 2022-23
	(1)	(2)
Electricity	0.223	0.267

ii. **Cement Plant:**

A. Raw Material & Fuel Consumption:

*Name of raw materials	Name of products	Consumption of raw material per Unit of output (MT)	
		During the previous financial Year 2021-2022	During the Current financial Year 2022-23
Limestone	Clinker	1.388	1.380
Laterite		0.025	0.043
Bauxite		0.007	0.007
Red Ochre		0.049	0.044
Red Mud		0.011	0.006
Coal		0.068	0.055
Pet Coke		0.025	0.035
AFR		0.011	0.017
Fly Ash	Cement	0.165	0.193
Gypsum		0.026	0.047

Note: Clinker is also dispatched to VCW associated grinding unit (i.e. Bhatinda, Dadri and Aligarh)

iii. Thermal Power Plant (TPP)

B. Raw Material & Fuel Consumption

*Name of raw materials	Name of products	Consumption of raw material for Power Generation per Unit of output (MT/MWh).	
		During the previous financial Year 2021-22	During the Current financial Year 2022-23
Coal		0.508	0.395
Pet coke		0.034	0.150
AFR		NA	0.08

*Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

S.NO.	Production	During the previous Financial Year 2021-2022	During the Current Financial Year 2022-2023
1.	Clinker (MT)	2988491	2900269
2.	Cement (MT)	2276567	3247162
3.	Electricity (MWH)	255369.2	135485.1

PART - C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

(a) Water: No water pollutants directly discharging to Environment.

(1) Pollutants	Avg.	Percentage (%) of variation from prescribed standards	Remarks
pH	7.77	-	We have installed STP capacity of 800 KLD. We are maintaining prescribed parameters within limit. Zero discharge is maintained. Treated domestic water is being used in horticulture and plant process for cooling purpose.
Suspended Solids (SS)	49.24	-80.30	
Biological Oxygen Demand (BOD)	16.69	-44.36	
Chemical Oxygen Demand (COD)	36.97	-63.03	
Oil & Grease (mg/l)	1.19	-88.15	

Parameters	Avg.	Percentage (%) of variation from prescribed standard	Remarks
pH	7.8	-	We are maintaining Waste water quality well within prescribed limit by treating it at Neutralization Pit. The treated water is reusing for water spry.
Suspended Solids (SS)	34.5	-65.54	
Biological Oxygen Demand (BOD)	21.0	-30.3	
Chemical Oxygen Demand (COD)	51.9	-75.24	
Oil & Grease (mg/l)	BDL	-100	

(b) Air Source Emission

Point Source Emission		APCDs	Pollutant (PM, SO2, NOx)		Percentage (%) of variation from prescribed standards with reasons.	
			Quantity of pollutants discharged (mass/day) Ton/Day	Concentration of pollutants discharged (mass/volume) mg/Nm³		
VC-I	Raw Mill + Kiln (PM)	Bag House	0.1593	23.17	-22.78	We have installed appropriate air pollution control equipment's (viz. ESP, Bag House & Bag Filters). Installed low NOx burner and SNCR to control NOx emissions. Installed Lime Dozing System for control SO2 emission at TPP.
	Raw Mill + Kiln (SO_2)		BDL	BDL	-100	
	Raw Mill + Kiln (NOx)		4.25	619.02	-38.10	
	Coal Mill (PM)	Bag Filter	0.0175	20.51	-31.63	
	Cooler (PM)	ESP	0.0923	22.33	-25.58	
	Cement Mill (PM)	Bag House	0.0236	19.89	-33.69	
VC-II	Raw Mill + Kiln (PM)	Bag House	0.1514	22.89	-23.71	
	Raw Mill + Kiln (SO_2)		BDL	BDL	-100	
	Raw Mill + Kiln (NOx)		3.98	601.56	-39.84	
	Coal Mill (PM)	Bag Filter	0.0160	18.91	-36.96	
	Cooler (PM)	ESP	0.0809	21.85	-27.17	
	Cement Mill (PM)	Bag House	0.0201	17.97	-40.11	
VC-III	Raw Mill + Kiln (PM)	RABH	0.1538	20.34	-32.20	
	Raw Mill + Kiln (SO_2)		BDL	BDL	-100	
	Raw Mill + Kiln (NOx)		4.13	546.33	-31.71	
	Coal Mill (PM)	Bag Filter	0.0246	18.39	-38.72	
	Cooler (PM)	ESP	0.1580	25.75	-14.17	
	Cement Mill (PM)	Bag House	0.0155	15.41	-48.62	
TPP	CPP Boiler Stack (PM)	Bag House	0.2507	28.62	-42.76	
	CPP Boiler Stack (SO_2)		0.38	451.23	-24.80	
	CPP Boiler Stack (NOx)		0.15	171.17	-61.96	

(-) Concentration is lower than the prescribed limit.

Ambient Air Quality Monitoring (Cement Plant)

Monitored Parameters	Permissible Limits (µg/m³)	Locations			
		Near STP	Near Guest House	Behind 132 KV Yard	Near Stores Yard
		Avg.			
$PM_{2.5}$	60	28.35	28.55	28.35	27.90
PM_{10}	100	49.05	49.95	49.90	49.60
SO_2	80	16.65	21.20	16.00	15.30
NO_2	80	15.90	15.25	15.70	15.40
CO	2000	603.00	604.50	631.50	622.90

Ambient Air Quality Monitoring (TPP 2 x23 MW)					
Monitored Parameters	Permissible Limits (µg/m³)	Locations			
		Near 132 KV Yard	Near Main Gate (2nd)	Behind Air Cooled Condensers	Behind HSD Handing Area
		Avg.			
PM2.5	60	29.25	28.55	28.25	27.9
PM10	100	49.3	49.35	49.3	49.6
SO2	80	17.35	17.4	15.6	15.3
NO2	80	16.25	16.2	14.85	15.4
CO	2000	640.5	665.5	591.5	622.9

PART – D
Hazardous Wastes

(As specified under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016]

Hazardous Wastes	Total Quantity (Kg.)	
	During the previous financial Year 2021-2022	During the Current financial Year 2022-2023
a) From Process	1.Used Oil (Cat. 5.1): 5670 Kg. 2.Wastes or residues containing oil (Cat. 5.2): 16520 kg 3.Empty barrels/containers /liners contaminated with hazardous chemicals /wastes (Category– 33.1) – 12280 kg	1.Used Oil (Cat. 5.1): 24995 Kg. 2.Wastes or residues containing oil (Cat. 5.2): 10840 kg 3.Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Category– 33.1) – 12560 kg
b) From Pollution Control Facilities.	The dust collected from the pollution control equipment is being 100% recycled back into the process system.	The dust collected from the pollution control equipment is being 100% recycled back into the process system.

PART – E
Solid Wastes

	Total Quantity (MT)	
	During the previous Financial Year 2021-2022	During the Current Financial Year 2022-2023
a) From process	Cement Plant - No solid waste is generated from the cement manufacturing process. TPP - a. Fly Ash – 42919.99 MT b. Anhydride Gypsum/Bed ash	Cement Plant - No solid waste is generated from the cement manufacturing process. TPP- a. Fly Ash – 23631.37 MT a. Anhydride Gypsum/Bed ash –

	– 6835.96 MT Fly Ash & Bed Ash 100% utilization in our Cement manufacturing Process.	4871.03 MT Fly Ash & Bed Ash 100% utilization in our Cement manufacturing Process.
b) Form pollution control facilities	All fine material collected in de-dusting hoppers of APCDs are reused in process. Therefore, no waste generation from pollution control facility.	All fine material collected in de-dusting hoppers of APCDs are reused in process. Therefore, no waste generation from pollution control facility.
c) (1) Quantity recycled or re-utilized within the unit	All the collected swept waste is reused in the process. a. Fly Ash – 42919.99 MT b. Bed Ash – 6835.96 MT	All the collected swept waste is reused in the process. a. Fly Ash – 23631.37 MT b. Bed Ash – 4871.03 MT
(2) Sold		
(3) Disposed	NIL	

S. No.	Material Description	UOM	Sold Quantity
1	MS Scrap (Chain bucket roller, Tin tapper, Riling pipe, Tor steel, old used Machinery, GI sheet, MS Heavy scrap etc.)	MT	480
2	Refractory Scrap	MT	823
3	Burst Bags	MT	23
3	Rubber Scrap	MT	54
4	Cables/Wires Scrap	MT	3
5	Other Scrap (Plastic waste, scrap packing woods, plastic scrap, oil filter, wrapper scrap, cardboard scrap, broken glass scrap, tarpaulin scrap, Filter bag scrap, nylon rope etc.)	MT	128
6	Other (Please Specify) (Obsolete Item Electrical & Instrument)	MT	7

*** The Solid waste details for Vikram Cement Works including Mines, Cement Plant & CPP.**

PART – F

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

Hazardous waste: All the used Oil and waste oil generated from the different sections of plant is being collected in empty drums and barrels and then sent to store department for proper handling and storage. The store department stores all collected hazardous waste at specified location as per Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 1989 amendment 2003, 2008, 2010 & 2016 from where the hazardous waste is being sold out to SPCB authorized recyclers.

