

JKCW/MGR/ESR/CP-L2/FY-23-24

Date: 27/09/2024

To
The Member Secretary
Rajasthan State Pollution Control Board
4. Industrial Area Jhalana Doongri
Jaipur-302004 (Raj)

Sub: Submission of Environmental Statement Report in Form-V for Financial Year 2023-2024 by M/s JK Cement Works, Mangrol, **Cement Plant Line-2** in Mangrol Village, Tehsil Nimbahera, Chittorgarh and Rajasthan-312601.

Ref.:
F(CPM)/Chittorgarh(Nimbahera)/11(1)/2018-2019/1194-1196
Order No : 2022-2023/CPM/8584 Dated 15th July 2022

Dear Sir,

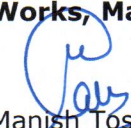
With reference to the above cited subject, we M/s. J.K. Cement Works, Mangrol, **Cement Plant Line-2** hereby submitting the Environmental Statement Report in Form-V for Financial Year 2023-2024 as per, Rule No 14 of The Environment (Protection) Rules, 1986, EC & CTO order.

This is for your information please.

Thanking You

Yours Faithfully
For J.K. Cement Works, Mangrol




Manish Toshniwal
Unit Head (Operations).

Enol: Form-V Environment Statement report.

Copy: The Regional Officer, Rajasthan State Pollution Control Board, Near FCI Godown, Chanderiya, Dist - Chittorgarh (Raj)-312021.



ENVIRONMENTAL STATEMENT
FORM - V

Environmental Statement for the financial year 2023-2024, ending the 31st March 2024

PART-A

Name an address of the owner/occupier of the industry operation or process	Manish Toshniwal Unit Head (Operations) J.K. Cement Works, Mangrol Cement Plant (Unit-II) Village Mangrol, Tehsil Nimbahera District Chittorgarh Rajasthan, Pin Code- 312617
Industry category Primary - (STC Code) Secondary - (STC Code)	Primary
Production capacity	Clinker : 2.15 MMTPA Cement : 2.50 MMTPA
Year of establishment-	Year 2014
Date of last environmental statement submitted	23.09.2024

PART-B

WATER AND RAW MATERIAL CONSUMPTION

WATER CONSUMPTION in m3/day

Process	: -	NIL
Cooling	: -	940 m3/day (Cooling-630, Dust Suppression-100, Plantation- 210)
Domestic	: -	20 m3/day

Name of products	Process water consumption per unit of products (For cooling & domestic)	
	During the previous financial year (2022-23) (KL/MT)	During the current financial year (2024-24) (KL/MT)
1. CEMENT	0.1107	0.0888

*Specific water consumption for cement production is combined for Unit-1, Unit-2 & Unit-3

RAW MATERIAL CONSUMPTION

Name of raw material	Name of products	Consumption of raw material per unit of output	
		During the previous financial year (2022-23)	During the current financial year (2023-24)
Limestone	Clinker	1.4130	1.4308
Lime Sludge		0.0003	0.0007
Red Ochre		0.0306	0.0032
Alumina Dust		0.000	0.0000
Laterite		0.0279	0.0302
Lead Zinc Slag		0.0001	0.0003
Iron Sludge		0.0000	0.0001
Red Mud		0.0266	0.0271
REDCLAY		0.000	0.0086
BENTONITE		0.000	0.0008
WOLLASTONITE		0.000	0.0007
BAUXITE		0.0025	0.0202
Coal		0.0294	0.0017
Petcoke		0.0652	0.080
Alternative Fuel Replacement & Alternative Raw Material		0.0647	0.0688
Gypsum	Cement	0.094	0.101
Fly Ash% in Cement		29.81 %	31.80
Alternative Raw Material & Performance improver		0.030	0.0315

*Alternative Raw Material & Performance improver consumption for Cement production is combined for Unit-1, 2 & 3.

