EC COMPLIANCE REPORT
&
ENVIRONMENTAL STATUS REPORT
(October 2014 - March 2015)

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

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

Project Proponent:

M/s Ambuja Cements Ltd.
P.O. Rawan, Tehsil Baloda Bazar,
District Raipur, Chhattisgarh, India - 493331

Environment Consultant:

Anacon Laboratories Pvt. Ltd., Nagpur
Recognized by MoEF (GOI) as per EPA and valid upto Jan'2019
Accredited by NABL for Chemical & Biological), valid up to 03.10.2016
Accredited under the QCI-NABET Scheme for EIA Consultant
Certified by ISO 9001:2008, ISO 14001:2004, ISO 18001:2007
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May 2015

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 Cement Eastern 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 26º. 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 arebeing 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 at the corners of the garland drains and desilted at regular intervals.	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 drainsis carried out 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

Sr. No.	EC Conditions	Action taken /Compliance Status
		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. Thedensity 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 qualityanalysis results are enclosedas **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 Of Environment & Forests 5 years in advance of final mine closure for approval.	Noted for compliance. Final mine closure plan, along with 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.

Sr. No.	EC Conditions	Action taken /Compliance Status
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,SO2, NOx 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 NOx) 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 2014 to March 2015 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 conducted in the mines and in nearby villages. 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 trapsystem 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.

Sr. No.	EC Conditions	Action taken /Compliance Status
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 Clearancevide letter no. J-11015/330/2006-IA II (M) date:08.06.2007 • Mine is operation since 1984. • Annual financial closure is on 31st December.
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 toconcerned Panchayat/local NGO, if any, from whom suggestion/representation has been received while processingthe proposal.	Complied.
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 theclearance letter is available with the State Pollution Control Board and also at thewebsite of the Ministry of Environment and	Complied.

Sr. No.	EC Conditions	Action taken /Compliance Status
	Forests at http://envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministrylocated in Bhopal.	
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 Safety Zone

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

MONTH – October 2014

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM_{10} ($\mu g/m^3$)	Avg. $PM_{2.5}$ ($\mu g/m^3$)	Avg. SO_2 ($\mu g/m^3$)	Avg. NOx ($\mu g/m^3$)	Avg. CO ($\mu g/m^3$)
Khairtal Village	34.82	17.53	8.38	9.65	BDL
Kukurdih Village	37.62	20.2	8.97	9.69	BDL
Guest House	38.74	22.62	8.73	11.28	BDL
Water Treatment Plant	41.03	23.96	9.05	9.23	BDL
Mines Field Office (Rawan Mine)	42.43	29.69	9.74	12.41	BDL
Railway Operation	40.03	26.56	9.02	11	BDL

BDL: Below Detectable level

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (Leq in dBA)
Plant Canteen Area	60.73
Colony	47.65
Near CCR Building	69.58
Mines Field Office (Rawan Mine)	64.65
Mines Office (Rawan Mine)	57.68
TPP area	70.65
Main office	56.15

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	**COD**	**BOD**	**Oil & Grease**	**S.S.**	**TDS**	**Remark**
STP (treated)	7.49	37	12	Nil	32	241	
Mines Work Shop (treated) (Rawan Mine)	7.54	38	13	2.1	17	354	
TPP DM Plant back wash (RO installed)	5.5	Nil	Nil	Nil	0	45	

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

MONTH – November 2014

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM_{10} ($\mu g/m^3$)	Avg. $PM_{2.5}$ ($\mu g/m^3$)	Avg. SO_2 ($\mu g/m^3$)	Avg. NOx ($\mu g/m^3$)	Avg. CO ($\mu g/m^3$)
Khairtal Village	34.1	21.2	7.9	8.3	BDL
Kukurdih Village	36.2	18.2	8.2	8.3	BDL
Guest House	40.5	26. 6	9.1	10.6	BDL
Water Treatment Plant	46.1	28.1	8.3	9.3	BDL
Mines Field Office (Rawan Mine)	42.0	28.6	8.0	10.5	BDL
Railway Operation	45.0	30.2	10.6	11.9	BDL

BDL: Below Detectable level

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (Leq in dBA)
Plant Canteen Area	61.6
Colony	48.0
Near CCR Building	69.1
Mines Field Office (Rawan Mine)	65.8
Mines Office (Rawan Mine)	59.0
TPP area	59.6
Main office	56.9

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	**COD**	**BOD**	**Oil & Grease**	**S.S.**	**TDS**	**Remark**
STP (treated)	7.55	38	14	Nil	27	358	
Mines Work Shop (treated) (Rawan Mine)	7.62	32	12	1.9	29	349	
TPP DM Plant back wash (RO installed)	4.96	Nil	Nil	Nil	0	37	

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

MONTH – December 2014

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM_{10} ($\mu g/m^3$)	Avg. $PM_{2.5}$ ($\mu g/m^3$)	Avg. SO_2 ($\mu g/m^3$)	Avg. NOx ($\mu g/m^3$)	Avg. CO ($\mu g/m^3$)
Khairtal Village	37.1	24.6	8.3	8.0	BDL
Kukurdih Village	35.2	24.1	8.0	8.6	BDL
Guest House	45.1	30.2	9.9	10.3	BDL
Water Treatment Plant	49.4	29.7	9.1	9.9	BDL
Mines Field Office (Rawan Mine)	49.6	31.2	9.5	10.2	BDL
Railway Operation	44.4	29.2	9.2	10.2	BDL

BDL: Below Detectable level

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (Leq in dBA)
Plant Canteen Area	64.8
Colony	47.6
Near CCR Building	68.7
Mines Field Office (Rawan Mine)	65.9
Mines Office (Rawan Mine)	61.1
TPP area	67.7
Main office	63.0

