

Ambuja Cement

Speed Post

ACL/BYT/EMD/HCR/October-March-2017/62

Date: 19.06.2017

To,
Additional Principal Chief Conservator of Forests
Ministry of Environment, Forest & Climate Change
Regional Office (West Central Zone)
Ground Floor, East Wing
" New Secretary Building"
Civil Lines, Nagpur-440001

Sub: Submission of Six monthly EC Compliance Report along with Environmental Monitoring Report for the period October-March-2017 for Rawan Limestone Mine

Ref:

1. EC letter no. J-11015/330/2006-IA II (M) dated 8th June 2007.

Dear Sir,

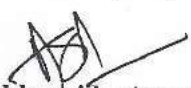
We are submitting herewith one copy of the Six monthly EC Compliance Report and Environmental Monitoring Report (October-March-2017) for the Environmental clearances obtained vide reference mentioned above for Rawan Limestone Mine.

Thanking you.

Yours Sincerely,

For Ambuja Cements Ltd.

(Unit: Bhatapara)


(Subbaraidu Ayyagari)
Head Operations

Enclosure: Six Monthly Compliance report for Six No.s of Environmental Clearances

Copy to:

- 1) Mr. R.S Kori, Scientist "E" & In-charge, Central Pollution Control Board, Zonal Office, Sahkar Bhawan, North T.T. Nagar, Bhopal -462003
- 2) The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Naya Raipur (C.G.) 490099
- 3) The Regional Officer, CECB, Kabir Nagar Commercial Complex, Chhattisgarh Housing Board Colony, Kabir Nagar, Raipur (C.G.)

AMBUJA CEMENTS LIMITED – UNIT: BHATAPARA

~~P.O. Rawan, Tehsil Baloda Bazar, Dist. Baloda Bazar~~ – 493 331 (C.G.)

Ph.: 07727-220010 to 15, Fax: 220004

2017/6- ing

**EC Compliance Report
&
Environment Status Report
(October-2016 to March-2017)**

of

**Rawan Limestone Mine
(Capacity: 6.31 MTPA, ML Area: 420.95Ha)**

**Located at
P.O. Rawan, Tehsil-Baloda Bazar,
District-Raipur, Chhattisgarh**

**Project Proponent:
M/s, AMBUJA CEMENTS LTD,
(Unit: Bhatapara)
P.O: Rawan Dist :Bhatapara- Baloda Bazar
Chhattisgarh - 493331, India**

June-2017

Compliance Status of Environmental Clearance Conditions accorded by MoEF for the Expansion Project of Rawan Limestone Mine from 2.06 MTPA to 6.31MTPA of M/s Ambuja Cements Ltd. Located at P.O. Rawan, Tehsil: Baloda Bazar, District Raipur, Chhattisgarh

Ref.no. J-11015/330/2006-IA II (M)

Date: 8th June 2007

Sr. No.	EC Conditions	Action taken /Compliance Status
A. Specific Conditions		
i.	Top soil shall be stacked properly with proper slope with adequate safeguards and shall be backfilled for reclamation and rehabilitation of mined out area.	Top soil is stacked separately for future utilization and it is being re-handled for reclamation and rehabilitation of mined out area and for green belt development.
ii.	Over burden shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 20 m; each stage shall preferably be of 10 m and over all slope of the dump shall not exceed 26°. The reverse slope shall be maintained to prevent wash off and water logging during rainy season. The mine pit area shall be reclaimed by back filling the OB in a phased manner. The OB dump shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall submit to the Ministry Of Environment & Forests on six month basis.	Being complied. The overburden dumps are having maximum height of 20m and overall slope of 26° is being maintained. The OB is stacked at non mineralized area. Inactive OB dumps are being stabilized by coir matting followed by plantation of native plant species. Six monthly compliance is being submitted regularly to MoEF Regional Office, Bhopal.
iii.	Garland drains shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed	Being Complied. Garland drains are constructed around the dumps to arrest silt and sediment flows. The drains are connected to a settling tank and/or mine pits and accumulated water is being used for dust suppression and plantation. De-silting of garland drains is carried out at regular intervals.