*Line-II Clinker Production: **1741262.00.00** Tons

PART-C POLLUTION DISCHARGE TO ENVIRONMENT / UNIT OF OUTPUT

Pollutants	Quantity of pollutants discharged (kg/ ton of Clinker)	Concentration of pollutants in discharge (mg/Nm ³)	Percentage of variation from prescribed standards with reasons

Water	<p>Cement plant is being operated on dry process technology, hence no liquid effluent is generated.</p> <p>Domestic waste water generated from the office toilet and canteen is being treated in STP and treated water used in plantation & horticulture purposes within the premises.</p>
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MONTH & YEAR	KILN & RABH STACK- LINE-II			COOLER STACK LINE-II	COAL MILL STACK LINE-II	CEMENT MILL STACK-2	CEMENT MILL STACK-4	CEMENT MILL STACK-3
	PM	SO2	NOX	PM	PM	PM	PM	PM
APRIL-2023	7.5	17.66	355.61	17.1	10.1	15.1	11.4	8.7
MAY-2023	8.4	6.56	335.42	13.3	11.9	14.1	9.2	9.8
JUNE-2023	7.6	8.04	423.16	14	15.7	12.4	8.1	14.4
JULY-2023	10.2	11.19	252.99	12.3	12.1	15.7	12.4	13.2
AUGUST-2023	0.0	0.0	0.0	0.0	0.0	14.9	13	11.4
SEPTEMBER-2023	10.1	5.18	358.71	11.8	13.8	12.5	11.1	14.6
OCTOBER-2023	9.3	5.24	488.98	13.2	11.9	11.7	12.9	15.6
NOVEMBER-2023	11.2	3.67	498.01	9.5	15.1	14.3	17.2	12.2
DECEMBER-2023	8.8	0.64	275.16	10.2	16.4	13.2	18.7	16.7
JANUARY-2024	10.3	3.26	145.96	12.5	15.9	13.8	19.7	16.7
FEBRUARY-2024	10.3	1.23	253.68	13.5	12.6	17.9	16.6	19.3
MARCH-2024	9.3	5.94	288.86	16.9	11.8	11.5	14.1	10.9
AVERAGE	9	6	334	13	13	14	14	14
% OF DEVIATION FROM STANDARD	-71	-94	-62	-60	-59	-54	-42	-55
Tons Per Year	32.2	22	1199.3	18.5	1.48	1.99	25.9	21

Month & Year	NEAR TIME OFFICE				NEAR THERMAL POWER PLANT			
	PM10	PM2.5	SO2	NOX	PM10	PM2.5	SO2	NOX
April-2023	72.5	34.4	10.6	32.3	76.2	23.7	9.8	14.2
May-2023	74.8	35.3	11.6	19.9	73.4	24.9	12.9	25.5
June-2023	71.6	25.1	11.2	24.2	72.5	21.6	13.5	24.6
July-2023	71.3	31.9	10.6	16.5	72.1	35	15.8	22.6
August-2023	75.3	32.8	10.2	22.7	72.9	27.4	12.4	20.1
September-2023	70.3	30.5	11.5	23.5	73.5	26.1	11.5	20.1

October-2023	68.9	22.4	11.7	25.1	71.7	21.6	13.3	24.2
November-2023	59.5	33.7	10.6	25.1	71.5	21.6	13.2	23.5
December-2023	52.5	36.4	11.2	22.6	74.1	26.4	16.1	25.2
January-2024	58.7	32	9.8	21	72.3	24.2	11.8	22.5
February-2024	63.4	36	10.4	22	73.5	25.3	12.5	23.8
March-2024	68.2	38	11.6	25	74	26.8	15	24.5
AVERAGE	67.25	32.38	10.92	23.33	73.14	25.38	13.15	22.57
% of Deviation from Standard	-32.75	-46.04	-86.35	-70.84	-26.86	-57.69	-83.56	-71.79

Month & Year	NERA FACTORY GATE LINE-1				NEAR COLONY GUEST HOUSE			
	PM10	PM2.5	SO2	NOX	PM10	PM2.5	SO2	NOX
April-2023	75.6	26	8.8	19.1	68.1	27.9	11.3	20.4
May-2023	69.9	28.7	14.4	20.6	66.5	26.6	7.7	22.2
June-2023	78.1	29.6	11.3	23.8	64.3	23.3	8.4	16.7
July-2023	72.2	28.7	11.3	23.8	65.3	28.2	8.2	16.5
August-2023	70.4	29.1	14.8	23.9	68.5	24.7	9.5	17.5
September-2023	75.2	29.8	13.8	23.6	64.8	26.2	9.3	18.4
October-2023	75.9	27.1	11.4	24.8	59.6	19.8	8.6	16.6
November-2023	68.6	29.1	12.1	27	53.4	24	8.7	16.6
December-2023	71.2	23.2	14.5	21.7	51.2	22.5	9.6	14.1
January-2024	72.5	25.2	10.5	20.8	55.2	25.8	7.4	12.5
February-2024	73.2	26.5	13.5	21.6	57.4	26.4	8.9	14.8
March-2024	74	28.5	12.9	19.5	59.6	24.5	9.5	11.4
AVERAGE	73.07	27.63	12.44	22.52	61.158	24.992	8.925	16.475
% of Deviation from Standard	-26.93	-53.96	-84.45	-71.85	-38.84	-58.34	-88.84	-79.40