J.M. ENVIROLAB PVT. LTD.

25 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Name and address of unit:	M/s. UltraTech Cement Ltd. (Unit- Vikram Cement Works) Khor, Neemuch (M P)	Report No.:	JME/O/221117009/N
		Reporting Date:	22/11/2022
		Ref. No.:	NIL
Sample Description:	Used or Spent Oil-5.1	Receipt Date:	17/11/2022
Sampling Location :	Cement Plant	Sampling Date:	15/11/2022
Sample Collected by:	JMEPL TEAM	Sampling Type:	Grab
Contact Person:	Mr. Dinakar Patil (Manager)	Packing Status :	Temporary Sealed

TEST REPORT

S. No.	Parameter	Protocol	Result	Unit	As per Schedule – V, Part – A Permissible Limit
1.	Polychlorinated biphenyls (PCBs)	As Per CPCB Guidelines	BDL (DL 2.0)	ppm	<2.0
2.	Lead	As Per CPCB Guidelines	5.63	ppm	100
3.	Arsenic	As Per CPCB Guidelines	1.84	ppm	5
4.	Cadmium + Nickel + Chromium	As Per CPCB Guidelines	16.90	ppm	500
5.	Poly Aromatic Hydrocarbon (PAH)	As Per CPCB Guidelines	1.5	%	6

End of Report

Abhishek Tiwari
Tested by

Rajat Tandon
Checked by

Rakumar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This report is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
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Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

J.M. ENVIROLAB PVT. LTD.

25 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Name and address of unit:	M/s. UltraTech Cement Ltd. (Unit- Vikram Cement Works) Khor, Neemuch (M P) Captive Power Plant (2 X 23 Mw)	Report No.:	JME/O/221117008/N
		Reporting Date:	22/11/2022
		Ref. No.:	NIL
Sample Description:	Used or Spent Oil-5.1	Receipt Date:	17/11/2022
Sampling Location :	CTPP (2X23MW)	Sampling Date:	15/11/2022
Sample Collected by:	JMEPL TEAM	Sampling Type:	Grab
Contact Person:	Mr. Dinakar Patil (Manager)	Packing Status :	Temporary Sealed

TEST REPORT

S. No.	Parameter	Protocol	Result	Unit	As per Schedule – V, Part – A Permissible Limit
1.	Polychlorinated biphenyls (PCBs)	As Per CPCB Guidelines	BDL (DL 2.0)	ppm	<2.0
2.	Lead	As Per CPCB Guidelines	5.80	ppm	100
3.	Arsenic	As Per CPCB Guidelines	2.15	ppm	5
4.	Cadmium + Nickel + Chromium	As Per CPCB Guidelines	20.11	ppm	500
5.	Poly Aromatic Hydrocarbon (PAH)	As Per CPCB Guidelines	2.00	%	6

End of Report

Abhishek Tiwari
Tested by

Rajat Tandon
Checked by

Rakumar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This report is for your reference only and not to be used for any legal purpose.
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7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

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Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

Solid Waste

Solid waste generated from process operations is especially through spillage of the various raw materials or the finished product i.e. cement. This spilled material is being recycled into the process. Hence, there is no solid waste generated during the process of cement manufacturing. However various waste is generated from packaging, rejection of old, during replacement activities etc. Disposal quantity of waste are as under:

S. No	Other Wastes Material which is being sent to outside parties for recycle/reuse	Type or MOC
1	MS Scrap (Chain bucket roller, Tin tapper, Raling pipe, Tor steel, old used Machinery,GI sheet, MS Heavy scrap etc)	Mild steel
2	Aluminum Scrap	Aluminium
3	Rubber Scrap	Poly vinyl chloride
4	card board / cartoon scrap	paper pulp
5	Plastic & PVC Scrap	Poly vinyl chloride
6	Wooden Scrap	Wooden
7	Old Used conveyor Belt	Rubber
8	Used Tyres	Rubber

*** The Solid waste details for Vikram Cement Works including Mines, Cement Plant & CPP.**

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

Use of Alternative fuels: -

Vikram Cement Works has started using alternate fuel in its Cement Kiln from 2007 and conducted several trails run under the guidance of MPPCB & CPCB and obtained regular permission to use the following alternate fuel.

Non-Hazardous Waste: -

- Tyre chips/scrap tyre/ Tyre dust/Rubber chips/dust/ carbon black/powder.
- Waste polythene bags/pouches/gelatin/other non recyclable polythene/plastic.
- Processed MSW (RDF) and Agro waste/combination of both co-fuel & & other non HW.
- FMCG waste
- Footwear waste (Plastic & Rubber waste)
- Poultry waste & litter
- Saw dust
- Wooden chip, lops & Tops
- Cashew peels & Kerneb
- Coir waste
- Bag gasse
- Paddy straw coconut coir & coconut shell

Hazardous Waste: -

- 1.1 - Furnace or reactor residue and debris
- 1.2 - Tarry residues and still bottoms from distillation
- 1.3 - Oily sludge emulsion
- 1.4 - Organic residues
- 1.5 - Residues from alkali wash of fuels
- 1.6 - Spent catalyst and molecular sieves
- 1.7 - Oil from wastewater treatment
- 2.1 - Drill cuttings excluding those from waste-based mud
- 3.1 - cargo residue, washing water and sludge containing oil
- 3.2 - cargo residue and sludge containing chemicals
- 3.3 - Sludge and filters contaminated with oil
- 4.1 - Oil sludge or emulsion
- 4.2 - Spent catalyst
- 4.3 - Slop oil
- 4.4 - Organic residue from processes
- 4.5 - Spent clay containing oil
- 5.2 - Wastes or residues containing oil
- 5.3 - Waste cutting oils
- 11.2 Cathode residues including pot lining wastes
- 11.3 - Tar containing wastes
- 12.5 - Phosphate Sludge

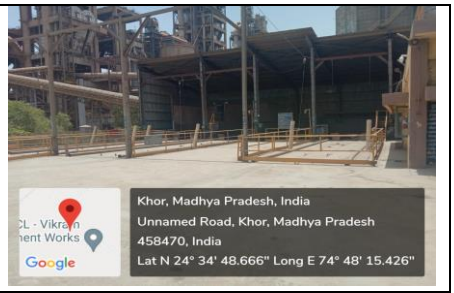
- 12.8 - Plating metal sludge
- 18.1 - Spent Catalyst
- 20.1 - Contaminated aromatic, aliphatic or napthenic solvents may or may not be fit for reuse.
- 20.2 - Spent solvents
- 20.3 - Distillation residues
- 20.4 - Process Sludge
- 21.1 - Process wastes residues and sludges (Contaminated Plastic Waste, Paint Sludge etc.)
- 21.2 - Spent solvent
- 22.1 - Spent catalysts
- 22.2 - Process residues
- 23.1 Wastes or residues (not made with vegetable or animal materials)
- 23.2 - Spent solvents
- 26.1 - Process waste sludge/residues containing acid, toxic metals, organic compounds
- 26.3 – Spent Acid (New)
- 26.4 - Spent solvent
- 26.5 - Spent catalyst
- 28.1 - Process Residue and wastes
- 28.2 - Spent catalyst
- 28.3 - Spent carbon
- 28.4 - Off specification products
- 28.5 - Date-expired products
- 28.6 - Spent solvents
- 29.1 - Process wastes or residues
- 29.2 - Sludge containing residual pesticides
- 29.4 - Spent solvents
- 29.5 - Spent catalysts
- 33.2 - Contaminated cotton rags or other cleaning materials
- 35.2 - Spent ion exchange resin containing toxic metals
- 35.3 - Chemical sludge from waste water treatment
- 35.4 - Oil and grease skimming
- 36.1 - Any process or distillation residue
- 36.2 - Spent carbon or filter medium
- 37.1 - Sludge from wet scrubbers
- 37.2 - Ash from incinerator and flue gas cleaning residues
- 37.3 - Concentration or evaporation residues
- 38.1 - Process residues (NEW)

Alternate Fuel Feeding System at Vikram Cement Works: -

In this system three separate hoppers with load cells are provided for transportation of alternate fuels. Here the materials are unloaded by truck unloaders, which are operated by telescopic hydraulic cylinders. The belts transporting the alternate fuels are fully covered and bag filters are provided at every transfer point. The entire alternate fuel feeding system is fully automatic and is

controlled through programmable logic controllers (PLC). The technology suppliers of this system are M/s KHD Humboldt Wedag, India and SHW, Germany.