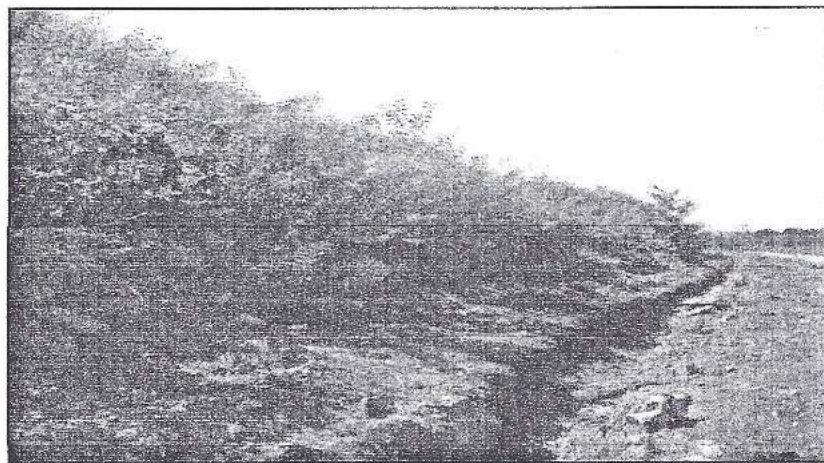
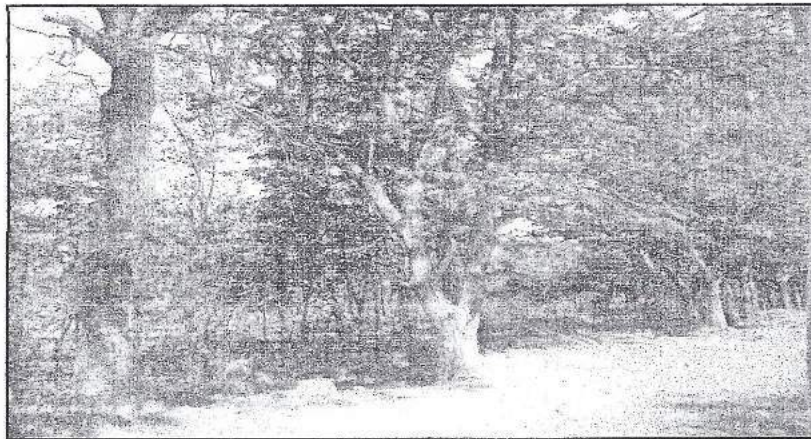
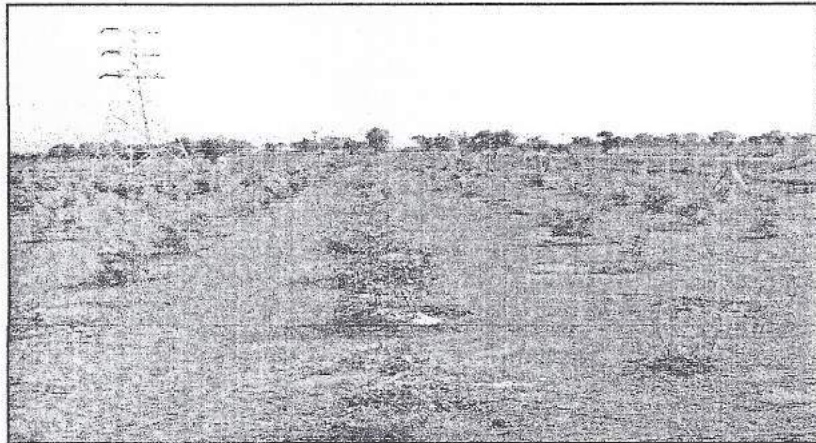
Sr. No.	EC Conditions	Action taken /Compliance Status
	at the corners of the garland drains and desilted at regular intervals.	
iv.	Controlled drilling and blasting shall be done by using dust extractors/wet drilling.	Controlled blasting using delay detonators is being practiced. Drilling is carried out with drill machines equipped with dust arrestors.
v.	Plantation shall be raised in an area of 98.04 ha including green belt of adequate width by planting the native species around the ML area, roads, OB dump sites etc. in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.	Being complied. Phase wise plantation is being carried out in safety zone, along roads and on inactive OB dumps as shown in Annexure I . The density of plantation is maintained at around 2500 plants per ha.
vi.	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Being complied. The rainwater accumulated in the mine pit percolate to the ground thereby recharging the ground water table. Water for dust suppression and plantation in the mining area is supplied from STP in the cement plant colony and from mine pit, thereby conserving the ground water resources.
vii.	Regular monitoring of ground water level and quality shall be carried out by establishing well and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year – pre-monsoon (April-May), monsoon (August), Post Monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.	Three Piezometers are established in the ML area and in Plant area. Ground water level & quality is being monitored regularly. Water Level monitoring and water quality analysis results are enclosed as Annexure III
viii.	Prior permission from the competent authority shall be obtained for drawl of ground water, if any.	Being complied.
ix.	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles shall be covered with a tarpaulin and shall not be overloaded.	Vehicles used for mineral transportation are maintained periodically to control exhaust emissions. Vehicles transporting minerals are covered with tarpaulin and overloading is strictly prohibited. Vehicular emission is being and will be regularly monitored.
x.	A final mine closure plan, along with details of corpus fund, shall be submitted to the Ministry	Noted for compliance. Final mine closure plan, along with