Month & Year	NEAR TIME OFFICE		NEAR THERMAL POWER PLANT		NERA FACTORY GATE LINE-1		NEAR COLONY GUEST HOUSE	
	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB
April-2023	65	52	61	54	54.3	46.2	54.30	45.60
May-2023	60.25	50.3	63.2	52.3	59.95	50.5	55.60	50.90
June-2023	64	52	65	51	56.2	46.5	56.80	45.80
July-2023	67	51	67	54	56.8	47.2	57.10	46.20
August-2023	64	53	60.5	48.5	55.2	44.5	57.90	46.50
September-2023	67	51	61.2	49	56.2	45.5	58.10	47.30

October-2023	62	50	62.4	50.1	57.8	46.8	58.60	47.90
November-2023	67	52	62.9	51.35	59.25	49.1	62.00	48.70
December-2023	62.5	49.5	60.8	51.2	58.2	48.5	59.60	48.40
January-2024	63	50.2	59.1	52.1	58.6	44.6	59.80	48.60
February-2024	59.05	47.5	63.2	50.2	59.45	48	60.85	47.65
March-2024	60.1	51	60.4	50.3	59	48.1	60.20	48.00
AVERAGE	63.41	50.79	62.23	51.17	57.58	47.13	58.40	47.63

* Common for plant & colony

STP treated water quality data

STP treated water Quality		
Parameters	Standards	Average results of YTD
pH	Between 5.5 to 9.0	7.4
Total Suspended solids	Not to exceed 100 mg/l	25.3
Biological Oxygen Demand (3 days at 27 Degree C)	Not to exceed 30 mg/l	15.2
Chemical Oxygen Demand	Not to exceed 250 mg/l	99.1
Oil & Grease	Not to exceed 10 mg/l	2.9
Ammoniacal Nitrogen (as N)	Not to exceed 50 mg/l	8.6
Sulfide (as S)	Not to exceed 2.0 mg/l	0.1

Noise level monitoring data

Month & Year	NEAR TIME OFFICE		NEAR THERMAL POWER PLANT		NERA FACTORY GATE LINE-1		NEAR COLONY GUEST HOUSE	
	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB
April-2023	65	52	61	54	54.3	46.2	54.30	45.60
May-2023	60.25	50.3	63.2	52.3	59.95	50.5	55.60	50.90
June-2023	64	52	65	51	56.2	46.5	56.80	45.80
July-2023	67	51	67	54	56.8	47.2	57.10	46.20
August-2023	64	53	60.5	48.5	55.2	44.5	57.90	46.50
September-2023	67	51	61.2	49	56.2	45.5	58.10	47.30
October-2023	62	50	62.4	50.1	57.8	46.8	58.60	47.90
November-2023	67	52	62.9	51.35	59.25	49.1	62.00	48.70
December-2023	62.5	49.5	60.8	51.2	58.2	48.5	59.60	48.40

January-2024	63	50.2	59.1	52.1	58.6	44.6	59.80	48.60
February-2024	59.05	47.5	63.2	50.2	59.45	48	60.85	47.65
March-2024	60.1	51	60.4	50.3	59	48.1	60.20	48.00
AVERAGE	63.41	50.79	62.23	51.17	57.58	47.13	58.40	47.63

PART-D

(As specified under Hazardous & Other Waste Management Rules-2016)

Hazardous waste	Total Quantity	
	During previous financial year (2022-23) (KL)	During current financial year (2023-24) (KL)
From process	Used oil (5.1)- 5.0* Waste oil (5.2)- 31.6*	Used oil (5.1)- *NIL Waste oil (5.2)- 5.2
From pollution Control facilities	Not applicable	Not applicable

*including Cement Plant Line-1, Line-2, & Line-3, CPP, WHRS, Mines & Colony. Hazardous waste generated is being sold through an authorized recycler by CPCB.