The system is capable to handle various types of Non-Hazardous and hazardous wastes like Paint sludge, spent carbon, Date-expired products, Opium marc, ETP sludge, Spent Solvent etc & to feed into pre calciner in a controlled manner, Wastes or residues

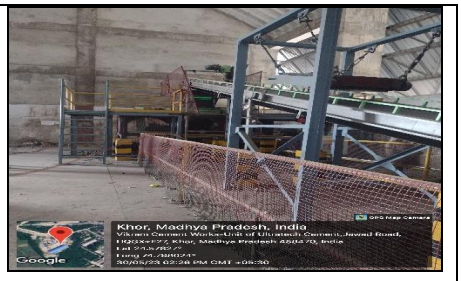


RDF Feeding System at Vikram Cement Works, Khor

We have installed a state-of-the-art plastic waste shredder machine. This is a fully automated machine in which the trucks loaded with plastic waste can be directly unloaded in the hoppers. From the hoppers plastic waste is being transported through a small covered belt conveyor to the shredder, which shreds the plastic waste into very small pieces. After that, the shredded plastic waste is pneumatically conveyed to closed storage bunkers. From the storage bunkers, the plastic waste is being transported through covered conveyor belt of alternate fuel feeding system which fed the shredded waste in the cement manufacturing process.

Automated material unloading

Shredder for AFR



New Shredder for AFR

SHREDDER SPECIFICATIONS: -

Vikram cement has installed a state-of-the-art polythene waste shredder machine at a cost of Rs. 22 lakhs. This is a fully automated machine in which the trucks loaded with polythene waste can be directly unloaded in the hoppers. From the hopper's polythene waste is being transported through a small covered belt conveyor to the shredder, which shreds the polythene waste into very small pieces. Details of Utilization of Wastes as a fuel during 2022-23

1. **Non-hazardous Waste:**

Waste	Quantity (MT)
Agro waste	33153.54
Carbon black	5575.04
FMCG waste	429.84
Plastic waste	22182.84
Tyre Chips/Tyre dust/Rubber chips/dust /powder	3509.62
MSW RDF	3800.20
Fibre Waste	762.52
Total Qty (MT):	**69413.6**

2. Hazardous Waste: FY -2022-23

S. No.	Haz. Waste Description	Category	Quantity of waste received (MT)
1	Wastes or residues containing oil	5.2	88.68
2	Phosphate Sludge	12.5	43.018
3	Any process or distillation residue	20.2	953.92
4	Process wastes, residues and sludges	21.1	540.59
5	Wastes or residues (not made with vegetable or animal materials)	23.1	76.76
6	Process waste sludge/residues containing acid,toxic metals, organic compounds	26.1	584.8
7	Date-expired products	28.5	10.2
8	Chemical sludge from waste water treatment	35.3	4,413.19
9	Alumina & Aliuminum Salt	-	442.84
		Total	**7154.00**

The Total RDF (Refuse Derived Fuel) in our VCW Cement Plant

Period	RDF Used (MT)	Total Fuel (MT)	Percentage
FY – 2021-22	18360.68	277758.21	6.61
FY – 2022-23	25983.04	237883.35	10.92

Co- Processing test report by approved NABL Laboratory attached as Annexure - 2

Cement plants are best option for disposal of wastes via valorization:

- High Temperature
- Alkaline environment
- Oxygen rich atmosphere.
- Complete scrubbing of exhaust gases due to countercurrent flow of raw material.
- Inclusion of ash and residual metals within the clinker structure.
- Kiln lines equipped with ESP / Bag filters.

Hazardous waste Management

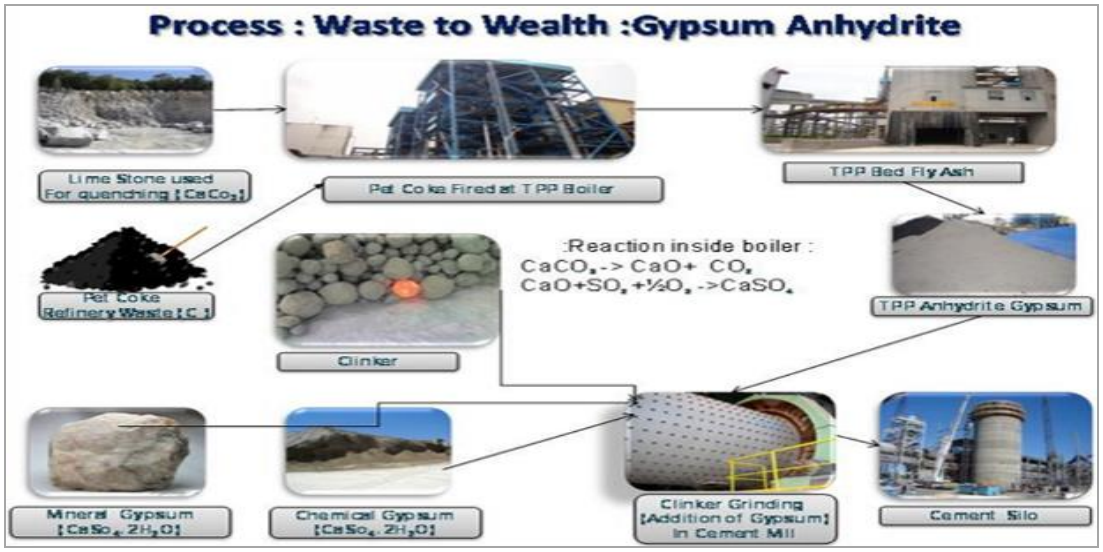
We have centralized Hazardous waste storage area at Cement plant and Used oil & Waste oil generated is being stored centrally at Cement Plant Hazardous Waste storage area and disposal of the same is done through Authorized Recycler of CPCB/MPPCB only within 90 days. Used oil generated from the maintenance of heavy machinery at auto workshop is being collected at identified storage shed. Used oil and grease is being sold to the authorized recyclers / re-processors and in last one year of Used oil (5.1) – 24.995 MT, Waste oil (5.2) - 10.84 MT & Empty barrels (33.1) – 12.56 MT sold to authorized recyclers i.e. M/s Daga Petrochemicals Ujjain, M.P., Jaital Chemicals Pvt. Ltd. Gwalior M.P., Recycle Waste, Ujjain M.P. (Total Quantity 48.395 MT in FY: 2022-23). Used batteries is being sold to authorized recyclers/ re-processors i.e. Yuvika Alloys, Mandla, (M.P). 13.977 MT sold batteries & new batteries purchased 6.18 MT period FY: 2022-23. Bio-Medical Waste incinerate to Indo Water Management Ratlam M.P. Common Bio-medical Waste Treatment Facility (CBMWTF) for the collection, reception, storage, transport, treatment, disposal of handling of bio-medical waste and in CY-2022 (total-129.71 kg) waste category of Yellow-43.41 kg, Red-41.80 kg, White - 4.45 kg, Blue - 40.05 kg quantity of waste generated & disposal in kg per annum (Period from

01.01.2022 to 31.12.2022). E-Waste is being sold to authorized recyclers/ re-processors i.e. Unique Eco Recycle, Indore (M.P.) and in FY-2022-23 6.86 MT (4281 nos.) sold to authorized recyclers.

Waste to Wealth:

We have installed state of the art limestone injection system in our TPP boilers for injecting bottom ash along with limestone when using pet coke / lignite as fuel for the operation of boilers. This system ensures quenching of sulphur dioxide emissions for more than 95% at all the times of operation of TPP. In this process, by product anhydrite gypsum is being produced which is extracted in dry form and is being successfully utilized in cement manufacturing process replacing – NATURAL GYPSUM. Year wise consumption of Thermal Power Plant (By Product) Gypsum given as under:

Year	Captive Power Plant (By Product) Anhydrite Gypsum Use (MT)
2015-16	23167
2016-17	13049
2017-18	12005
2018-19	20590
2019-20	9853
2020-21	18203
2021-22	6747.43
2022-23	3803.01



ENERGY MANAGEMENT

No country, industry or a modern civilization can afford to be developed without energy. The industries require enough of it and cement industry in itself is an energy intensive process. In such a case it becomes more important rather obligatory for the industry to reduce the energy may be electrical or thermal use per ton of clinker/cement, since ultimately it reduces to the saving of

industry. Now cement is a key player product of market especially developing countries thus it is important to save thermal or electrical energy, which will mean a strategy based on field experience, keen observations and regular implementations.

(a) Reduction in Thermal energy consumption:

The raw mix quality and process parameters have been maintained which resulted to reduction in Specific Heat per kg of clinker production.

(b) Energy Consumption

Energy Consumption is being monitored systematically on daily basis through power consumption report meetings and appropriate measures are evolved through this monitoring process resulting steadily decline in specific power consumption since plant commissioning. Monthly energy consumption meeting was also introduced for increasing awareness/ competence in employees. Involvement of workers, junior level, middle level & senior executives are ensured to achieve the desired goal.

