



JK Cement WORKS

MUDDAPUR

(Unit : J.K. Cement Ltd)
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Works : P.O. Muddapur - 587 122
Dist. Bagalkot (Karnataka) India

No. - JKCW/ENV./CFO (MINE)/78/03

Date: 16-09-2020

To,
The Member Secretary
Karnataka State Pollution Control Board,
"Parisar Bhavan" 4th & 5th Floor,
49, Church Street, BANGALORE- 560 001

Subject- Environmental Statement Report of Muddapur Limestone Mine, Village- Muddapur,
Dist.- Bagalkot (Karnataka) for the financial year April-2019 to March-2020

Reference- Combined Consent Order No. AW-306116 dated 08-05-2018

Dear Sir

As per 14 of Environment (Protection) Rule 1986 and Combined Consent Order No. AW-306116 dated 08-05-2018, please find herewith enclosed Environmental Statement Report for Muddapur Limestone Mine, Village- Muddapur, Dist.- Bagalkot (Karnataka) in **Form V for the financial year 2019-2020** for your kind information and record, please.

Thanking you,

Yours faithfully,
Muddapur Limestone Mine
(Unit-JK Cement Ltd.)

R.B.M. Tripathi
(Unit Head)

Encl:

- 1- Duly filled Form-V as Environmental Statement Report of Muddapur Limestone Mine
- 2- Core zone and Buffer zone water testing report as Annexure-1
- 3- Ambient Air Quality Monitoring report of Muddapur Limestone Mine as per Annexure-2
- 4- Fugitive emission report of Muddapur Limestone Mine as per Annexure-3
- 5- Noise Monitoring report of Muddapur Limestone Mine, Muddapur as per Annexure-4

CC:

- 1- The Addl. Principle Chief Conservator of Forest (C), Ministry of Environment & Forests, Regional Office (South Zone), Bangalore- 560034
- 2- Scientist 'E' & In-charge, Central Pollution Control Board, 1st & 2nd Floors, Nisarga Bhavan, A-Block, Thimmaiah Main Road, 7th D Cross, Shivanagar, Bengaluru -560 079
- 3- Environment Officer, Karnataka State Pollution Control Board, Bagalkot- 587 102



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FORM – V**ENVIRONMENTAL STATEMENT REPORT FOR THE FINANCIAL YEAR 2019-20****M/s Muddapur Lime Stone Mine (Unit: J. K. Cement Limited)****PART – A**

(I)	Name & Address of the Owner / Occupier of the Industry Operation or Process	R. B. M. Tripathi (Unit Head) Muddapur Lime Stone Mine (Unit: J. K. Cement Limited) Muddapur, Bagalkot (Karnataka)
(II)	Industry Category Primary (STC CODE) Secondary (SIC CODE)	Red Category
(III)	Production Capacity	2.0 MTPA
(IV)	Year of Establishment	Year 2008
(V)	Date of last Environmental Statement Submitted	16-09-2019

PART – B**Water & Raw Material Consumption and Lime stone production****A. Water****Over All Consumption**

- (i) Process (Dust Suppression) - 9351.0 KL (Source- Mine's pit wat
(ii) Cooling - NA
(iii) Domestic - 149.46 KL

Consumption per unit of production

Name of the Product	Process Water Consumption per unit of Product Output (KL/MT of Limestone)	
	During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)
Lime Stone	0.00496	0.00755

B. Raw Material Consumption

Name of the Raw Material	Name of Product	Consumption of Raw Material per Unit Product Output (KL/MT of Limestone)	
		During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)
Diesel	Limestone	0.00070	0.00034

C. Total Lime Stone Production (in Ton)

During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)
902029.0	1238246.0

D. Total Power consumption (KWH/ MT of Limestone)

During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)
0.21564	0.17760

E. Lubrication and Explosive consumption

Particulars	During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)

Lubrication oil consumption (In Litres)	10762	11038
Grease consumption (In Kgs)	2245	2540
ANFO (in Kgs)	119674	132217
Slurry (In Kgs)	25124	18921
Electrical Detonators (In No's)	990	1209
Nonel Detonators(In No's)	13385	15680
Detonating fuse (in mts)	8620	12805

PART - C

Pollutant Discharged To Environment / Unit of Output
(Parameters as specified in the consent issued)

S. No.	Pollutants	Quantity of Pollutants Discharged (Mass / day) (tonne/day)	Concentrations of Pollutants in discharged (Mass / Volume) (kg/m ³)	Percentage of variation from prescribed standard with reasons
(a)	Water	Waste water generated from the office toilets is discharged into soak pit via septic tank. There is no waste water in the mine. Mine's pit water is used for dust suppression in mine. Pit water testing report is as per Annexure-1		
(b)	Air	There is no point source emission in mine. Ambient air quality and fugitive emission monitoring report as Annexure- 2 & 3		

PART - D

(As specified under Hazardous waste / Management and Handling rules, 1989 as Amended -2016)

Hazardous waste		During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)
(a) From Process	N.A.	N.A.	N.A.
(b) From Pollution Control Facilities	N.A.	N.A.	N.A.