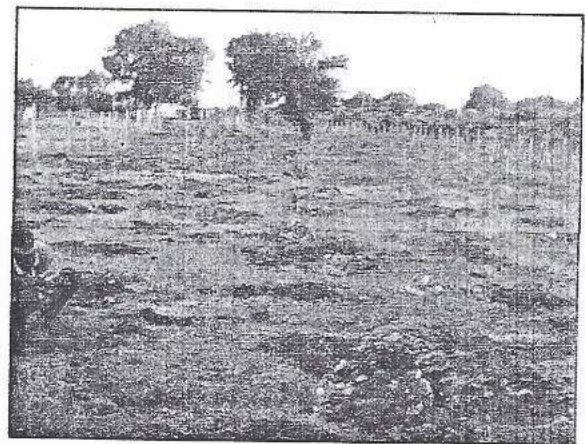
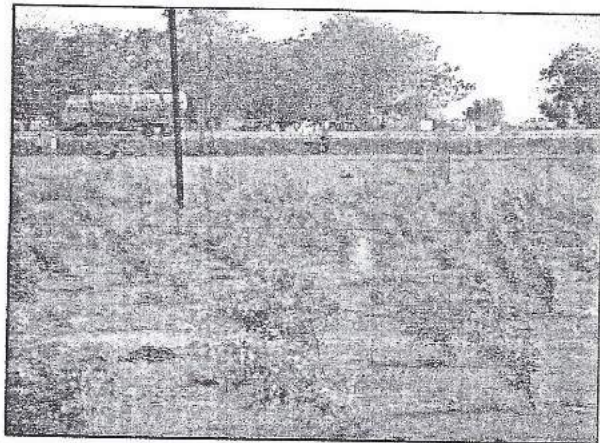
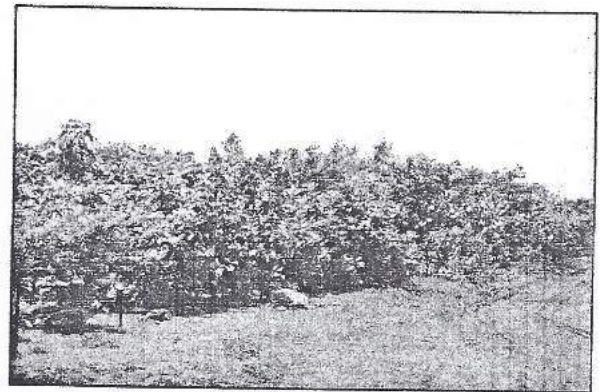
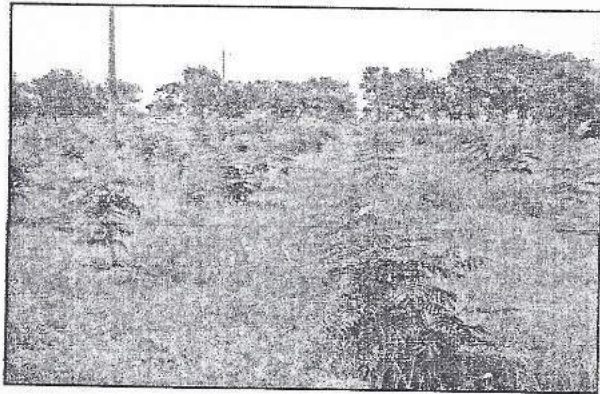
Sr. No.	EC Conditions	Action taken /Compliance Status
	Of Environment & Forests 5 years in advance of final mine closure for approval.	details of corpus fund, will be submitted to MoEF 5 years in advance of final mine closure.
B. General Conditions		
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry Of Environment & Forests.	No change in mining technology and scope of working is being made.
ii.	No change in the calendar plan including excavation, quantum of mineral limestone ore shall be made.	Limestone is being produced as per the calendar plan and EC permission.
iii.	Conservation measures for protection of flora and fauna in the core and buffer zone shall be drawn up in consultation with the local forest and wildlife department.	Noted & being complied. Thick plantation using local flora species is being carried out on safety zone, along transport roads and on inactive dumps. Fencing of the mining area is being carried out to avoid inadvertent entry of persons/animals.
iv.	Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, SPM,SO ₂ , NO _x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State pollution Control Board.	Six Ambient Air quality monitoring locations have been established in the core zone, plant area and in buffer area. Regular air quality monitoring is being carried out and the results of the same are attached as Annexure II .
v.	Data on ambient air quality (RPM, SPM, SO ₂ and NO _x) should be regularly submitted to the Ministry including its regional office located at Bhopal and the StatePollution Control Board/ Central Pollution Control Board once in six months.	Ambient air quality is regularly monitored and reports are submitted to Regional office of MoEF & CECB/CPCB. The air quality monitoring report for the period October-March-2017 is given in Annexure II .
vi.	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	Mobile water sprinklers are provided for periodic water sprinkling on haul roads, loading and unloading points, etc. Regular water sprinkling is being carried out at fugitive dust emission sources to control dust emissions.
vii.	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc shall be provided with ear plugs/muffs.	Periodic maintenance of machinery used in mines is carried out to control noise below 85 dBA. Workers engaged in drilling & HEMM operations are provided with ear plugs/Muffs. Periodic noise level monitoring is

Sr. No.	EC Conditions	Action taken /Compliance Status
		conducted in the mines. Results are given in Annexure II .
viii	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.	There is no process effluent generation in the mines. Effluent from workshop in the mine is treated in Oil and Grease trap system provided in the workshop. Surface run-off from the broken up area is collected in settling tank/mine pits and is used for dust suppression and plantation.
ix.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Protective Respiratory Devices (dust masks) are provided & safety appliances are being used by the workers. Shoes, dust mask, helmet, & ear plug, have been provided & pre-employment and refresher safety training is being given to all the workers.
x.	Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Occupational health surveillance program for the workers are undertaken periodically.
xi.	A separate environmental management cell with suitable qualified personnel shall be set-up under the control of a senior executive, who will report directly to the Head of the organization.	Environmental Management Cell has been established under supervision of Environmental Manager. The Environmental Manager directly reports to the Unit Head.
xii.	The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Complied • Environmental Clearance vide letter no. J-11015/330/2006-IA II (M) date:08.06.2007 • Mine is in operation since 1984.
xiii	The fund earmarked for environmental protection measures shall be kept in separate account and should not be diverted to other purpose. Year wise expenditure shall be reported to the Ministry and its regional office.	Noted & being complied.
xiv	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Noted and being complied.
xv.	A copy of clearance letter will be marked to	Complied.

Sr. No.	EC Conditions	Action taken /Compliance Status
	concerned Panchayat/local NGO, if any, from whom suggestion/representation has been received while processing the proposal.	
xvi	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.	Complied.
xvii.	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at the website of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministry located in Bhopal.	Complied.
5.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environmental protection.	Noted.
6.	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted.
7.	The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974. The Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986. Hazardous Wastes(Management and Handling) Rules, 2003 and the Public (insurance) Liability Act, 1991 along with their amendments and rules.	Noted

ANNEXURE I
Plantation Done in Mining Area
&
Plantation Done Along PWD Road





ANNEXURE II
Monitoring Results
(Air, Water, Noise, Ground Water Level)

MONTH –October-2016

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM ₁₀ (µg/m ³)	Avg. PM _{2.5} (µg/m ³)	Avg. SO ₂ (µg/m ³)	Avg. NOx (µg/m ³)	Avg. CO (µg/m ³)
Khairtal Village	69.6	34	9.48	23.9	BDL
Kukurdih Village	59.4	27.3	4.16	9.26	BDL
Guest House	58.6	27.3	7.18	22	BDL
Water Treatment Plant	57.1	24.6	5.45	14.6	BDL
Mines Field Office	60.1	26.6	5.06	8.18	BDL
Railway Operation	55.2	22.6	4.07	8.14	BDL