The specific power consumption figures for last 03 years are shown below:

Key Performance Indicator (KPI)	FY 2020-21	FY 2021-22	FY 2022-23
Clinker Production	2772864	2988491	3247162
Sp. Power Cons./MT Clinker	56.98	55.75	57.14
Cement Production (OPC+PPC)	2118004	2276567	2900269
Sp. Power Cons./ MT Cement grinding	29.98	29.51	29.07
Sp. Power Cons./ MT Cement	75.2	73.73	72.32
Thermal Energy as Specific Heat (K cal / kg Clk.)	690.88	690.82	691.11

ENERGY AND RESOURCE MANAGEMENT

(Average of VC I, VC II & VC III)

Energy & Resources	FY2020-21	FY2021-22	FY2022-23
1. Electrical Energy KWh/Ton Cement	75.20	73.73	72.32
2. Specific Heat Consumption Kcal/Kg Clinker	690.88	690.82	691.11

Initiative of Energy Conservation & Management - Renewable Energy Usage

1. 8.9 MWp Solar power Generating 45 to 50 MW/day power
2. 482 KWp Roof top Solar plats power Generating Power 1.5 to 2.35 MW/day

100% Green House Building :

VCW Hospital, ABPS School , ABHSS- School , E3 Cinema Hall, Shopping Complex, and young manager home buildings

8.9 MWp Solar power Generating 45 to 50 MW/day power

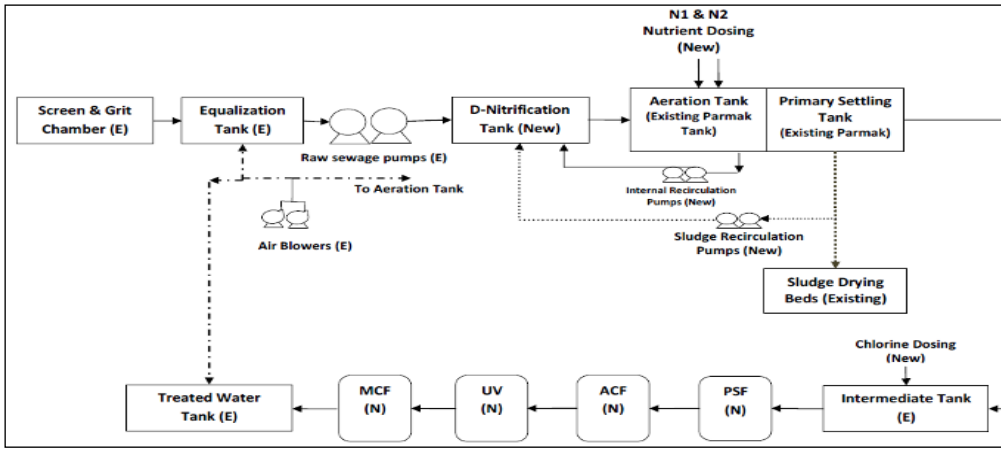
482 KWp Roof top Solar plats power Generating Power 1.5 to 2.35 MW/day

Waste Water Management:

Sewage treatment Plant (STP) is functioning well for treatment of Domestic waste water. The treated waste water is utilized for horticultural and gardening purpose. During the FY 2022-23 on an avg basis 233 KLD treated water generated from STP & FY 2022-23 total 587 kg STP Sludge generated & utilized in horticulture as manure.

Details of technology adopted: For the treatment of Domestic Waste Sewage from plant premises, Staff Colony and Workmen Colony, we have a Sewage Treatment Plant of Capacity 800 m^3/Day, designed by M/S Ion Exchange India Ltd. Pune, Maharashtra, India.

Detailed Process: The Domestic waste water generated in Colonies and plant, is collected through network of ground sewage collection tank, from where it is pumped to Sewage Treatment Plant. STP is biologically based treatment unit, which consists - Settling zone, Contact zone, Digestion Zone and Stabilization zone. Blowers (03 nos.) having capacity of 20 HP each treat sewage aerobically through supply of air. The sewage gets contacted with aerobic microorganism and stabilization takes place. This stabilized sewage is then feed into digestion zone, from where clear water is collected in treated water tank. Then, treated water is pumped to Staff Colony, where it is 100% utilized for Horticulture purposes by laid pipe line. Treated water is being utilized in horticulture purposes. **'ZERO DISCHARGE CONDITION IS BEING MAINTAINED''**.



For water conservation at Vikram Cement Captive Thermal Power Plant unit has adopted the following measures for the conservation of precious natural resource – WATER.

1. The entire water requirement in thermal power plant is fulfilled through the harvested rain water stored in mines pit.
2. Looking the huge water saving through Air Cooled Condenser instead of Water-Cooled Condenser; Air Cooled Condensers installed at CTPP.
3. The treated domestic sewage is being utilized for water spry.
4. Multi fuel-based steam generator is of circulating fluidized bed combustion (CFBC) type with low temperature water tube boiler to conserve fossil fuels as well as water.

Air Cooled Condensers in CPP (2x23 MW)

5. **Steam Turbine** - It is of Extraction, condensing turbine generator set type with regenerative feed water, heating cycle & air-cooled condenser type to conserve water.
6. **Industrial Waste Effluent Treatment Plant:** The liquid effluent comes from cooling tower blow down and boiler blow down which is being neutralized at ETP. No effluent is discharged from the power plant. Effluent is being treated as per the requirements and the treated effluent quality is meeting the norms prescribed by M.P. Pollution Control Board. Treated effluent water is being used for dust suppression in coal yard. Principle of operation of effluent treatment plant is neutralization, settling and filtration.

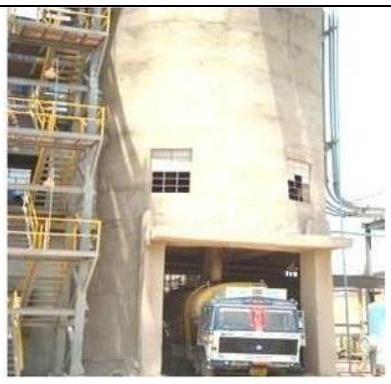
7. To minimize the fugitive dust generation from the process Dry dense phase ash handling & transportation system has been installed with closed and covered circuit to avoid any spillage and emission of ash in the atmosphere.
8. Fly ash in dry form is being transported pneumatically to concrete ash silo. From here the ash is being taken to cement plant in closed tankers for manufacturing of fly ash-based Portland pozzolana cement (PPC). By blending of fly ash in cement, Vikram cement is able to save equivalent amount of clinker. And ultimately limestone & fossil fuels.
9. fly ash generated from the boilers is being conveyed pneumatically through pipes into closed fly ash silo for their temporary storage. After which the fly ash is being transported in closed tankers to cement plant for its utilization in cement manufacturing process. We are ensuring

100% utilization of flyash generated from TPP into the cement plant. During the period of FY: 2022-23 we have utilized 28115 MT of flyash generated from out TPP in cement manufacturing process in our premises itself.

Fly ash generation & utilization period FY-2022-23

Month	Opening Stock in MT		Generated Quantity in MT		Consumption Quantity in MT		Closing Stock in MT	
	Fly Ash	Bed Ash	Fly Ash	Bed Ash	Fly Ash	Bed Ash	Fly Ash	Bed Ash
Apr-22	234.88	88.53	3024.55	631.60	3097.55	477.61	161.88	242.53
May-22	161.88	242.53	1508.38	0.00	1595.32	232.09	74.94	10.44
Jun-22	74.94	10.44	1772.40	0.00	1649.62	0.00	197.72	10.44
Jul-22	197.72	10.44	974.11	0.00	1163.61	0.00	8.22	10.44
Aug-22	8.22	10.44	2017.47	164.20	1935.99	158.63	89.70	16.01
Sep-22	89.70	16.01	1735.60	272.22	1673.52	229.67	151.78	58.56
Oct-22	151.78	58.56	1250.50	312.63	1198.98	304.88	203.31	66.32
Nov-22	203.31	66.32	1578.72	394.69	1638.34	429.92	143.69	31.09
Dec-22	143.69	31.09	1919.63	1090.54	1921.82	1015.90	141.50	105.74
Jan-23	141.50	105.74	1652.73	781.21	1622.70	820.78	171.53	66.17
Feb-23	171.53	66.17	2697.28	383.59	2566.76	393.92	302.06	55.84
Mar-23	302.06	55.84	3500.00	840.35	3439.02	548.07	363.04	348.12

Closed fly ash silo for storage



Loading of fly ash into closed tankers from the fly ash silos

Pneumatically unloading of Fly Ash

10. Vikram Cement has installed state of the art limestone injection system in our boilers for injecting limestone to control gases emission in this process, by product anhydrite gypsum is being produced in the form of Bed Ash which is extracted in dry form and is being successfully utilized in cement manufacturing process replacing – gypsum.
11. We have using pet-coke in our TPP from January,2009 onwards. We are maintaining the desired specifications for the quality of pet coke at all the time. The existing facilities of cement plant for pet-coke unloading/ stacking are being utilized for TPP.

Water Conservation Initiative

At one stage this manufacturing location used to procure water in tankers to run the facility. Subsequently, several small and large initiatives were undertaken. We have maintained Zero discharge our Cement Plant & Treated water used in horticulture & dust suppression. Maintained ZLD at our Plant. Now Vikram Cement a unit of Ultratech Cement is known for its rain water harvesting processes & the approach replicated across many other locations. UltraTech Cement was certified as 3.80 times water positive FY 2021-22 (third party audit by EY); whereas as Vikram Cement has been certified highest water positive index of 5.47 times FY 2021-22 & FY 2022-23 - 5.64 times at individual category. The total water storing capacity is now 932964 Cu. Mtrs with a recharge capacity of 2981878 m3. The last measured water stored showed 7454694 m3. The stored water is used not only to maintain the plant processes but also a township & an excellent biodiversity in the surrounding locations with nearly hundred different flora species & more than 40 different species of wild fauna. Habitats have regenerated. The drinking & domestic needs of the several villages are also met.