PART - E

Solid Wastes

Solid Waste		Total Quantity	
		During the Previous Financial Year (2018-19)	During the Current Financial Year (2019-20)
(a)	From Process	N.A.	
(b)	From Pollution Control facilities	N.A.	
(c)	(i) Qty. recycled or reused Within the unit.	N.A.	
	(ii) Sold	N.A.	
	(iii) Disposed: During the mining of limestone disposed of overburden (In MT)	00.0 MT	23200.0 MT

PART - F

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

Hazardous waste: No hazardous waste is generated from mines.

Solid waste: Solid waste / over burden generated from Muddapur Limestone mine during April-2019 to March-2020 was 23200 MT.

PART – G

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

AIR

There is no impact observed on vegetation & water bodies in the surrounding areas due to dust, as it will be suppressed at its generating sources.

The following measures are taken to suppress the dust at the source as well as to prevent the same, spreading in the atmosphere:

- 1- Wet drilling system is provided on all drill machines.
- 2- Regular water sprinkling on haul road during operation.
- 3- Optimize blasting parameters for proper fragmentation to reduce dust generation.
- 4- Plantation and development of Green Belt along the Haul Roads and Working Pits.

WATER

- 1- Being Mechanized Limestone mine, it requires water mainly for Wet Drilling, Road Spraying and Green Belt Development. The source of water is the accumulated rainwater in the lower most benches. At Muddapur Mine, there is no discharged of liquid effluent / waste water from the Mine.
- 2- No discharge of rain water or waste water from the mine to outside lease area. Rain water in the catchment area of mine lease is diverted through drainage in to lower level area of mine and that water is used for dust suppression and plantation purpose.

NOISE

Noise is generated in the mine due to following mining activities:

- 1- Excavation, drilling, blasting and operations of HEMM.
- 2- Transportation and handling of material.

The results of base line noise level survey are well below the permissible limit except near machinery while operating. The noise generating sources are scattered within the whole mining area. All the sources will not generate the noise simultaneously hence; the noise level would not alter the noise environment significantly. The noise level reduces with increase in distance from the source. The following measures are taken to reduce the noise level at the source as well as to prevent the same, spreading in the atmosphere:

- 1- Providing enclosures for noise sources to reduce dispersion of noise like cabin in HEMM.
- 2- Proper maintenance and lubrication of machinery rotating parts.
- 3- Use electric delay detonator on surface in place of detonating fuse.
- 4- By covering the detonating fuse as well as detonators under drill cutting or the fine material.
- 5- By providing earmuffs and earplugs to eligible miners.
- 6- Use of Air Decking & sufficient column stemming in the blast holes.

PART – H

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

Green belt development and tree plantation is our ongoing process. Plantation has been done on OB sites, road sides and on other parts of non mineralized ML area. The top layer of the dump material and slopes is covered with top soil which is excellent property of water retention that supports good tree growth. Plantation details are following:

Year	No. of trees planted
Upto march, 2010	9831
2010-2011	3703
2011-2012	3225
2012-2013	2860
2013-2014	2264
2014-2015	342
2015-2016	1150
2016-2017	863
2017-2018	865
2018-2019	1100
2019-2020	850

PART – I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT.

- 1- Regular maintenance of haul roads using grader and dozers.
- 2- Continuous wetting of haul roads using water tankers to suppress the airborne dust.
- 3- Wet drilling practiced & Sharp drill bits used to prevent generation of drilling dust.
- 4- Monitoring of Blast Induced Ground Vibration with the help of Blasters Minimate.
- 5- Controlled blasting with the help of Nonels.
- 6- Green Belt developed all along the lease boundary.
- 7- Avenue plantation along the haul roads to resist dust propagation.
- 8- Regular Noise Mapping and vibration studies of machinery being done.
- 9- Preventive and scheduled maintenance of Machinery reduced noise.
- 10- We are providing all personal protective equipment (PPEs) to all mine employees i.e. dust mask (respirator), ear plug & ear muff, eye goggle etc. concern to them as additional measures of Air & Noise Pollution Control.
- 11- We are having full flash environmental laboratory for the monitoring of ambient air quality, water testing, noise monitoring etc.
- 12- Industry has been certified for standards ISO 9001: 2008, ISO 14001: 2004 and OHSAS 18001.
- 13- Dense plantation is being carried out to resist the flow of dust into the surrounding areas
- 14- As a water conservation measure, Surrounding area rain water diverted in to Pit no.1.
- 15- Solar panels are installed for power generation.