BDL: Below Detectable level

STACK MONITORING REPORT

Monitoring Station	Particulate Matter (mg/Nm ³)
Kiln Stack (Line- 1)	Plant under Shutdown
Crusher Stack (Line- 1)	Plant under Shutdown
Cooler (Line- 1)	Plant under Shutdown
Coal Mill (Line- 1)	Plant under Shutdown
Cement Mill – 1	26.3
Cement Mill – 2	20.5
Cement VRPM stack	Didn't Run in the month
Cement Mill- 3	21.7
Kiln Stack (Line- 2)	24.1
Crusher Stack (Line- 2)	26.8
Coal Mill (Line- 2)	15.5
Cooler (Line- 2)	10.6
DG – 04 MW	Didn't Run in the month
TPP- 15 MW (Old)	Didn't Run in the month
TPP- 33 MW	34.2
TPP- 15 MW (New)	44.8

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dB)	
	Day Time (dB)	Night Time (dB)
Plant Canteen Area	56.4	52.3
Colony	54.6	45.8
Near Old CCR Building	57	55.4
Near New CCR Building	66.4	61.9
Mines Field Office	59.4	49.9
Mines Office	61.2	50.3
TPP area	69.7	61.9
Main office	56.9	53.1

WATER QUALITY REPORT

	EFFLUENT QUALITY						Remark
	pH	COD	BOD	Oil & Grease	S.S.	TDS	
STP (treated)	8.54	48	4	<0.2	6	877.7	
Mines Work Shop (treated)	7.45	112	5	<0.2	18	640.6	
TPP DM Plant back wash (RO installed)	5.55	24	<2	<0.2	<2	128.2	

Note: All parameters are in mg/l except pH.

MONTH –November-2016

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM ₁₀ (µg/m ³)	Avg. PM _{2.5} (µg/m ³)	Avg. SO ₂ (µg/m ³)	Avg. NO _x (µg/m ³)	Avg. CO (µg/m ³)
Khairtal Village	57.8	24.5	6.73	7.57	BDL
Kukurdi Village	67.4	29.5	5.99	16.2	BDL
Guest House	63.5	21.3	3.84	11.5	BDL
Water Treatment Plant	68.9	29.9	5.11	13.5	BDL
Mines Field Office	63.4	27.7	11.1	17	BDL
Railway Operation	62.6	25.4	4.25	11.2	BDL

BDL: Below Detectable level

STACK MONITORING REPORT

Monitoring Station	Particulate Matter (mg/Nm ³)
Kiln Stack (Line- 1)	25.1
Crusher Stack (Line- 1)	11.9
Cooler (Line- 1)	14.7
Coal Mill (Line- 1)	27.3
Cement Mill – 1	27.2
Cement Mill – 2	14.7
Cement VRPM stack	Didn't Run in the month
Cement Mill- 3	22.1
Kiln Stack (Line- 2)	21.7
Crusher Stack (Line- 2)	14.2
Coal Mill (Line- 2)	22.8
Cooler (Line- 2)	18.8
DG – 04 MW	Didn't Run in the month
TPP- 15 MW (Old)	39.8
TPP- 33 MW	30.9
TPP- 15 MW (New)	36.1

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dB)	
	Day Time (dB)	Night Time (dB)
Plant Canteen Area	61.2	58.9
Lonely	51.4	45.8
Near Old CCR Building	70.5	66.1
Near New CCR Building	73.5	68.9
Mines Field Office	60.8	49.8
Mines Office	65.4	53.8
TPP area	67.1	64.6
Main office	66.1	61.3

WATER QUALITY REPORT

	EFFLUENT QUALITY						Remark
	pH	COD	BOD	Oil & Grease	S.S.	TDS	
STP (treated)	6.98	47	4	<0.2	4	428	
Mines Work Shop (treated)	7.48	54.9	3	<0.2	6	364	
TPP DM Plant back wash (RO installed)	7.14	47	<2.0	<0.2	4	186	

Note: All parameters are in mg/l except pH.

MONTH –December-2016

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM ₁₀ (µg/m ³)	Avg. PM _{2.5} (µg/m ³)	Avg. SO ₂ (µg/m ³)	Avg. NOx (µg/m ³)	Avg. CO (µg/m ³)
Khairtal Village	61	26.7	9.66	29.6	BDL
Kukurdi Village	57.5	26.4	10.3	14.9	BDL
Guest House	59.4	26.7	14.8	16.8	BDL
Water Treatment Plant	65.5	30	15.3	13.3	BDL
Mines Field Office	64.2	28	7.62	9.66	BDL
Railway Operation	70.6	32	18.1	19.8	BDL

BDL: Below Detectable level

STACK MONITORING REPORT

Monitoring Station	Particulate Matter (mg/Nm ³)
Kiln Stack (Line- 1)	Not in operation
Crusher Stack (Line- 1)	Not in operation
Cooler (Line- 1)	Not in operation
Coal Mill (Line- 1)	Not in operation
Cement Mill - 1	24.3
Cement Mill - 2	20.4
Cement VRPM stack	Didn't Run in the month
Cement Mill- 3	27.8
Kiln Stack (Line- 2)	15.8
Crusher Stack (Line- 2)	25.1
Coal Mill (Line- 2)	17.9
Cooler (Line- 2)	22.5
DG - 04 MW	Didn't Run in the month
TPP- 15 MW (Old)	Not in operation
TPP- 33 MW	42.8
TPP- 15 MW (New)	Didn't Run in the month

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dB)	
	Day Time (dB)	Night Time (dB)
Plant Canteen Area	64.6	62.3
Colony	60.8	58.7
Ne. Old CCR Building	63	62
Ne. New CCR Building	69.6	68.4
Mines Field Office	63.6	60.1
Mines Office	67.8	62.9
TPP area	69.3	66.3
Main office	63.6	62.6

WATER QUALITY REPORT

	EFFLUENT QUALITY						Remark
	pH	COD	BOD	Oil & Grease	S.S.	TDS	
STP (treated)	7.69	39.6	4	<0.2	6	492	
Mines Work Shop (treated)	7.74	71.3	5	<0.2	10	384	
TPP DM Plant back wash (RO installed)	6.9	15.8	<2.0	<0.2	<2.0	170	

Note: All parameters are in mg/lit except pH.