Water Harvested Pit VCLM - I

Water Harvested Pit VCLM - II

PART – H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Following measures have been adopted for abatement of pollution, conservation of natural resources:

1. Conservation of Limestone:

Limestone is being used for the manufacturing of cement by the proper blending of different grade of limestone for preparation of proper raw mix design which can be produced a good quality of cement. The raw mix design has been prepared in such a way that it reduce the limestone stone saturation factor by which substantial quality of limestone has been conserved. In the same manner as per the Regulation of Bureau of Indian Standard (BIS).

2. Conservation of Mineral Gypsum

Utilization of Chemical Gypsum

We have used fertilizer industry byproduct which is waste in nature and its chemical properties are as good gypsum Chemical gypsum FY 2022-23 (8986 MT) was used for cement manufacturing process.

3. Conservation of Fossil Fuel

(a) Utilization of Plastic waste as AFR

We have used high calorific value waste in co-processed FY 22-23 (69413.6 MT) AFR i.e. Plastic Waste (22182.84 MT), Agro Waste (33153.54 MT), Carbon Black (5575.04 MT), FMCG (429.84 MT), Tyre Chip/ Tyre

dust/ Rubber chip/ Powder (3509.62 MT), MSW RDF (3800.20 Mt), Fibre Waste (762.52 MT) which is Plastic waste received from within state.

(b) Utilization of Pet coke

We have used refinery industry byproduct which is waste in nature and its chemical properties are as good fuel pet coke FY 2022-23 (154357MT) was used pet coke for replace of coal.

Utilization of Pet coke (Waste of Petroleum refineries):

FY	Quantity Used (MT)
2017-18	249431
2018-19	288101
2019-20	201431
2020-21	148439
2021-22	83887
2022-23	154357

(c) Utilization of Red Mud

We have used Aluminum industry byproduct which is waste in nature and its chemical properties are as good Raw Material Red Mud FY 2022-23 (19902 MT) was used Red mud for replace of Laterite & Bauxite.

Online real time Ambient Air Quality Monitoring Station (AAQMS) & CEMS:

Commissioned 02 nos. of CAAQMS at Admin Building Near Durga Colony Upwind & VCML – II Near Work Shop Downwind direction in plant premise & 3 nos. CEMS at Raw Mill & Kiln Stack of both Unit as per the approved location by RO, MPPCB, Ujjain. The transmission of real time data started displaying in CPCB/MPPCB website & plant main gate for public domain for CAAQMS & for CEMS. 08 nos. Continuous monitoring system (Opacity meter) has been installed in all major stacks i.e. Raw mill & Kiln(U-I, II & III), Coal mill (U-I, II & III), Cooler (U-I, II & III), Cement mill (U-I, II & III). Adequate air pollution control system has already been installed. Stack emissions level of particulate matter are kept below 30 mg/Nm3.On-line stack monitoring station (CEMS) is installed & monitoring data submitted to MPPCB/CPCB monthly basis. Emission data of stacks is linked to CPCB & MPPCB website. Installed Pressure, Temperature & Flow Connectivity at CPCB RTDMS Portal both Cement Plant & TPP. We have installed 01 no. (30X) Night Vision for Stack Emission Monitoring & pH, Temperature & TSS Analyzer same has been connected to Environment Surveillance Centre, MPPCB & CPCB RTDMS Portal.
We have installed 1 no. of CAAQMS at Neemuch Civil District Hospital for Public health.

CAAQMS – Neemuch Civil Hospital

CAAQMS – VCLM -2 Near Workshop

CAAQMS & CEMS Display Board - Main Gate

Online PH & Turbidity meter fitted at STP

Air Pollution Control Equipment's including ESP - 03 nos. & Bag House – 6 nos. & RABH - 1 no. / Bag Filters (113 nos.) installed in such Cement Plants Both for Captive Power Plants & Make, number of fields, quantity installed of ESPs and Make, Number of Bags for Bag House / Filters.

Location of APCE	Type of APCE		Design Efficiency	Make	Nos. of Field	No. of Bags	Bag House Comparment
	Existing	Designed mg/nm3					
Line - 1							
Raw Mill + Kiln	Bag House	30	99.99 %	HIMENVIRO		1625	8
Coal Mill	Bag filter	30	99.99 %	ANDREW YULE	-	400	-
Cooler	ESP	30	99.95 %	Thermax	3	-	-
Cement Mill	Bag House	30	99.99 %	THERMAX	-	420	2
Line -2							
Raw Mill + Kiln	Bag House	30	99.99 %	HIMENVIRO		1625	8
Coal Mill	Bag filter	30	99.99 %	THERMAX	-	648	-
Cooler	ESP	30	99.95 %	Thermax	3	3	-
Cement Mill	Bag House	30	99.99 %	THERMAX	-	420	2
Line - 3							
Raw Mill + Kiln	RABH	30	99.99 %	HIMENVIRO	-	4320	20
Coal Mill	Bag filter	30	99.99 %	ANDREW YULE	-	1152	-
Cooler	ESP	30	99.95 %	REITZ TURBO VALENT	3	3	-
Cement Mill	Bag House	30	99.99 %	THERMAX	-	420	2
CPP (2 X 23 MW)							
CPP (2X23 MW)	Bag House	50	99.99 %	CHINA	-	1152	4 each

Environment Expenditures FY 2022-23

In current financial year of 2022-23 an expenditure of about Rs. 1389.99 lacs have been made for better environment management. The expenditure statement and proposal offer an encouraging picture of environmental quality maintained in the current year and hopefully to be managed in future Expenditure on Environmental Protection.

Expenditure incurred on Environmental Protection for the period of FY: 2022-2023		
S. No.	**Activities**	**Expenditure (in Lakh)**
1	Third Party NABL Lab / SPCB Monitoring	12.12
2	Maintenance Cost of the Air Pollution Control Devises for Bag House, BF, ESP etc.	304.13
3	Total Cost of Electricity Consumption for Bag House, BF, ESP etc. & Neemuch AAQMS	907.09
4	Legal Fees (CTO/CCA, CTE, HWA, EPR Co-Processing & EC etc.)	26.53
5	Sweeping Machine Running & maintenance Cost	26.98
7	SO2 reduction in TPP (Lime Dozing Cost)	20.01
8	Environment Monitoring Equipment's Calibration	0.13

9	Digital Water Flow Meter Calibration	1.18
11	Leachate study AFR Area	1.00
14	CEMS & CAAQM Maintenance, Operation, Connectivity & Calibration Cost	14.94
15	Operation & maintenance of STP & Neutralization Pit	24.90
16	Tree Plantation and Maintenance	2.46
17	Environment Monitoring Manpower	0.45
18	Celebration of WED - 2022 & Environment related education & training of personnel employed for awareness	0.02
19	Bio-Medical Waste Management & Waste Collection of Plant & Colony	6.00
20	Deployment of Water Tankers for Dust Suppression & Tarpaulin Covering	42.05
Total Environmental Protection Expenditures Incurred During The FY: 2022-23 (Lakh)		**1389.99**
Total Environmental Protection Expenditures Incurred During The FY: 2022-23 (Cr.)		**13.89**

CSR activities: A dedicated team of Rural Development Department is working for CSR at surrounding area covering six Panchayats / Group gram panchayats covering total 16 villages:

- **Total Coverage Gram Panchayats – 6**
  Khor, Suvakheda, Damodarpura, Kesarpura, Sarwaniya Masaniya, Barkheda Kamliya
- **Villages – 16** (Khor, Kheda Rathore, Gujarkhedi Talab, Sarvaniya Masaniya, Borkhedi Talab, Achalavda, Nagda, Damodarpura, Kesharpura, Kanka, Suvakheda, Barkheda Kamliya, Morka, Maheshpuriya, Kundala, Segwa.
- **Families–** 4132
- **Population:** 21183

Major Intervention Areas – Education Upliftment, Community Health, Sustainable Livelihood, Infrastructure Development, Social Welfare. CSR Expenditure in FY -2022-23

CSR Expenditure for the Period: April -2022 to March - 2023	
Particulars	**Expenditure (in Lac)**
Education Upliftment	274.81
Community Health	208.41
Sustainable Livelihood	62.23
Infrastructure Development	53.75
Social Welfare	5.42
Total Exp. (in Lac)	**604.62**

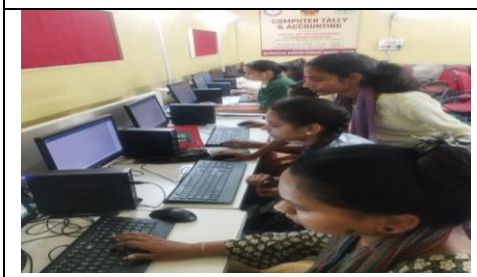
*** This is including Cement Plant, Mines & CPP.**

List of major activities completed in FY-2022-23

280 indigenous saplings were planted to development of Miyawaki Forest.

- 27 women received Carpet weaving, training and skill building centre at Athana Village, Tehsil-Jawad.