For Muddapur Lime Stone Mine, Muddapur (Karnataka)
(Unit: J.K. Cement Limited)



R.B.M. Tripathi
(Unit Head)

MUDDAPUR LIMESTONE MINE, (KARNATAKA)
(Unit: J.K. Cement Ltd.)

Core Zone and Buffer Zone drinking water quality analysis report for the period from April-2019 to March-2020

Sl. No.	Constituents	Desirable Limit	TEST REPORT									
			Core Zone			Buffer Zone						
			Muddapur mines pit	Muddapur Mines	Muddapur	Pettur	Metgud	Ningapur	Bamanbudini	Halki	Thimmapur	
1	Odour	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	
2	Taste	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	
3	Total Dissolved Solids	500	131.62	114.67	129.37	130.93	130.62	123.22	130.45	133.40	121.30	
4	Turbidity	5 NTU	1.7	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.6	
5	pH	6.5-8.5	7.4	7.2	7.4	7.3	7.5	7.2	7.3	7.1	7.4	
6	Total Hardness	300	143.5	142.3	144.4	142.0	131.6	135.6	136.5	126.7	121.3	
7	Calcium	75	23.90	25.25	26.00	20.80	23.98	23.25	21.52	22.33	22.12	
8	Magnesium	30	13.18	11.70	13.65	14.72	12.35	12.30	13.55	11.75	12.82	
9	Alkalinity	200	96.5	93.8	106.3	111.3	116.2	107.9	111.0	102.1	112.3	
10	Chloride	250	136.13	134.65	128.65	134.18	127.62	122.68	121.87	127.85	130.28	

Note: 1- The Above analysis have been carried out as per IS-10500.

2- Observed Concentration in mg/liter except pH and Turbidity.

MUDDAPUR LIMESTONE MINES, (KARNATAKA)

(Unit: JK Cement Ltd.)

AAQM REPORT FOR THE PERIOD FROM APRIL-2019 TO MARCH-2020

(ALL VALUES IN MICROGRAMS / CUBIC METER)