MONTH -January-2017

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM ₁₀ (µg/m ³)	Avg. PM _{2.5} (µg/m ³)	Avg. SO ₂ (µg/m ³)	Avg. NOx (µg/m ³)	Avg. CO (µg/m ³)
Khairtal Village	56.8	24.7	4.36	9.32	BDL
Kukurdih Village	65.1	27.7	3.19	18.5	BDL
Guest House	67.8	28.1	2.96	12.9	BDL
Water Treatment Plant	57.8	26.1	2.98	21.7	BDL
Mines Field Office	65.5	28.1	3.33	25	BDL
Railway Operation	65.5	29.8	21.6	16.3	BDL

BDL: Below Detectable level

STACK MONITORING REPORT

Monitoring Station	Particulate Matter (mg/Nm3)
Kiln Stack (Line- 1)	27.1
Crusher Stack (Line- 1)	21.8
Cooler (Line- 1)	19.1
Coal Mill (Line- 1)	28.1
Cement Mill - 1	27.7
Cement Mill - 2	18.7
Cement VRPM stack	Didn't Run in the month
Cement Mill- 3	28
Kiln Stack (Line- 2)	14.8
Crusher Stack (Line- 2)	26.6
Coal Mill (Line- 2)	23.4
Cooler (Line- 2)	18.2
DG - 04 MW	Didn't Run in the month
TPP- 15 MW (Old)	23.7
TPP- 33 MW	19.9
TPP- 15 MW (New)	34.9

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dB)	
	Day Time (dB)	Night Time (dB)
Plant Canteen Area	65.6	60.6
Colony	45.4	40.5
Near Old CCR Building	64.7	62.5
Near New CCR Building	70.6	64.2
Mines Field Office	66.5	57
Mines Office	71	58.7
TPP area	66.1	65.2
Main office	65	61.8

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	COD	BOD	Oil & Grease	S.S.	TDS	Remark
STP (treated)	7.54	56	6	<0.2	4	564	
Mines Work Shop (treated)	7.66	40	2	<0.2	4	262	
TPP DM Plant back wash (RO installed)	6.81	16	<2	<0.2	2	22	

Note: All parameters are in mg/lit except pH.

MONTH –February-2017

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM ₁₀ (µg/m ³)	Avg. PM _{2.5} (µg/m ³)	Avg. SO ₂ (µg/m ³)	Avg. NO _x (µg/m ³)	Avg. CO (µg/m ³)
Khairtal Village	58	24.4	17.8	20.4	BDL
Kukurdih Village	67.9	29.4	6.01	18.9	BDL
Guest House	62.6	26.7	12.1	20.9	BDL
Water Treatment Plant	69.4	29.8	15.8	23.6	BDL
Mines Field Office	64.7	26.7	5.52	19	BDL
Railway Operation	60.9	25.7	9.08	17.9	BDL

BDL: Below Detectable level

STACK MONITORING REPORT

Monitoring Station	Particulate Matter (mg/Nm ³)
Kiln Stack (Line- 1)	15.8
Crusher Stack (Line- 1)	28.1
Cooler (Line- 1)	28.6
Coal Mill (Line- 1)	28.6
Cement Mill – 1	25.5
Cement Mill – 2	28.5
Cement VRPM stack	Didn't Run in the month
Cement Mill- 3	27.1
Kiln Stack (Line- 2)	14.4
Crusher Stack (Line- 2)	25.6
Coal Mill (Line- 2)	22
Cooler (Line- 2)	23.8
DG – 04 MW	Didn't Run in the month
TPP- 15 MW (Old)	28.9
TPP- 33 MW	27.7
TPP- 15 MW (New)	37.5

AMBIENT NOISE LEVEL REPORT

AMBIENT NOISE LEVEL REPORT		
Location	Noise Level (dB)	
	Day Time (dB)	Night Time (dB)
Plant Canteen Area	64.8	62.3
Colony	55	47.4
Near Old CCR Building	67.6	66.1
Near New CCR Building	66.8	64.2
Mines Field Office	63.4	52.3
Mines Office	63.5	55.2
TPP area	62.7	60.5
Main office	66.1	63.8

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	COD	BOD	Oil & Grease	S.S.	TDS	Remark
STP (treated)	7.41	100.9	8	<0.2	2	270	
Mines Work Shop (treated)	7.33	64	4	<0.2	<2	320	
TPP DM Plant back wash (RO installed)	6.64	15.5	<2	<0.2	<2	124	

Note: All parameters are in mg/l except pH.

MONTH –March-2017

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM ₁₀ (µg/m ³)	Avg. PM _{2.5} (µg/m ³)	Avg. SO ₂ (µg/m ³)	Avg. NO _x (µg/m ³)	Avg. CO (µg/m ³)
Khairtal Village	62.3	27.8	7.31	17.3	BDL
Kukurdih Village	67.7	33.1	7.77	17.7	BDL
Guest House	57	21.1	11.6	22.7	BDL
Water Treatment Plant	56.2	24.2	12.7	19.6	BDL
Mines Field Office	66.6	28.9	15.1	22.9	BDL
Railway Operation	54.7	23.9	11.7	19.3	BDL