- 18 women trained in tailoring & handgloves making
- 11450 vegetable plants & seeds distributed to the villagers through Krishi Vigyan Kendra, Neemuch.
- 43 employees motivated to develop kitchen gardens in the colony
- 186 Nos kitchen garden developed by the villagers
- 140 Blanket distributed at Deaf & Dumb school, Neemuch & Sarwaniya Masania, Borkhedi, Kesharpura & Damodarpura villages.
- 250 Old dress distributed to ethnic population under Sahanbhawatu Scheme at Barkheda Kamliya & Suvakheda Panchayat
- 200 Women participated in celebration of International Women's Day.
- Mass Cleaning Campaign carried out during Swachta Abhiyan in nearby villages.
- 640 School Bag Convertible to Desk Distributed
- Helps to improve Eye Sight, Concentration & Physical Posture
- Vikram Jyoti Mega Cataract Camp - 25 Years of Govt. of India Partnership, 24741 Regained Vision, 1589 Hours of Annual Volunteer Engagement, 755 Villages Served, One Mission "Zero Cataract Induced Blindness"
- 110 Donors Donated Blood to save Life
- Vegetable Seeds Distribution across 38 Anganwadi For Poshan Vatika 174 Nutrition Kit Distributed to Expecting & Nursing Mothers
- 3 Km Piped Water Supply from Kundla Village to Barkheda – Apprising water level in Well – Benefitting 500 people everyday
- Cattle Breed Improvement - 861 Free Artificial Insemination carried out every year, 2500 Cattles vaccinated during Lumpy Virus in partnership with Block Vet Hospital Jawad, 230 affected Cattles provided medicine and monitored to healthy recovery (Lumpy Virus), 17 Village level diary supported
- Empowering Women Through Skilled Training in Computer Tally ~ 30 Women
- District Veterinary Department & Vikram Cement Partnership
- 340 Cattle Received Free Medicine for ailments (Deworming & Ticks), 128 Cattle received Vaccine, 34 Received Sterility Treatment, 08 Artificial Insemination
- Nagda Amritra Sarovar - 2000 Cubic Meter Soil Removed, The area had witnessed less water stress, Migratory birds visits increased with Australian Iibis, White Breasted water hen, red wattled lapwing, great cormorant etc.
- Water Harvesting Outside Fence - 1.18 Lakh Cubic Meter Water Harvested Annually, 401.3 Ha of Additional Land brought under Irrigation, 400 Ha of Land under Double Cropping System, 363 Farming Families Benefitted across 16 Villages
- 280 m CC Road of Kesharpura, Development of Khor Play Ground & Cremation Ground, Development of D Wall at Morka For Water Harvest, 550 Street Lights installed across 7 Villages of Khor & Sarwaniya Masani
- Improving Sanitation through construction of drain.
- Construction of Pre Cast Boundary Wall at Nayagoun Gadoliya Basti Pry School
- Smart Stick to Empower Visually Challenged
- Volunteering Initiatives For Mass Plantation Drive
- 6 Sports Kits distributed across High Schools

 Women Empowerment – Carpet weaving	 Sustainable Livelihood Program	 Aditya Gyan Shakti School Free Education up to Middle School
	 Health Care and check-up camps	 Vikram Jyoti Mega Cataract Camp
 Blood Donate Camp	 Vegetable Seeds Distribution	 3 Km Piped Water Supply From Kundla Village to Barkheda – Apprising water level in Well
 Cattle Breed Improvement	 Animal vaccination	 Animal vaccination
 Empowering Women Through Skilled Training in Computer Tally	 Beauty & Wellness Training	 Industrial Garment Stitching Training

Nagda Amrit Sarovar

CC Road Construction at Nayagon

CC Road Construction at Suwakheda

Construction of Pre Cast Boundary Wall at Nayagoun Gadoliya Basti Pry School

6 Sports Kits distributed across High Schools

PART – I

Any other particulars for improving the quality of the environment.

The unit is acknowledged pioneer of TPM in Indian subcontinent and is first cement plant in India to obtain ISO 14001, EMS Certification from DNV, Netherlands. We have adopted management systems are as under:

Particulars	ISO 9001	ISO 14001	OHSAS 18001	SA 8000	ISO 27001	ISO 50001
Year of Certification	1994	1997	2001	2003	2010	2013
Certifying Agency	TUV Germany	DNV Netherlands	DNV Netherlands	DNV Netherlands	DNV United Kingdom	DNV Netherlands

Measures Taken to Abate/ Mitigate Environmental Pollution

For reduce point source emission (APCD)

We have state-of –the-art technology Pollution Control Equipment's (ESP's, Bag House, Bag Filters) in the process since commissioning of the plant. We have provided 03 ESP, 09 Bag House for controlling dust from the point source emission from the cement manufacturing process. We have also installed 03 Nos. low Nox burners to reduce Nox emission. 113 nos. Bag filters are provided at various transfer points of materials to avoid fugitive dust emission from process. Apart from these Pollution Control Equipment's, we have taken various steps which are as under:

- Concreting of all Internal Roads to avoid fugitive dust during vehicle movement.
- Three mobile Road Sweeping machines of Make-Tenant, USA and TPL, India
- Closed CSP is equipped with bag filter.

- Transportation of fly ash by closed tankers and mechanized handling system to avoid fugitive dust emission.
- All the major Pollution Control Equipment's are provided with energy meter.
- Installed dust Suppression System in coal transport to avoid dust generation.
- All material transportation belts are fully covered.
- We have installed 03 nos. low NOx burners and SNCR Ammonia dozing system in our kilns when using petcoke/lignite as fuel for the operation of Kilns. This system ensures reducing of NOx emissions for all the times of operation of Kiln.

	
Installation of Low NOx Burner	**Installed Selective Non catalytic Reduction (SNCR)**

- VCW has installed state of the art Limestone Injection System in our CPP Boilers. Unit is injecting limestone while using Pet Coke as a fuel for operation of the boilers. This system ensures quenching of sulphur dioxide emissions for more than 95% at all the times during operation of CPP.

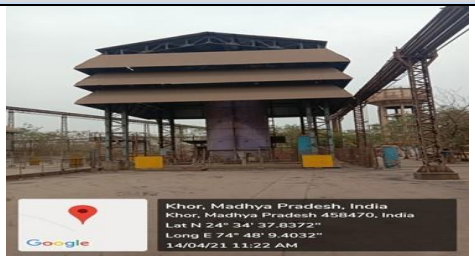
State of the Art Limestone Injection System Installed at our Boilers for Limestone Feeding while use Pet Coke / Lignite as Fuel for the Operation of Boilers

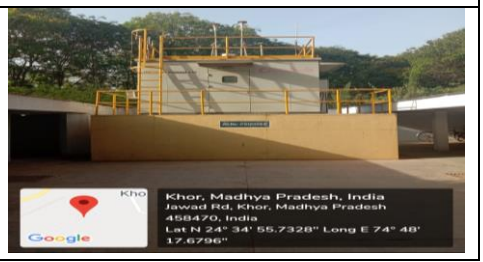
Measures taken for reduction of Fugitive dust emission

- Installation of Bag Filters: BF are installed at every transfer point and BF monitoring being done on monthly basis.
- All belt conveyers are fully covered.
- Water spraying on belt conveyer during materials conveying like limestone additive, Coal etc.
- Sweeping of paved road is being done regularly by mechanized sweeping machine.
- Covering of all raw materials and products.
- Storing of cement in close silos.
- Storing of clinker in close stock piles.
- Provided rubbers belt curtains at suitable location / opening.
- Regular monitoring of fugitive dust emission.
- All internal roads & shop floors are made pucca to control the fugitive dust generation.
- Regular water sprinkling is being done at Cement Plant.

- ❖ Installed 113 numbers of bag filters at material transfer points/conveyor belts/ junction points to minimize the fugitive dust generation during material handling and transportation.
- ❖ 03 Nos. of road Mechanical sweeping machine has been deployed to control the secondary fugitive dust generation.
- ❖ All the material transportation belts are fully covered to avoid any fugitive dust generation during the handling.
- ❖ Greenbelt developed along the road to minimize the fugitive dust generation.
- ❖ Enclosures are provided for unloading operations.
- ❖ Water is being sprayed during unloading of materials.
- ❖ All transfer point locations are fully enclosed.
- ❖ Atomized water spraying system is provided on raw material unloading hoppers.
- ❖ Water Spray on roads & other areas by Mobile tanker/water sprinklers.
- ❖ Dust collected from air pollution control equipment is totally recycled in the process.
- ❖ Fly ash is pumped directly from the tankers to silos pneumatically in closed loop or mechanically such that fugitive emissions do not occur.
- ❖ Dry fly ash is transported into closed system.
- ❖ The packing machine is equipped with dust extraction arrangement. Dust is being / captured in bag filters.