Month	Sl. No.	Date	Week	SO ₂				NO ₂				PM ₁₀				PM _{2.5}			
				Locations				Locations				Locations				Locations			
				A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
A P R I L	1	3.4.2019	1st	8.3	7.5	7.8	8.5	13.5	10.7	9.7	10.0	72.3	69.1	84.4	97.2	20.8	16.7	16.7	50.0
	2	6.4.2019		7.5	6.5	6.2	6.8	10.2	9.2	8.0	12.8	45.8	72.9	93.5	59.4	16.7	12.5	20.8	25.0
	3	10.4.2019	2nd	6.8	7.5	7.3	9.5	9.2	9.8	11.3	15.2	52.4	62.8	79.1	66.4	16.7	33.3	25.0	41.7
	4	13.4.2019		5.0	6.7	5.8	6.7	8.2	9.3	6.7	10.3	67.2	41.3	67.7	56.0	12.5	20.8	20.8	33.3
	5	17.4.2019	3rd	4.5	8.0	7.5	8.0	8.3	11.5	10.8	10.8	58.0	47.5	73.9	76.3	16.7	16.7	37.5	20.8
	6	20.4.2019		6.7	6.7	5.5	5.8	8.2	9.2	8.3	6.2	47.3	66.0	48.0	64.6	20.8	25.0	29.2	20.8
	7	24.4.2019	4th	4.5	5.0	4.5	4.0	9.5	7.2	5.8	7.0	54.2	57.1	68.3	66.4	12.5	33.3	37.5	12.5
	8	27.4.2019		4.5	4.5	5.2	5.2	7.5	5.8	7.2	7.3	44.2	64.2	62.4	55.3	37.5	20.8	29.2	20.8
M A Y	1	1.5.2019	1st	6.7	7.0	7.0	7.3	16.5	16.5	16.3	17.2	53.1	52.7	54.9	53.5	25.0	33.3	25.0	44.6
	2	4.5.2019		7.0	6.8	7.8	8.2	17.0	17.3	18.0	18.3	57.4	62.8	48.8	49.8	29.2	29.2	33.4	12.5
	3	8.5.2019	2nd	6.5	6.3	6.5	6.0	16.2	16.8	16.0	16.2	63.8	57.1	62.0	59.1	16.7	37.5	29.2	16.7
	4	11.5.2019		7.7	7.7	8.0	7.5	16.7	17.3	17.2	17.8	62.3	59.1	66.4	62.7	20.8	25.0	37.5	25.0
	5	15.5.2019	3rd	8.0	9.0	9.2	7.7	17.2	18.5	18.0	18.0	56.7	65.2	50.5	67.2	37.5	20.8	45.8	20.8
	6	18.5.2019		7.8	9.8	8.7	8.2	17.7	19.2	17.3	18.8	50.3	55.8	48.1	40.0	41.7	33.1	23.3	25.0
	7	22.5.2019	4th	7.2	6.5	7.8	8.0	18.3	16.8	18.0	17.2	58.2	40.7	52.1	54.4	29.2	25.0	20.8	37.5
	8	25.5.2019		8.3	8.3	6.7	7.2	17.3	18.0	17.8	18.8	51.5	48.5	45.4	46.7	25.0	20.8	33.3	44.6
	9	29.5.2019		6.0	7.0	7.7	7.8	19.5	17.5	17.5	17.0	45.6	44.9	50.0	49.1	20.8	37.5	20.8	20.8
J U N E	1	1.6.2019	1st	6.8	7.8	8.3	8.2	18.0	17.5	17.2	18.0	53.4	56.8	53.8	57.5	12.5	16.7	29.2	25.0
	2	5.6.2019		8.0	8.5	9.3	7.8	18.0	18.2	19.0	17.0	60.7	50.5	48.3	60.4	25.0	29.2	33.3	20.8
	3	8.6.2019	2nd	7.2	7.2	7.8	8.2	18.2	18.0	17.5	18.7	59.6	59.1	58.1	48.5	16.7	33.3	25.0	29.2
	4	12.6.2019		8.2	8.2	8.2	6.7	19.2	17.0	18.2	17.7	54.3	44.6	53.2	50.8	33.3	25.0	20.8	29.2
	5	15.6.2019	3rd	7.7	7.8	8.8	7.7	17.5	18.0	17.3	18.2	55.3	33.1	48.6	58.9	20.8	29.2	20.8	33.3
	6	19.6.2019		7.3	7.5	7.5	8.2	18.0	18.2	18.0	17.2	47.0	52.3	60.4	46.7	12.5	12.5	20.8	20.8
	7	22.6.2019		8.7	7.3	8.0	7.5	18.2	17.8	18.0	17.8	58.9	46.1	59.4	55.9	29.2	20.8	29.2	16.7
	8	26.6.2019		5.8	7.5	6.8	6.5	16.3	17.0	16.7	17.0	35.1	54.0	35.4	39.2	25.0	41.7	25.0	25.0