BDL: Below Detectable level

STACK MONITORING REPORT

Monitoring Station	Particulate Matter (mg/Nm ³)
Kiln Stack (Line- 1)	14.5
Crusher Stack (Line- 1)	22.4
Cooler (Line- 1)	24.7
Coal Mill (Line- 1)	22.9
Cement Mill – 1	21.9
Cement Mill – 2	23.7
Cement VRPM stack	Didn't Run in the month
Cement Mill- 3	21.9
Kiln Stack (Line- 2)	19.9
Crusher Stack (Line- 2)	26.6
Coal Mill (Line- 2)	20.4
Cooler (Line- 2)	26.2
DG – 04 MW	Didn't Run in the month
TPP- 15 MW (Old)	33.1
TPP- 33 MW	19.4
TPP- 15 MW (New)	Didn't Run in the month

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dB)	
	Day Time (dB)	Night Time (dB)
Plant Canteen Area	64.7	58.6
Colony	50.8	45.1
Near Old CCR Building	71.4	70.2
Near New CCR Building	74	70.4
Mines Field Office	66.2	53.5
Mines Office	60.8	54.7
TPP area	68.1	67.5
Main office	65.5	63.4

WATER QUALITY REPORT

	EFFLUENT QUALITY						Remark
	pH	COD	BOD	Oil & Grease	S.S.	TDS	
STP (treated)	8.17	56	7.5	<0.2	4	254	
Mines Work Shop (treated)	8.55	28	4.8	<0.2	2	528	
TPP DM Plant back wash (RO installed)	8.33	12	<2	<0.2	<2	90	

Note: All parameters are in mg/l except pH.

Annexure III
Ground Water Monitoring Report

Ambuja Cement

REGISTERED AD

No: ACL/BU/MINE/ 1325

Dated: January 5, 2017

To,

Ministry of Environment & Forest

Paryavaran Bhavan
CGO Complex, Lodhi Road
NEW DELHI - 110003


Sub: Ground Water monitoring report of Ambuja Cements Ltd.(Unit Bhatapara).

Dear Sir

Enclosed please find herewith the Ground Water Monitoring report of **Rawan Limestone Mines** for the quarter ending December 2016 (from October -16 to December -16), in favour of M/s Ambuja Cements Limited, (Unit Bhatapara).

Thanking You,

Yours faithfully
For Ambuja Cements Ltd.
Unit: Bhatapara


Rajoo Joshi
AVP (Mines)

Encl: As above

Cc: **The Member of Secretary,**
Central Ground Water Authority,
West Block-II, Wing-3 (Ground Floor, Sector-1), R K Puram,
NEW DELHI- 110066

The Additional Principal Chief Conservator of Forest
Ministry of Environment Forest & Climate Change
Regional Office (West Central Zone)
Ground Floor, East Wing "New Secretary Building"
Civil lines, Nagpur - 440001

The Regional Director,
Central Ground Water Board, Reena Apartment,
2nd Floor, NH-43, Dhamtari Road, Pachpedi Naka,
Raipur (CG) - 492007

o/c


AMBUJA CEMENTS LIMITED

(Unit - Bhatapara)

P.O.-Rawan, Tehsil: Belodabazar, Dist.: Belodabazar-Bhatapara (C.G.). Ph: 07727-220010 to 15, Fax: 220004
(Regd. Office : P.O. : Ambuja Nagar, Taluka : Kodinar, District : Junagarh, Gujarat. 362 715)

AMBUJA CEMENTS LIMITED, UNIT: BHATAPARA**RAWAN LIMESTONE MINES**
GROUND WATER MONITORING REPORT**FOR THE QUARTER ENDING DECEMBER-2016 (FROM OCTOBER -2016 TO DECEMBER -2016)**

STATION NO.	NAME OF VILLAGE& CITY	Water level October -16	Water level November-16	Water level December-16
1	Khamariya	1.86	3.66	5.56
2	Topa	1.56	3.11	5.01
3	Arjuni	1.25	2.90	3.80
4	Maldi	1.05	2.95	3.85
5	Devrani	0.83	1.53	1.68
6	Mopar	2.95	3.45	6.15
7	Rawan	2.85	3.15	4.15
8	Karmada	2.73	3.43	3.93
9	Pausari	2.83	3.43	6.43
10	Chhuiha	2.36	2.86	3.36
11	Baloda Bazar	2.35	0.00	0.00
12	Latua	1.13	1.63	1.68
13	Dhabadih	3.20	4.60	5.20
14	Magarchaba	1.64	1.74	4.24
15	Amera	2.15	2.15	2.75
16	Risda	1.08	1.18	1.88
17	Champa	0.90	2.20	4.00
18	Semaradih	4.00	4.75	8.20
19	Chandih	0.65	1.25	1.55
20	Khelwari	2.01	3.11	5.01
21	Kukurdi	3.50	3.65	5.50


RAJOO JOSHI
AVP (MINES)


AMBUJA CEMENTS LIMITED (UNIT-BHATAPARA)

RAWAN LIMESTONE MINES

Piezometer Data (Core Zone) Unit in M (bgl)

From October -2016 to December -2016

Area	Station Name	October 2016	November 2016	December 2016
ML AREA	TP-1	5.40	9.89	15.90
Plant	TP-2	3.42	4.03	3.42
Bhadrapali Pond	TP-3	2.32	3.14	4.26


Rajoo Joshi
AVP (Mines)