Air Pollution Control Device





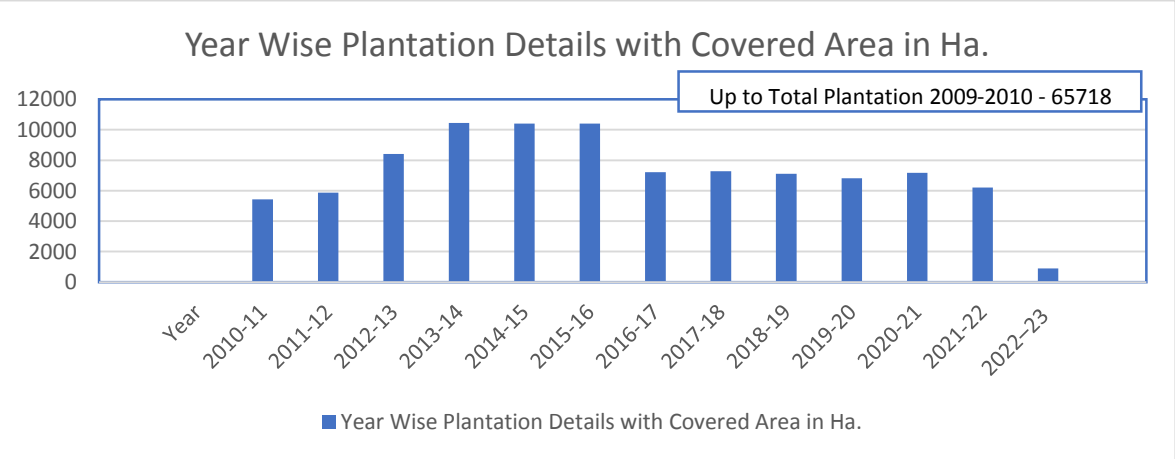
Plantation: Vikram Cement works has already planted about 5.47 lacs of trees in its cement plant, limestone mines, Captive Power Plant & colonies with an average survival rate of 80.38 %. During the FY 2022-23 Total nos. plantation 902 sapling & about total 159410 nos. of sapling trees have been planted in the premises of Vikram Cement Works.

Year Wise Plantation Details with Covered Area in Ha.			
Year	**Total Nos. of Trees Planted**	**Total Nos. of Survival**	**Survival Rate (%)**
2009-10	65718	52651	79.96
2010-11	5423	4333	79.69
2011-12	5881	4796	82.27
2012-13	8413	6855	80.47
2013-14	10458	8505	82.06
2014-15	10402	8362	80.06
2015-16	10402	8331	79.26
2016-17	7207	5641	77.95
2017-18	7282	5780	79.19
2018-19	7112	5725	80.48
2019-20	6826	5477	79.98
2020-21	7175	5775	79.74
2021-22	6209	5044	81.50
2022–23	902	862	94.75
Total	**159410**	**128137**	**80.38**

Summary of Greenbelt/Plantation Area Cement with TPP up to March – 2023

Location	**Total Plantation**	**Survival Nos.**	**Total Survival Rate %**	**Green Belt area in Hectares**	**Species Name**
Plant	69000	55806	80.38	30.772	Neem. Shishum,Royal palm ,Mol shree, Golden durenta, Hibis cus, Peltophorum, Shishum Neem ,cassia semia,
TPP	21316	16907		10.000	
Staff Colony	46889	37456		21.516	

Worker Colony	22205	17967		10.170	Arjun, Teak,Amaltas, Red kaner,Tecoma guadi chud, Ashok pendula etc.
Total	**159410**	**128137**	**80.38**	**72.458**	



Plantation Photograph

Noise Abatement:

We are regularly monitored noise level at workplace zone and noise level are well within the prescribed limit. We have installed acoustic hoods, silencers, enclosures in various machineries. Total 64 nos. (Cement Plant Line 1 – 18 nos., Cement Plant Line 2 – 17 nos., Cement Plant Line 3 – 18 nos., Cement Mill 1 - 7 nos., Cement Mill 2 – 6 nos. & Cement Mill 3 – 3 nos.) blower silencers and 03 Nos. of high-speed cooling fans attached with silencer at clinker cooler area. 16 nos. blower silencers installed at Cement Mill area. The regular checking/maintenance of machineries are being done to reduce/control noise generation from the sources. All the personal protective equipment's (i.e. earplug/ear muffs etc) have been provided to the all workers/employees. VCW have adopted major initiatives to control the workplace noise level within limit i.e.: Installation of low noise generating compact compressors, provided acoustic hoods, ID/FD fans with silencers & enclosures. Unit is maintaining the workplace noise level well within the prescribed Factory Act,1948 standards 90 dB(A).

Installation of low noise generating Compact Compressors, Acoustic Hoods, ID/FD Fans Compressor

Ambient Noise level monitoring data (Period of April -2022 to March – 2023)

S. No.	Monitoring locations at plant boundary	Ambient Noise level data dB(A) Leq.					
		Day Time			Night Time		
		Min	Max	Avg	Min	Max	Avg
1	Near STP	62.9	67.4	64.8	49.6	56.0	53.6
2	Near Guest House	51.2	55.5	53.9	43.2	48.0	45.7
3	Behind 132 KV Yard	59.6	72.4	64.6	51.8	63.8	54.8
4	Near Store Yard	60.7	69.2	63.0	49.7	63.7	54.3
Prescribed Limit: Ambient Noise Level Standards (Industrial Area) 75 dB(A) Day Time (from 6.00 a.m. to 10.00 p.m.) & 70 dB(A) Night Time (from 10.00 p.m. to 6.00 a.m.).							

VCW have adopted control measures to keep the Workplace noise level within the prescribed limit of 90 dB(A) at the Cement Plant. Details of the same are given below: -

- Operator's cabins (control rooms) are properly equipped with noise control doors and observation windows to minimize noise level.
- Acoustic enclosures are provided on equipment's generating high noise like: Steam Turbine Generator Units (STGs).
- Operators working in the high-noise area i.e.: Boilers, Compressor Houses, Feed Pumps, Mills etc. are provided with proper Personal Protective Equipment's (PPEs) i.e.: Ear Plug, Ear Muffs etc.
- Noise barriers in the form of additional trees are being grown around the administrative blocks, technical site office and other such units. Developed the greenbelt around the Cement area to reduce the noise level.
- Critical vent valves are equipped with silencers to further reduce the noise level during gas venting.
- Training is being provided to all employees regularly in order to create the awareness about ill effects of noise.

Adopted Noise Control Measures:

- Exposure of high noise level to workers for long duration may lead to certain occupational diseases. To mitigate the high noise level, following measures are being adopted.
- Properly insulated enclosures are provided to equipment's making excessive noise.
- Improved silencers are provided in the equipment's generating high noise.
- Isolating continuous vibrating structures/ machines by proper and secured mountings.

- Proper maintenance, oiling and greasing of machines at regular intervals is being done to reduce generation of noise.
- Personal Protective Equipment's like earplugs and earmuffs is being provided to the workers exposed to high noise level.
- Green Belt of appropriate width inside the plant premises and at the plant boundary has been developed and same are maintained in future.
- Regular monitoring of noise level is being carried out and corrective measures in concerned machinery are being adapted accordingly to the possible extent.

Waste Management:

The Collected bio-degradable Waste of colony and plant canteen waste is used for the biogas generation. The basic concept of our design on process known as up flow Anaerobic Sludge Blanket (USAB), with Capacity of 100 kg/day. The produced is used in our Arrawali, Sukhanand, Durga Colony & plant Mess that will help in reduction in Green House Gases emissions.

Collection & segregation of bio-degradable and non-bio-degradable waste:

The collection & segregation of colony bio-degradable waste is being done in scientific manner. All colony household have been provided Three colour bins for collection & storage of Plastic Waste, bio-degradable & non-biodegradable type waste. The segregated waste in three forms and further are collected in two bags from door to door & the stored in tractor. The segregated bio-degradable waste collected and converted into bio-gas through installation of bio-gas generation plant. The bio-gas generated in being ultimately utilized in the Arawali, Sukhanand, Durga Colony & plant Mess as a substitute fuel.

Occupational Health Surveillance Programme:

Hospital (30 bedded) was available with 04 doctors along with staff for rendering medical services to the employees and population in and around the local villages. Occupational health check-up of workers has been carried out on 03 type of working area i.e. Factories Act Non-Technical ECG, CBC, LFT, KFT, Urine REM, Hazardous areas (High Dust) Chest X-Ray, Spirometry + Chest X-Ray, Blood Examination, Hazardous areas (High Noise areas) – Audiometry and Blood Examination, Food handlers as per Factories Act – Blood, ECG, Chest X-RAY, Sputum, HbsAg etc, Mines – As per Mines recommendation - Blood (F & PP), Audiometry, Spirometry, Chest X-Ray 14x17 etc. in continuation with Ophthalmic checkup Twice in a year (Staff and Contract workmen) Plant including Loco Operators, Fork Lift, Drivers, Points and Flag Man, Ambulance driver etc and Mines all Employees engaged in driving profession once in a year with Plant aged 45 and above. All the Employees undergone Hight Phobia examination as per norms. Done in last year Occupational Health checkup of 2867 persons has been done. The records are being maintained. PPEs including dust mask, ear plug have been provided. As per records, no occupation ailment has been observed so far.