	9	29.6.2019	4th	7.0	7.0	7.5	7.8	19.0	17.5	17.7	18.0	48.4	48.0	50.0	52.7	20.8	16.7	37.5	25.0
J U L Y	1	3.7.2019	1st	7.7	8.0	7.2	7.3	18.0	18.0	17.8	17.8	57.6	68.4	48.7	59.6	16.7	25.0	20.8	29.2
	2	6.7.2019		8.0	7.5	8.2	8.7	18.0	17.7	18.5	18.3	51.9	57.4	57.9	37.2	20.8	16.7	16.7	25.0
	3	10.7.2019	2nd	8.0	9.2	6.8	7.5	17.5	19.2	17.2	17.3	63.5	60.4	68.1	21.9	12.5	12.5	29.2	20.8
	4	13.7.2019		9.2	8.3	9.2	8.0	19.2	18.0	18.5	18.0	69.8	70.5	77.7	71.2	12.5	25.0	25.0	16.7
	5	17.7.2019	3rd	10.0	10.2	10.0	9.5	19.0	18.8	19.5	20.2	57.8	57.2	56.3	77.0	25.0	20.8	16.7	29.2
	6	20.7.2019		7.2	8.3	8.3	8.5	18.3	19.7	18.8	18.0	61.5	55.4	57.2	69.2	16.7	20.8	20.8	25.0
	7	24.7.2019	4th	6.5	6.7	7.8	7.7	16.5	16.5	17.2	17.2	42.2	48.7	47.4	56.9	12.5	20.8	20.8	20.8
	8	27.7.2019		7.5	7.2	6.2	6.8	17.2	17.2	16.8	17.5	35.2	38.9	23.6	42.3	8.3	12.5	16.7	12.5
	9	31.7.2019		7.5	6.0	6.8	6.3	17.0	17.7	16.8	17.2	49.1	29.3	40.7	36.2	20.8	12.5	12.5	20.8
A U G U S T	1	3.8.2019	1st	9.2	9.2	6.8	7.5	19.2	19.2	17.2	17.3	38.0	38.1	52.4	55.5	16.7	16.7	20.8	37.5
	2	7.8.2019		8.3	8.2	9.2	9.5	17.2	18.0	18.5	19.2	46.6	45.9	43.9	48.3	20.8	20.8	25.0	25.0
	3	10.8.2019	2nd	7.5	7.2	10.0	8.0	17.0	17.2	19.5	18.0	42.8	49.8	48.3	60.2	20.8	37.5	20.8	20.8
	4	14.8.2019		6.5	6.7	7.8	8.0	16.2	16.5	17.2	18.0	50.5	51.9	62.7	52.6	25.0	25.0	25.0	25.0
	5	17.8.2019	3rd	7.5	7.5	6.2	9.5	16.5	18.0	16.8	20.2	47.7	41.0	46.7	40.8	16.7	20.8	20.8	20.8
	6	21.8.2019		10.2	10.3	8.3	10.5	19.2	19.2	19.2	19.5	54.0	58.1	53.8	51.8	20.8	25.0	25.0	29.2
	7	24.8.2019	4th	8.7	9.8	9.5	8.3	18.3	19.3	19.7	19.2	49.9	62.5	46.0	57.2	20.8	20.8	33.3	20.8
	8	28.8.2019		9.8	10.2	10.2	9.2	19.8	19.2	19.5	19.2	58.2	53.8	64.8	45.3	29.2	25.0	29.2	37.5
	9	31.8.2019		9.8	8.3	8.3	8.7	20.0	19.2	18.3	19.3	47.0	57.6	59.1	69.3	25.0	29.2	20.8	25.0
S E P T E M B E	1	4.9.2019	1st	8.3	8.3	7.5	7.5	18.3	18.3	17.5	17.5	65.0	62.5	50.9	45.5	33.3	33.3	20.8	20.8
	2	7.9.2019		7.5	7.5	8.7	8.2	17.5	18.2	18.7	18.3	55.6	55.4	61.7	53.1	25.0	29.2	25.0	25.0
	3	11.9.2019	2nd	6.7	8.2	7.5	6.8	19.8	18.2	20.0	16.8	48.0	49.9	56.7	53.8	20.8	37.5	29.2	20.8
	4	14.9.2019		8.2	9.2	10.0	8.3	19.2	19.2	20.0	19.2	57.3	46.0	46.7	47.6	29.2	33.3	33.3	29.2
	5	18.9.2019	3rd	7.5	6.7	7.0	5.8	17.5	16.7	17.0	15.8	47.2	33.8	34.7	27.4	33.3	12.5	16.7	20.8
	6	21.9.2019		7.7	7.5	6.2	7.3	18.0	17.5	16.2	17.5	21.1	29.2	27.0	23.0	16.0	16.7	29.2	12.5
	7	25.9.2019	4th	6.2	6.3	6.3	6.5	17.5	16.2	16.3	16.5	18.5	26.4	18.3	28.1	12.5	20.0	12.5	8.3
	8	29.9.2019		7.5	8.3	8.3	8.0	17.5	18.3	18.3	18.0	36.2	37.4	42.4	32.5	16.7	25.0	29.2	16.7