The Summarized Water Quality Data for the Quarter from Oct'16 to Dec'16

Parameters	Prescribed limits as per IS 10500	Khamariya DW/G	Topa TB/G	Mopar TB/G	Dhabadhi DW/G	Risda DW/G	Champa HP/G	Chandi HP/G	Pausari DW/G
pH value	6.5 to 8.5	7.55	7.55	7.58	7.28	7.23	7.58	7.68	7.39
Total Dissolved solids, mg/l	2000	1580.4	1608.1	813.6	1402.6	913.4	373.9	274.8	1298.3
Total hardness (as CaCO ₃) mg/l	600	584	588	420	568	468	228	176	464
Alkalinity, mg/l	600	160	236	256	300	300	216	192	248
Chlorides (as Cl) mg/l	1000	295.9	335.9	142.9	172.9	167.9	12.9	7.99	255.9
Iron (as Fe) mg/l	0.3	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	0.05	<0.05
Fluoride (as F) mg/l	1.5	0.24	0.154	0.118	0.374	0.181	0.0813	0.224	0.0981
Sulphate (as SO ₄) mg/l	400	63.2	65.6	30.6	69.7	36.7	6.30	10.3	51.6
Nitrate (as NO ₃) mg/l	45	1.80	3.30	1.60	1.20	1.10	0.7	0.1	1.2
Calcium (as Ca), mg/l	200	214.4	195.2	124.8	184	187.2	73.6	64	169.6
Magnesium (as Mg)	100	11.7	24.4	26.4	26.4	6.83	10.7	3.90	9.76

BDL (Below Detectable Level)

Ambuja Cement

REGISTERED AD

No: ACL/BU/MINE/ 1732

Dated: April 11, 2017

To,

Ministry of Environment & Forest
Paryavaran Bhavan
CGO Complex, Lodhi Road
NEW DELHI - 110003

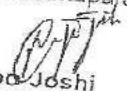
Sub: Ground Water monitoring report of Ambuja Cements Ltd.(Unit Bhatapara).

Dear Sir

Enclosed please find herewith the Ground Water Monitoring of Rawan Limestone Mines for the quarter ending March 2017 (from January-17 to March-17), in favour of M/s Ambuja Cements Limited, (Unit Bhatapara).

Thanking You,

Yours faithfully,
For Ambuja Cements Ltd.
Unit: Bhatapara


Rajoo Joshi
AVP (Mines)

Encl: As above

Cc: **The Member of Secretary,**
Central Ground Water Authority,
West Block-II, Wing-3 (Ground Floor, Sector-1), R.K. Puram,
NEW DELHI- 110066

The Additional Principal Chief Conservator of Forest
Ministry of Environment Forest & Climate Change
Regional Office (West Central Zone)
Ground Floor, East Wing "New Secretary Building"
Civil Lines, Nagpur - 444001

The Regional Director,
Central Ground Water Board, Reena Apartment,
2nd Floor, NH-43, Dhamtari Road, Pachpedi Naka,
Raipur (CG) - 492007

VE

AMBUJA CEMENTS LIMITED
(Unit - Bhatapara)

P.O. Rawan, Tehsil : Balodabazar, Dist. : Balodabazar-Bhatapara (C.G.), Ph. : 07727-220010 to 15, Fax : 220004
(Regd. Office : P.O. : Ambuja Nagar, Taluka : Kodinar, District : Junagarh, Gujarat, 362 715)


AMBUJA CEMENTS LIMITED, UNIT: BHATAPARA

RAWAN LIMESTONE MINES

GROUND WATER MONITORING REPORT

FOR THE QUARTER ENDING MARCH-2017 (FROM January -2017 TO March -2017)

STATION NO.	NAME OF VILLAGE & CITY	Water level January -17	Water level February-17	Water level March-17
1	Khamariya	7.06	7.76	10.76
2	Topa	7.26	7.51	8.21
3	Arjuni	6.35	7.05	7.25
4	Maldi	5.15	6.20	7.25
5	Devrani	1.93	2.03	3.73
6	Mopar	6.10	0.00	0.00
7	Rawan	0.00	0.00	0.00
8	Karmada	0.00	0.00	0.00
9	Pausari	9.23	9.43	10.43
10	Chhuiha	0.00	0.00	0.00
11	Baloda Bazar	0.00	0.00	0.00
12	Latua	1.73	2.13	3.68
13	Dhabadih	5.30	5.60	7.10
14	Magarchaba	3.04	2.84	2.74
15	Amera	2.85	2.55	4.05
16	Risda	2.58	2.88	3.18
17	Chamoa	4.80	5.20	5.90
18	Semaradih	0.00	0.00	0.00
19	Chandi	4.55	4.85	5.95
20	Khelwari	8.21	8.91	9.41
21	Kukurdi	5.65	0.00	0.00


RAJOO JOSHI
AVP (MINES)


AMBUJA CEMENTS LIMITED (UNIT-BHATAPARA)

RAWAN LIMESTONE MINES

Piezometer Data (Core Zone) Unit in M (bgl)

From January -2017 to March -2017

Area	Station Name	January 2017	February 2017	March 2017
ML AREA	TP-1	17.94	18.25	18.45
Plant	TP-2	3.01	3.82	3.72
Bhadrapali Pond	TP-3	3.85	3.96	3.75


Rajoo Joshi
AVP (Mines)

The Summarized Water Quality Data for the Quarter from Jan'17 to March'17

Parameters	Prescribed limits as per IS 10500	Khamariya DW/G	Topa TB/G	Mopar TB/G	Dhabadhi DW/G	Risda DW/G	Champa HP/G	Chandi HP/G	Pausari DW/G
pH value	6.5 to 8.5	7.58	7.93	7.74	7.17	7.55	7.55	7.51	7.55
Total Dissolved solids, mg/l	2000	561.5	1137.6	407.2	1270.8	619.3	339.3	372.5	1369.5
Total hardness (as CaCO ₃) mg/l	600	564	484	260	336	320	228	262	576
Alkalinity, mg/l	600	475	405	156	334	258	140	142	436
Chlorides (as Cl) mg/l	1000	45.5	77.3	56.9	118.5	56.5	34.5	42.9	117.9
Iron (as Fe) mg/l	0.3	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	0.07
Fluoride (as F) mg/l	1.5	0.281	0.263	0.332	0.275	0.178	0.142	0.278	0.131
Sulphate (as SO ₄) mg/l	400	97.4	116.2	84.2	156.3	87.4	57.6	71.8	157.3
Nitrate (as NO ₃) mg/l	45	2.50	2.90	1.30	1.40	<0.2	0.30	1.30	0.50
Calcium (as Ca) mg/l	200	172	137.6	95	100	62.4	56	74.4	176
Magnesium (as Mg)	100	32.7	34.2	4.88	20.5	40	21.5	18.5	33.2

BDL (Below Detectable Level)

Appendix
EC Letter

J-11015/ 330/ 2006- IA.II(M)
Government of India
Ministry of Environment & Forests

Tel no. 24363973

E mail: plahujarai@yahoo.com
Paryavaran Bhavan, C.G.O. Complex,
Lodi Road, New Delhi-110003.