WASTE DESCRIPTION	WASTE TYPE	AUTHORIZATION NO	QTY SOLD	DATE OF SALE
VENDOR DETAILS	WASTE/RESIDUE CONTAINING OIL	RPCB/HWM/2020-2021//HSW/141/16	1.6	31/07/2024
VENDOR REGISTRATION NUMBER		RPCB/HWM/2020-2021//HSW/141/16	3.6	24/05/2023
TOTAL IN MT			5.2	

E-WASTE			
NAME OF THE AUTHORIZED VENDOR	AUTHORIZATION NO	QTY SOLD	DATE OF SALE
SAFDAR E-RECYCLING PVT LTD UTTAR PRADESH	H40531/C-1/E- WASTE-465/2019	1580	05/10/2023
SAFDAR E-RECYCLING PVT LTD UTTAR PRADESH	H40531/C-1/E- WASTE-465/2019	1440	27/10/2023
PAKEEZA TRADERS AURANGABAD	MPCB/ROCHQ/HSMD/AUTH/22/EW/31	2400	20/01/2024
TOTAL WEIGHT IN TONS		5.42	

PART-E

SOLID WASTE

S.No	Description	Total Quantity	
		During previous financial year (2021-22) (MT/Year)	During current financial year (2022-23) (MT/Year)
1	From process	Nil	Nil
2	From pollution control facility	Dust collected in ESP, bag house and bag filters are recycled to the system	
3	Quantity reutilized with in the unit	100%	100%

PART-F

PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.

1. Hazardous waste generated in the form of used / spent oil, waste / residue containing oil, which is stored in barrels at safe & dedicated areas and sold to authorized recyclers approved by Central Pollution Control Board.
2. Dust collected from pollution control equipment (i.e. from ESP, Bag house and Bag filter) is totally recycled in the process.

PART-G

IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION.

Cement manufacturing is a dry process technology, hence no effluent generated from the process. Which is cost effective and environmentally clean technology. The advantage of the dry process is also in fuel economy. The stack emissions from the plant are controlled by equipment like ESPs and Bag filters installed at various material transfer points to arrest the fugitive emissions. The particulate matter collected from the pollution control equipment is recycled in process and optimizes the cost of operation of pollution control equipment, conserving natural raw material and hence no impact on the environment.

PART-H

ADDITIONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT POLLUTION, PREVENTION OF POLLUTION.

1. SNCR system installed to control the NOx emission.

Sr.No.	BAG FILTER TAG ID	LOCATION	QUANTITY	REPLACED ON
1	522BF520	CM4-BAG HOUSE DIS. ELEV.	49	10-08-2023
2	532BF265(NEW)	CM4-BALL MILL OUT ELEV.	64	11-10-2023
3	612BF090	CM4-OPC SILO TOP	49	10-08-2023
4	522BF500	CM4 HRP Bag House	5	20.07.2023
5	483BF200	483BC200 Discharge	100	25.02.2024
6	481BF610	481BC600 Discharge	80	22.05.2024
7	481BF615	BC610 Discharge	48	06.02.2024
8	481BF640	BC620 Discharge	48	06.02.2024
9	473BF210	CLINKER SILO TOP	150	12.07.2023
10	353BF350	KILN FEED BIN	100	10.06.2023
11	461BF050	L-2 Coal Weigh feeder	120	30.06.2023
12	465BF190	L-2 Fine Coal Bin	24	26.06.2023
13	465BF290	L-2 Fine Coal Bin	24	26.06.2023
14	311BF150	L-2 Raw Mill Weigh Feeder	150	05.08.2023
15	321BF105	L-2 Raw mill feed	168	03.08.2023
16	321BF245	L-2 Raw Mill Air Slide	24	20.06.2023
17	321BF250	L-2 Raw Mill Air Slide	24	20.06.2023
18	341BF400	L-2 CF Silo top	72	03.08.2023
19	341BF410	L-2 Kiln Feed bin	72	03.08.2023
20	351BF400	L-2 Kiln Feed	48	03.08.2023
21	351BF410	L-2 PH top	30	03.08.2023
22	481BF460	L-2 Off Standard Silo top	10	08.02.2024
23	481BF140	L-2 Clinker Silo top	96	26.06.2023
24	331BF300	L-2 RMBH	1480	12.08.2023
25	461BF300	L-2 Coal Mill bag house	10	10.08.2023
26	463BF300	L-3 Coal Mill bag house	30	20.07.2023