O C T O B E R	1	2.10.2019	1st	6.8	7.3	7.5	7.2	16.8	17.3	18.0	17.2	42.7	25.0	29.2	29.2	25.0	25.0	29.2	29.2	
	2	5.10.2019		8.3	9.2	8.3	6.5	18.3	19.2	18.3	16.5	49.4	20.8	25.0	25.0	29.2	20.8	25.0	25.0	
	3	9.10.2019	2nd	7.7	8.3	6.8	8.0	17.7	18.3	16.8	18.3	32.8	16.7	25.0	20.8	20.8	16.7	25.0	20.8	
	4	12.10.2019		8.3	7.0	8.8	8.8	18.3	17.0	18.8	19.0	44.6	29.2	33.3	37.5	25.0	29.2	33.3	37.5	
	5	16.10.2019	3rd	8.3	7.5	8.0	6.5	19.2	18.0	19.2	17.5	39.6	33.4	29.2	25.0	33.3	33.4	29.2	25.0	
	6	19.10.2019		7.3	6.5	7.5	8.0	18.2	16.5	17.5	18.5	48.6	33.3	20.8	25.0	20.8	33.3	20.8	25.0	
	7	23.10.2019	4th	6.5	8.0	7.2	9.2	17.2	18.0	18.5	17.8	32.7	29.2	16.7	20.8	25.0	29.2	16.7	20.8	
	8	26.10.2019		7.3	7.5	8.3	8.3	17.5	17.5	18.3	18.3	31.0	25.0	29.2	33.3	29.2	25.0	29.2	33.3	
	9	30.10.2019		7.0	6.5	8.7	8.0	18.0	16.5	15.3	18.0	46.9	20.8	20.8	25.0	37.5	20.8	20.8	25.0	
N O V E M B E R	1	2.11.2019	1st	8.0	8.3	8.0	6.8	18.0	18.3	18.2	17.3	40.9	54.6	54.5	47.7	29.2	33.3	29.2	25.0	
	2	6.11.2019		9.2	9.2	7.8	8.0	19.2	19.4	18.0	18.0	48.6	34.2	63.5	51.1	25.0	29.2	29.2	37.5	
	3	9.11.2019	2nd	8.2	7.5	8.3	9.2	19.0	17.5	18.3	19.2	57.3	46.9	47.0	57.2	16.7	25.0	37.5	33.3	
	4	13.11.2019		6.5	6.5	6.8	7.2	16.5	16.7	16.8	17.7	50.7	40.3	40.3	51.0	20.8	37.5	33.3	29.2	
	5	16.11.2019	3rd	7.5	8.0	8.3	7.5	17.5	18.0	18.3	18.0	65.0	51.7	58.6	65.0	25.0	33.3	20.8	20.8	
	6	20.11.2019		8.0	7.8	6.8	8.0	18.0	18.2	16.8	18.0	60.1	65.1	53.4	53.2	20.8	29.2	37.5	16.7	
	7	23.11.2019	4th	7.0	6.8	7.5	6.7	16.7	16.8	17.5	16.7	54.0	48.4	46.9	62.2	37.5	37.5	29.2	20.8	
	8	27.11.2019		6.7	8.3	8.3	8.3	16.7	18.3	19.3	19.2	68.2	57.1	62.9	58.0	45.8	33.3	25.0	29.2	
	9	30.11.2019		8.0	7.5	7.5	7.5	18.8	18.0	17.5	18.0	52.1	51.4	50.5	41.8	37.5	29.2	29.2	20.8	
D E C E M B E R	1	4.12.2019	1st	6.5	6.5	7.7	6.5	17.7	16.5	18.0	17.3	52.2	46.6	40.4	47.8	25.0	20.8	33.3	25.0	
	2	7.12.2019		5.7	5.2	4.8	6.0	15.7	15.3	14.5	16.0	47.0	40.9	59.9	51.7	29.2	29.2	29.2	20.8	
	3	11.12.2019	2nd	6.0	5.8	5.7	5.7	15.8	15.7	15.7	15.7	39.8	36.6	50.3	42.9	20.8	16.7	25.0	16.7	
	4	14.12.2019		5.8	4.8	6.0	5.3	15.8	16.0	14.8	14.7	49.2	48.1	42.4	55.8	25.0	20.8	29.2	20.8	
	5	18.12.2019	3rd	4.0	4.5	4.2	4.5	14.8	14.7	15.2	15.2	53.8	35.7	58.3	43.0	16.7	25.0	25.0	25.0	
	6	21.12.2019		4.0	5.2	5.5	5.0	15.0	16.0	15.0	15.0	44.8	59.0	46.4	47.1	25.0	29.2	20.8	16.7	
	7	25.12.2019	4th	5.5	6.8	6.5	4.7	16.3	16.5	16.8	15.2	59.5	45.4	50.9	59.8	20.8	20.8	20.8	25.0	
	8	28.12.2019		6.0	5.5	4.8	5.2	16.0	15.5	14.8	15.8	54.3	56.8	57.2	64.2	25.0	25.0	25.0	33.3	
J A N U A R Y	1	1.1.2020	1st	5.5	6.0	4.8	6.7	17.7	17.3	16.7	17.7	55.6	42.6	52.0	58.3	16.7	20.8	25.0	29.2	