For Permanent staff

S. No.	Category of Manpower as per work	Type of test carried out	Nos. of employees
1	Normal area Once in a year	ECG, CBC, LFT, KFT, Urine REM,	876
2	Dust Prone area Twice in a year	Audiometry, Spirometry on six monthly.	414
3	High Noise area	Audiometry on six monthly.	177
4	Food handlers Twice in a year	Blood, ECG, Chest X-RAY, Sputum, HbsAg etc	140
		Total Nos.	**687**

Environment Statement Report

For Contractor workmen

S. No.	Category of Manpower as per work	Type of test carried out	Nos. of employees
1	Normal area Once in a year	ECG, CBC, LFT, FT, Urine REM,	4388
2	Dust Prone area Twice in a year	Audiometry, Spirometry on six monthly.	1112
3	High Noise area	Audiometry on six monthly.	308
		Total Nos.	**2180**

Month wise Occupational Health Checkup

Particular	Apr.-22	May-22	Jun-22	Jul-22	Aug-22	Sept. 22	Oct-22	Nov-22	Dec.22	Jan.23	Feb.23	Mar.23	Total
PFT	-	-	56	34	110	67	15	20	25	40	45	15	427
Audiometry	23	12	34	23	46	43	27	11	11	10	12	16	233
Eye Test	-	-	182	-	-	-	-	-	182	-	-	-	364
MSD	-	-	-	-	-	-	-	-	-	-	-	-	0
Dermatitis	-	-	-	-	-	-	-	-	-	-	-	-	0
Sputum test	-	-	56	34	110	67	15	20	25	40	45	15	427

ENVIRONMENT MANAGEMENT CELL:

In order to maintain the environmental quality within the standards, regular monitoring of various environmental components is being done. Vikram Cement Works have a full-fledged Environmental Management Cell (EMC) reporting directly to Unit Head. The EMC team is being taking care of pollution monitoring aspects and implementation of control measures as per the stipulated conditions in the Consent Orders or Authorization issued by the various statutory bodies i.e. State Pollution Control Board, Central Pollution Control Board, Ministry of Environment & Forest, Central Ground Water Authority etc. A team of qualified and efficient engineers with technical staff has deputed for maintenance, up keeping and monitoring the pollution control equipment.

OBJECTIVES OF ENVIRONMENT CELL:

- Monitoring of stacks, ambient air quality, fugitive emission, noise, water, testing waste water quality.
- Compliance of conditions given in various statutory clearances and conducting different studies related with Environment
- Preparation and submission of Environment Statement, monthly, quarterly, half yearly monitoring report & yearly return.
- Compliance of other regulatory requirements
- Implement water conservation and harvesting initiates.
- Development of environmental awareness among the plant person as well as at surrounding schools & villages.
- Highlighting major environmental activities to external agencies
- Ensure Implementations of newly notified guidelines.

KEY ACTIVITIES OF ENVIRONMENT CELL

- Development of Environmental Feed Back & Reporting and reviewing system, where information flows from bottom to top.
- Monitoring / Measurement of various parameters like Air, Water and Noise etc.
- Inspection of bag filters installed at transfer points.

- Full scale treatment of sewage and management of treated sewage and check the treated waste water quality of STP performance.
- Arrange for repairs and maintenance of pollution monitoring and control systems.
- Co-ordination with various departments for effective implementation of pollution control measures to ensure statutory compliance.
- Organize testing of Water, Hazardous waste from external agencies to ensure compliance.
- Calibration of monitoring equipments.

We have an organizational structure for Environment Management to carry out implementation of Environment measures envisaged at site in enclosed guidance of Corporate Environment Head and under direct supervision of Unit Head

Corporate Environment policy and organization is as under:

ADITYA BIRLA

UltraTech

Corporate Environment Policy

UltraTech Cement Ltd. has always been conscious about the impact of our activities in spheres of employee welfare measures, social and community initiatives and environment sustainability. This environmental policy represents our general position on environmental issues, the policies and practices we apply in conducting our business. We make continuous efforts to be compliant with all applicable local environmental laws and regulations.

We will proactively commit towards:

1. Conducting all operations in accordance to new and recent environmental and statutory laws and regulations.
2. Efficient and sustainable extraction and utilization of natural resources.
3. Adoption and application of state of the art technology to minimize environmental impacts of our operation.
4. Waste minimization through focus on end-of-life management by incorporating waste to energy/fuel systems through safe and approved methods and ensuring to become Plastic Positive.
5. Influence our suppliers to adopt practices for resource conservation and waste reduction.
6. Limiting the dependency on coal-based power by increasing the share of renewable energy and Waste Heat Recover Systems (WHRS).
7. Make continuous efforts to minimize fresh water consumption by increased use of harvested/ recycled water in our operations across all UTCL units and contributing towards becoming Water Positive.
8. Implement and continually improve the Environmental Management System across all our operations.
9. Monitor and report the environmental performance of all our units through regular inspections and audits for corrective actions and continual improvement.
10. Reporting of compliances and non-compliances to the concerned regulatory authorities and other stakeholders with measures to address non-compliances on priority

Kailash Jhanwar
Managing Director

November 2020

For the effective implementation of the environment policy, we shall:

a) Set objective-targets, develop, implement and maintain management standards and systems, and go beyond compliance of the relevant industry standards, legal and other requirements.
b) Commit to monitoring resource consumption on a regular basis and seek opportunities to reduce use of materials, energy, waste etc. through efficiency measures wherever possible.
c) Develop and propagate environmental awareness amongst employees and other stakeholders including surrounding communities.
d) Undertake the review of the Environmental Policy and Environmental Management Plan periodically.
e) Communicate the environmental commitment and performance of the organization to our stakeholders.
f) Abide to follow the Environment Policy through a robust Organizational Structure, given as follows:

Figure 1: Hierarchical System to address Environmental Issues

We, hereby declare that we are responsible and accountable for the deployment of this policy. We shall remain committed at all times for its effective implementation.

Kailash Jhanwar
Managing Director

November 2020

Corporate Environment Policy

Environment Cell			
TECHNICAL STAFF			
1.	Name	:	**Mr. Bijneswar Mohanty**
	Designation	:	Joint Executive President & Unit Head
	Qualifications	:	B. E. (Electrical)
2.	Name	:	**Mr. Shailendra Pandey**
	Designation	:	Vice President (FH-Technical &TPP)
	Qualifications	:	B. E. (Electrical)
3.	Name	:	**Dr. Rina Shinde**
	Designation	:	General Manager (QC& Env)
	Qualifications	:	M.Sc & PhD (Chemistry)
4	Name	:	**Dr. Anoop Singh Gaharwar**
	Designation	:	Section Head - Environment
	Qualification	:	M.Sc & PhD (Environment)
SUPPORTING TECHNICAL STAFF			
5	Name	:	**Mr. Gaurav Nagar**
	Designation	:	Officer (Environment)
	Qualification	:	M.Sc. – Environmental Science
Workmen			
6	Name	:	**Mr. Sardar Singh**
	Designation	:	Attendant

7	Name	:	**Mr. Shyam Lal**
	Designation	:	Monitoring Assistant / Labour
8	Name	:	**Mr. Tejpal Singh**
	Designation	:	Environment Monitoring Van Operator

POLLUTION MONITORING EQUIPMENTS AND FACILITIES

S.No.	Name of Equipments	Mode/Type	Make	Quantity
1.	High Volume Sampler	APM – 415/430	Envirotech, New Delhi	7 Nos.
2.	Respirable Dust Sampler	APM – 460	Envirotech, New Delhi	8 Nos.
3.	Personal Sampler with cyclone system	APM – 800	Envirotech, New Delhi	2 Nos.
4.	Stack Monitoring Kit	APM – 620	Envirotech, New Delhi	3 Nos.
5.	Velocity Kit	APM – 602	Envirotech, New Delhi	1 No.
6.	Pitot Tube (1,1.5 & 2 m Length)	S Type	Envirotech, New Delhi	One of each length
7.	Noise level meter	2200	Quest Technology	2 Nos.
8.	Flue Gas Analyser	KM-9106	Quintox	01 No.
9.	Weighing Balance	BT – 224S	Sartorius	01 No.
10.	$PM_{2.5}$ & PM_{10} Sampler	APM 550	Envirotech, New Delhi	11 Nos.
11.	Cyclone	APM – 602	Envirotech, New Delhi	02 Nos.

Annexure-1

1. **Source of water:** Rain Water Harvested at Mine Pits
2. **Month wise water consumption:**

Month	Industrial cooling, Spraying in mine pits or Boiler feeds	Domestic Purposes	STP & Neutralization Pit Treated Water
Apr-22	126657	33273	4695
May-22	130404	36938	4782.1
Jun-22	111701	36756	19455
Jul-22	123553	37047	8666.4
Aug-22	153045	39800	14327.7
Sep-22	97138.9	30593.9	6746
Oct-22	95203.1	32437.1	6405.3
Nov-22	111552	32340	4898
Dec-22	134733	32329	3941.7
Jan-23	126615	29430	4122
Feb-23	129616	32527	4875
Mar-23	136552	31929	4281
Total	**1476770**	**405400**	**87195.2**