Dated the June 8, 2007

To

The President
M/s Ambuja Cement Eastern Limited
P.O. Rawan, Tehsil Baloda Bazar,
District Raipur 493331

Sub: Rawan Limestone mines of M/s Ambuja Cement Eastern Limited at P.O. Rawan, Tehsil Baloda Bazar in district Raipur in Chhattisgarh - reg environmental clearance.

Sir,

The undersigned is directed to refer to your letter no. nil dated 17.10.2006 and subsequent communication dated 25.5.2007 on the above mentioned subject seeking environmental clearance. The Ministry of Environment and Forests has examined the application.

2. It is noted that the proposal is for seeking environmental clearance for capacity expansion of Rawan Limestone Mine from existing limestone production capacity of 2.06 million tonnes per annum to 6.31 Million tones per annum. The mine is captive to cement plant located at a distance of 1.5km. Environmental clearance to the cement plant has been accorded on 13.4.2007. Lease area of the mine is 420.95 ha, which comprises government waste land and private agricultural land. Out of 324 ha of private land, 100 ha of land has been purchased at price on mutually agreed basis. No forest land is involved. Out of 420.95 ha of the lease area, 275.77 ha is proposed for mining, 39.84 ha for OB, screen rejects and soil dumps, 0.5 ha for infrastructure, 3.75 ha for roads, 58.20 ha for green belt while 42.89 ha area will remain undisturbed. The highest and lowest elevation is 268 M and 260 M above MSL respectively. Topography of the area is flat and gently undulating. Life of the mine is 21 years. No ecologically sensitive area such as national park/sanctuary/Biosphere reserve/tiger reserve etc is located within 10km radius of ML area. Method of mining is opencast and fully mechanized. Drilling and controlled blasting is involved. Water requirement of 150 m³/d will be met from the mine sump/pit. Range of water table in the core zone in pre-monsoon and post monsoon is 18-30 m b.g.l (250-230 MRL) and 12-24 m b.g.l (256-236 MRL) respectively. Present working depth of mine is 30 m at about 235 MRL and ultimate depth is also 30 m at about 235 MRL. As per the hydrogeological study carried the water yield is low to medium. Dynamic and static reserves are 6.43 m³ /annum and 32m³/annum respectively. The radius of influence due to ground water seepage would be 80m. All the villages are located at a distance of 500m.

About 1.92 lakh m³ of top soil and 1.19 million m³ of overburden and screen rejects etc. will be generated during next 5 years. During the entire life of the mine, waste generation including the existing waste will be about 4.98 million m³, which will be kept as an external OB dump. Waste will be disposed of in the non-mineralized area. The area required for the waste dump is 39.84 ha with two terrace of 10 m height each. The dump will be stabilized by vegetation. At the end of the mining life, about 98.04 ha of area will be covered under plantation including plantation over waste dumps. It is noted that Public hearing of the project was held on 11.12.2006. IBM has approved the modification in approved scheme of mining along with progressive mine closure plan on 2.3.2007. Cost of the project is Rs. 2236 lakhs.

3. The project has been considered in accordance with the para 2.2 (2.2.1(i) (a)) interim operational guidelines of the Ministry issued on 13th October 2006 by the Ministry of Environment and Forests under Para 12 of the EIA Notification 2006.

4. Based on the information submitted by you, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006 subject to the compliance of the following Specific and General conditions:

A. Specific conditions

- (i) Top soil shall be stacked properly with proper slope with adequate safeguards and shall be backfilled for reclamation and rehabilitation of mined out area.
- (ii) Over burden shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 20 m, each stage shall preferably be of 10 m and over all slope of the dump shall not exceed 26°. The reverse slope shall be maintained to prevent wash off and water logging during rainy season. The mine pit area shall be reclaimed by back filling the OB in a phased manner. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests on six monthly basis.
- (iii) Garland drains shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.

Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.

- (iv) Controlled drilling and blasting shall be by using dust extractors/wet drilling.
- (v) Plantation shall be raised in an area of 98.04 ha including green belt of adequate width by planting the native species around the ML area, roads, OB dump sites etc. in consultation with the local DFO / Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (vi) The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (vii) Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year - pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.
- (viii) Prior permission from the competent authority shall be obtained for drawl of ground water, if any.
- (ix) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles shall be covered with a tarpaulin and shall not be overloaded.
- (x) A Final Mine Closure Plan, along with details of Corpus Fund, shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

B. General conditions

- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.

- ii. No change in the calendar plan including excavation, quantum of mineral limestone ore shall be made.
- iii. Conservation measures for protection of flora and fauna in the core & buffer zone shall be drawn up in consultation with the local forest and wildlife department.
- iv. Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, SPM, SO₂, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- v. Data on ambient air quality (RPM, SPM, SO₂, NO_x) should be regularly submitted to the Ministry including its Regional office located at Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.
- vi. Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.
- vii. Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs.
- viii. Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
- ix. Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- x. Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- xi. A separate environmental management cell with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
 - xii. The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
 - xiii. The funds earmarked for environmental protection measures shall be kept in separate account and should not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bhopal.
 - xiv. The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
 - xv. The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
 - xvi. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
 - xvii. State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
 - xviii. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same shall be forwarded to the Regional Office of this Ministry located Bhopal.
5. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.