	2	4.1.2020		6.0	5.8	5.8	5.5	16.0	16.2	17.2	15.5	59.4	48.2	62.1	53.1	20.8	29.2	29.2	33.3	
	3	8.1.2020	2nd	5.5	8.0	6.7	6.0	16.7	18.0	16.3	17.7	44.5	56.6	49.0	45.6	29.2	33.3	37.5	25.0	
	4	11.1.2020		7.2	6.7	7.5	7.0	17.7	17.8	17.5	17.7	55.6	51.5	59.5	55.3	33.3	29.2	20.8	37.5	
	5	15.1.2020	3rd	6.7	7.0	8.3	8.0	17.7	17.3	18.0	18.0	60.6	46.9	50.2	62.4	20.8	25.0	16.7	20.8	
	6	18.1.2020		7.7	8.7	8.0	8.3	18.0	19.2	19.2	19.2	50.4	57.8	59.5	52.2	37.5	33.3	25.0	29.2	
	7	22.1.2020	4th	8.8	6.3	7.2	7.3	18.8	17.2	17.7	18.2	69.7	63.7	65.3	67.4	33.3	37.5	29.2	25.0	
	8	25.1.2020		7.5	7.7	6.5	6.0	18.0	17.7	16.5	16.0	52.9	55.2	41.4	56.3	29.2	20.8	25.0	33.3	
	9	29.1.2020		6.5	6.8	7.3	7.5	17.3	18.0	18.0	17.8	56.2	50.5	51.0	60.6	25.0	33.3	37.5	20.8	
F E B R U A R Y	1	1.2.2020	1st	6.7	7.2	7.0	6.3	17.3	19.0	18.3	17.3	56.0	61.1	50.4	58.3	33.3	29.2	33.3	25.0	
	2	5.2.2020		7.7	8.3	6.8	7.7	19.2	17.7	17.7	18.5	61.7	59.4	60.1	61.9	29.2	33.3	20.8	20.8	
	3	8.2.2020	2nd	6.3	6.2	6.0	6.7	16.7	16.5	16.5	17.7	52.5	43.2	64.2	52.2	20.8	25.0	29.2	33.3	
	4	12.2.2020		8.0	7.5	7.7	7.7	17.8	17.5	17.7	17.8	59.8	55.2	58.4	66.1	33.3	29.2	37.5	25.0	
	5	15.2.2020	3rd	6.7	8.0	6.7	8.0	17.0	18.0	17.7	18.0	57.0	59.2	41.0	60.3	25.0	37.5	33.3	29.2	
	6	19.2.2020		7.7	7.3	7.7	7.5	18.5	18.0	17.8	18.8	47.3	66.5	67.9	65.2	33.3	29.2	25.0	50.0	
	7	22.2.2020	4th	8.2	7.8	8.0	7.3	19.0	19.2	18.0	17.7	58.3	52.7	47.4	69.8	37.5	33.3	20.8	29.2	
	8	26.2.2020		6.3	6.7	8.0	6.8	17.2	17.5	17.0	18.0	63.5	60.5	59.9	57.6	29.2	20.8	33.3	25.0	
	9	29.2.2020		8.0	7.7	7.7	7.5	17.3	18.0	17.7	17.3	67.9	42.2	63.1	50.8	33.3	25.0	29.2	20.8	
M A R C H	1	4.3.2020	1st	7.7	7.3	8.0	8.0	17.3	17.8	18.0	18.5	67.1	55.6	50.0	59.0	25.0	20.8	25.0	33.3	
	2	7.3.2020		8.5	8.8	7.5	7.5	18.0	18.8	18.8	18.0	59.0	51.7	49.0	51.9	29.2	25.0	33.3	37.5	
	3	11.3.2020	2nd	7.2	6.8	6.5	6.5	18.2	17.3	17.3	16.5	50.8	40.5	63.7	57.0	37.5	33.3	33.3	41.7	
	4	14.3.2020		6.7	7.5	8.0	8.0	16.7	18.5	18.0	18.0	61.8	67.7	51.7	42.8	37.5	29.2	37.5	33.3	
	5	18.3.2020	3rd	6.5	6.2	7.7	7.7	17.2	17.3	17.5	17.8	49.4	47.5	60.9	58.6	20.8	33.3	29.2	29.2	
	6	21.3.2020		7.7	5.7	6.8	6.7	18.7	16.2	16.8	17.3	27.7	25.1	30.4	29.3	20.8	25.0	33.3	20.8	
	7	25.3.2020	4th	6.0	7.3	5.7	5.7	14.5	17.2	16.0	15.8	19.3	20.6	13.1	25.5	16.7	12.5	12.5	12.5	
	8	28.3.2020		5.7	6.8	6.0	6.7	16.8	16.8	17.5	17.3	28.9	28.6	25.1	31.3	8.3	12.5	16.7	16.7	
Avg				7.2	7.4	7.4	7.4	17.0	17.0	16.9	17.1	51.4	48.7	50.7	51.0	24.4	25.8	26.5	25.9	
Min.				4.0	4.5	4.2	4.0	7.5	5.8	5.8	6.2	18.5	16.7	13.1	20.8	8.3	12.5	12.5	8.3	
Max.				10.2	10.3	10.2	10.5	20.0	19.7	20.0	20.2	72.3	72.9	93.5	97.2	45.8	41.7	45.8	50.0	