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

<i>COST ELEMENT DESCRIP</i>	<i>COST CENTER DESCRIPTION</i>	Sum of AMOUNT
Pollution Control Expenses (Others)	Manufacturing OH	-266,805.34
	Pollution Control Expenses-Common	579,844
	Tilakhera Mines-environment	37,300
	Mangrol Mines-environment	39,300
Pollution Control Expenses (Others) Total		389,639
Water Tax	Manufacturing OH	2,632,832
	Administration OH	2,832
Water Tax Total		2,635,664
		2,635,664
Pollution Control Expenses (Statutory)	AFR SHREDDER_COMMON	21,246
	Manufacturing OH	351,944
	Pollution Control Expenses-Common	2,509,758
	Tilakhera Mines-environment	18,800
	Mangrol Mines-environment	21,269
Pollution Control Expenses (Statutory) Total		2,923,018
		2,923,018
		5,948,321

1. Monitoring of stack emission and ambient air and water quality is being done regularly as mentioned in consent to operate.
2. 4 nos. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) has been installed at the periphery of the plant.
3. Continuous Emission Monitoring Systems (CEMS) for PM, SO₂ & NO_x have been installed at the Kiln section and for monitoring of PM emission CEMS has been installed at stack coal mill, cooler & cement mill and real time data transfer to RSPCB & CPCB.
4. Bag filters have been installed at various material transfer points to control fugitive emission.
5. Cement is being manufactured in a dry process and there is no effluent generated from the process hence maintaining Zero Effluent Discharge unit.
6. Apart from this fly ash is purchased from nearby thermal power plants and used for cement production.
7. To utilize waste heat, Waste heat recovery system has been installed to generate green power.
8. Proper Housekeeping and cleaning is being done with the help of four road sweeping machines.
9. Domestic waste water generated is being treated in sewage treatment plants (STP). Treated water is utilized for plantation / horticulture development.

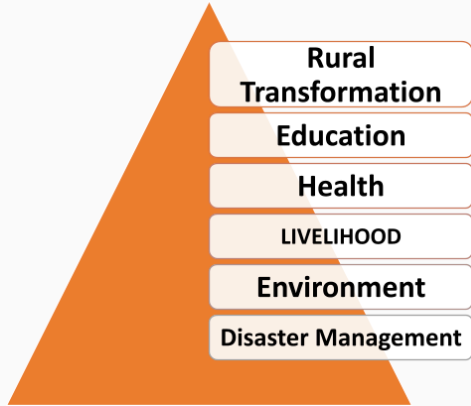
10. Cover shed Constructed to store the raw material, to avoid fugitive emission. Finish product stored in closed silo.
11. All Belt Conveyor belt are fully covered & also installed Bag filter at all material transfer points
12. 16 Rain water harvesting structures have been constructed in plant and colony areas to recharge ground water.
13. Cemented road constructed to avoid fugitive dust generation during the movement of vehicles.
14. Telemetry system installed for online ground water level monitoring.
15. Oxygen generation plant installed to catch the requirement of Oxygen during Covid-19
16. Green cover is not only pleasing to the eyes but also beneficial in many ways such as conservation of biodiversity, retention of soil moisture, recharge of ground water and moderation of micro climate. It has been derived that trees can act as carbon sinks & efficient biological filters, removing significant amounts of particulate pollution and has tremendous potential for improved air quality. The dust capturing phenomenon of plant species is a cost effective technology for reduction of particulate load in urban agglomerations. Raising of green belt at the project site with right types of species can serve as a useful buffer to contain the menace of pollution from different sources. Whatever space is available around the periphery of the plant will be planned to be utilized for green belt and the open spaces within the factory will be converted to green areas in the form of lawns or flowering plants. A wide range of plant species have been planted in and around the premises to help capture the fugitive emissions and noise levels attenuate the noise generated and improve the aesthetics. This wide range covers plants of fast growing type with thick canopy cover, perennial green nature, native origin and a large leaf area index.



Financial Year	FY 2019-2020	FY 2020-2021	FY 2021-2022	FY 2022-2023	FY 2023-2024
No of Saplings	11100	11369	13255	10928	1770



Rational



JK Cement CSR Works Impacting 45,000 People of ten Gram-Panchayat and 28 Villages situated around Plants & Mines Area.

Livelihood



- ✓ Sanitary Pad Production Unit @ Mangrol under "Sparsh" Program.
- ✓ Reach out to 20,000 women's through providing low sanitary pads.
- ✓ Beauty Parlour & Stitching Training Program @ Mangrol, Karunda & Bansa.
- ✓ Around 891 women trained under Surabhi Beauty Parlour Stitching & Training Program.



Livelihood



- ✓ Total 33004 AI done in 2022-23, PD-1443 and Calf born-9088.
- ✓ Vaccination drive for prevention from Lumpy disease in surrounding 40 nos. of villages in Nimbahera. Total animals vaccinated around 12000 nos.
- ✓ Lowest mortality in state.
- ✓ Organised 48 medical camp in 2022-23 and benefitted around 1300 families.