MUDDAPUR LIME STONE MINE, (KARNATAKA)**(Unit : J.K. Cement Ltd.)**

Fugitive Emission Monitoring Report of Muddapur mines for the period from April-2019 to March-2020

Sl. No.	MONTH	SPM (µg/m ³)				
		Loading Area	Drilling Area	Haulage Area	Waste Dumping Site	Service Road
1	Apr-19	642.3	714.9	813.4	730.3	702.1
2	May-19	711.6	844.1	735.0	863.2	832.5
3	Jun-19	760.0	996.1	691.2	796.9	708.3
4	Jul-19	697.8	740.8	841.7	802.7	810.1
5	Aug-19	732.7	840.3	907.9	983.0	968.2
6	Sep-19	828.1	956.0	862.2	922.2	740.4
7	Oct-19	961.7	856.66	902.22	968.79	677.63
8	Nov-19	799.6	796.35	981.84	891.46	707.66
9	Dec-19	846.5	872.31	950.87	918.80	827.28
10	Jan-20	742.3	822.74	913.46	979.59	1016.13
11	Feb-20	776.2	714.41	805.44	905.09	960.11
12	Mar-20	794.4	1005.34	1022.26	1012.94	1048.26
Minimum		642.3	714.4	691.2	730.3	677.6
Maximum		961.7	1005.3	1022.3	1012.9	1048.3
Average		774.4	846.7	869.0	897.9	833.2

Muddapur Limestone Mine (Karnataka)

(Unit: J.K. Cement Ltd.)

Noise monitoring report of Muddapur mines for the period from April-2019 to March-2020

Sl.No.	Time	Month	Muddapur Mines boundary	Muddapur Mines Office	Muddapur mines Drilling Time	Muddapur mines Waste dumping site	Muddapur mines Service Road
1	Day	Apr-19	42.5	45.7	38.5	44.2	40.7
	Night		31.6	33.8	—	34.5	30.8
2	Day	May-19	41.5	45.4	40	42.6	40.1
	Night		31.6	33.2	—	30.8	36.5
3	Day	Jun-19	42.8	46.5	38.6	40.5	46.2
	Night		32.4	31.5	—	30.6	34.4
4	Day	Jul-19	47.5	39.2	41.5	40.2	41.6
	Night		32.5	29.6	—	33.7	31.9
5	Day	Aug-19	46.8	36.4	40.9	41.2	39.6
	Night		30.8	27.5	—	35.4	30.5
6	Day	Sep-19	47.5	35.2	41.5	40.5	37.4
	Night		31.2	27.1	—	33.6	31.2
7	Day	Oct-19	36.6	43.8	43.7	42.5	45.4
	Night		28.3	33.5	—	32.6	31.7
8	Day	Nov-19	38.5	40.5	45.2	40.8	43.2
	Night		27.6	32.6	—	30.3	32.8
9	Day	Dec-19	40.2	38.6	42.5	43.1	45.1
	Night		30.2	30.5	—	32.8	31.6
10	Day	Jan-20	50.6	47.5	42.2	46.6	41.5
	Night		42.8	35.5	—	30.5	31.2
11	Day	Feb-20	53	48	54	62	55
	Night		35	32	—	38	32
12	Day	Mar-20	55	46	56	64	53
	Night		38	33	—	43	33
Average	Day		45.2	42.7	43.7	45.7	44.1
	Night		32.7	31.7	—	33.8	32.3
Minimum	Day		36.6	35.2	38.5	40.2	37.4
	Night		27.6	27.1	0	30.3	30.5
Maximum	Day		55	48	56	64	55
	Night		42.8	35.5	0	43	36.5