Health



Inauguration of Eye Checkup & Screening Camp in Collaboration with Gomabai Eye Hospital at RTC



Health



Inauguration of Mobile Medical Unit (MMU) at Fachar Ahran Village to facilitate near by communities. Around forty four adolescent girl's hemoglobin and iron checked by our team.



Health



Anganwari Infrastructure Development Program

Eighteen Anganwadi's renovated and developed in surrounding villages. And benefitting around 25000 population in 15 villages through this interventions.





Health



The village named Payeri, located in the Karunda Panchayat, comprises a total of 250 households. One of the major challenges faced by the community was the inadequate availability of water for drinking and domestic purposes.

To address this issue, a solution was implemented wherein all households were connected with water pipelines, and water was supplied through bore wells. The impact of this initiative has been significant, as people now have access to water at their doorstep. This has led to a reduction in the cost of water, saved time and effort, and improved the overall health and well-being of the community, particularly for women who are often burdened with the drudgery of fetching water

Drinking water distribution in Payeri village.



Environment



Social Return of Investment

Brief-A 1.2km pipeline laid from Karunda Mines to Karunda village pond.

Purpose-Agriculture and Cattle drinking
Beneficiaries-Around 150 families are directly benefiting.

Impact- Around 1500 people are directly or indirectly benefitting through this intervention, 7-8 wells and bore wells are getting recharged. Now in surrounding wells and bore well 12 water is available .

A initiative to make available water for agriculture through Water channel from Karunda Mines to village



constructed an Anicut at Maliyakhaera village



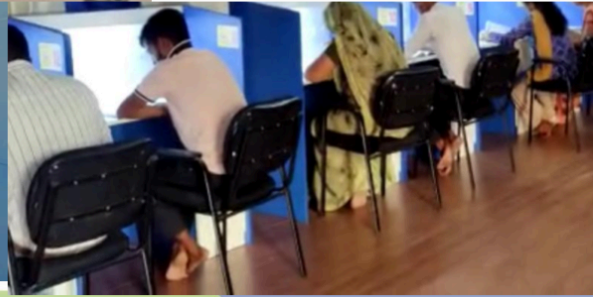
Plantation at Malyakhedi village



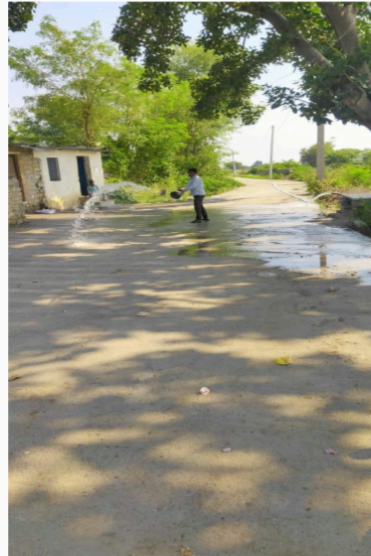
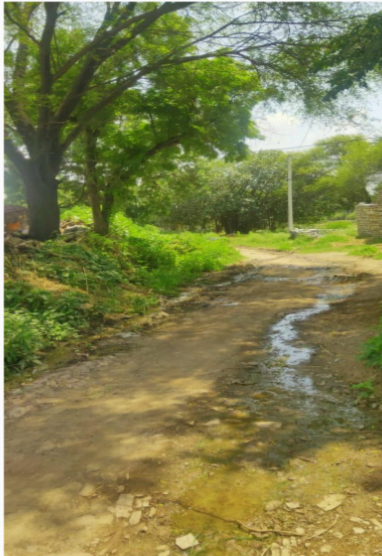
Education



Gyankendra- A initiative to provide environment and infrastructure to the youth who are preparing for government complete exams in village.



Rural Transformation



Constructed CC Road at Kripa ram Ji ki Dhandhi Arniya Joshi village.

CSR Spend Details			
Proposed Budget in Lakh (2023-24)	Spent (2023-24)	Location GP/NP/NP	Activities details
600	807	NBH & MGRL	Health-4054674 Education-2783539 Livelihood-2873932 Rural Transformation-69071597 Environment-722559 Others-1235177

Kripa Ram Ji Ki Khedi Village Community Hall



Before Construction Photo

After Construction Photo

Payri samshan boundary wall and misc work



Pemdiya kheda samshan boundary wall