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	**COD**	**BOD**	**Oil & Grease**	**S.S.**	**TDS**	**Remark**
STP (treated)	7.6	44	16	Nil	24	382	
Mines Work Shop (treated) (Rawan Mine)	7.7	28	10	1.8	22	361	
TPP DM Plant back wash (RO installed)	5.7	Nil	Nil	Nil	0	69	

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

MONTH – January 2015

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM_{10} ($\mu g/m^3$)	Avg. $PM_{2.5}$ ($\mu g/m^3$)	Avg. SO_2 ($\mu g/m^3$)	Avg. NOx ($\mu g/m^3$)	Avg. CO ($\mu g/m^3$)
Khairtal Village	34.0	29.45	9.51	8.57	BDL
Kukurdih Village	33.4	28.61	9.14	8.93	BDL
Guest House	40.5	30.21	10.45	10.36	BDL
Water Treatment Plant	45.9	32.14	12.46	12.1	BDL
Mines Field Office (Rawan Mine)	45.7	32.74	12.74	9.99	BDL
Railway Operation	46.2	31.55	12.74	11.81	BDL

BDL: Below Detectable level

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (Leq in dBA)
Plant Canteen Area	65.5
Colony	47.7
Near CCR Building	68.5
Mines Field Office (Rawan Mine)	66.5
Mines Office (Rawan Mine)	58.0
TPP area	65.8
Main office	58.8

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	**COD**	**BOD**	**Oil & Grease**	**S.S.**	**TDS**	**Remark**
STP (treated)	7.41	36	16	Nil	29	414	
Mines Work Shop (treated) (Rawan Mine)	7.55	34	14	1.7	24	346	
TPP DM Plant back wash (RO installed)	5.10	Nil	Nil	Nil	0	29	

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

MONTH – February 2015

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM_{10} ($\mu g/m^3$)	Avg. $PM_{2.5}$ ($\mu g/m^3$)	Avg. SO_2 ($\mu g/m^3$)	Avg. NOx ($\mu g/m^3$)	Avg. CO ($\mu g/m^3$)
Khairtal Village	39.7	33.8	7.90	8.40	BDL
Kukurdih Village	41.3	28.9	7.14	9.30	BDL
Guest House	42.8	26.2	7.90	8.40	BDL
Water Treatment Plant	54.1	37.3	10.8	12.7	BDL
Mines Field Office (Rawan Mine)	54.9	34.7	9.74	14.3	BDL
Railway Operation	56.1	33.7	8.68	12.9	BDL

BDL: Below Detectable level

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dBA)	
	Day Time (dBA)	Night Time (dBA)
Plant Canteen Area	66.8	64.2
Colony	49.5	47.6
Near Old CCR Building	69.2	68.4
Near New CCR Building	68.8	67.8
Mines Field Office (Rawan Mine)	65.5	64.2
Mines Office (Rawan Mine)	56.0	52.0
TPP area	64.2	63.4
Main office	59.8	57.4

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	COD	BOD	Oil & Grease	S.S.	TDS	Remark
STP (treated)	7.75	32	14	Nil	32	392	
Mines Work Shop (treated) (Rawan Mine)	7.80	30	12	1.6	26	358	
TPP DM Plant back wash (RO installed)	5.40	Nil	Nil	Nil	0	38	

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

MONTH – March 2015

AMBIENT AIR MONITORING REPORT

Monitoring Station	Avg. PM_{10} ($\mu g/m^3$)	Avg. $PM_{2.5}$ ($\mu g/m^3$)	Avg. SO_2 ($\mu g/m^3$)	Avg. NOx ($\mu g/m^3$)	Avg. CO ($\mu g/m^3$)
Khairtal Village	42.5	28.4	9.2	10.4	BDL
Kukurdih Village	43.6	33.8	8.6	10.1	BDL
Guest House	45.8	31.8	9.3	10.9	BDL
Water Treatment Plant	57.2	38.8	10.2	11.8	BDL
Mines Field Office (Rawan Mine)	58.9	37.1	10.8	12.6	BDL
Railway Operation	58.1	36.7	11.6	13.5	BDL

BDL: Below Detectable level

AMBIENT NOISE LEVEL REPORT

Location	Noise Level (dBA)	
	Day Time (dBA)	Night Time (dBA)
Plant Canteen Area	66.2	65.9
Colony	47.3	46.9
Near Old CCR Building	67.9	67.6
Near New CCR Building	68.2	67.8
Mines Field Office (Rawan Mine)	60.9	60.6
Mines Office (Rawan Mine)	60.0	59.6
TPP area	67.9	67.5
Main office	65.0	59.6

WATER QUALITY REPORT

EFFLUENT QUALITY							
	pH	COD	BOD	Oil & Grease	S.S.	TDS	Remark
STP (treated)	7.79	30	12	Nil	28	484	
Mines Work Shop (treated) (Rawan Mine)	7.82	28	12	1.7	28	380	
TPP DM Plant back wash (RO installed)	5.49	Nil	Nil	Nil	0	9	

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

The summarized Water Quality Data for the quarter from October 2014 to December 2014

Parameters	Prescribed limits as per IS 10500	Khamariya DW/G	Topa TB/G	Mopar TB/G	Dhabadih DW/G	Risda DW/G	Champa HP/G	Chandi HP/G	Pausari DW/G
pH value	**6.5 to 8.5**	6.58	6.78	6.63	6.79	6.79	7.92	7.11	6.91
Total Dissolved solids, mg/l	**2000**	696	1582	1059	460	668	448	238	482
Total hardness (as CaCO3) mg/l	**600**	411.6	666.4	403.8	184.2	297.9	50.9	133.3	231.3
Alkalinity, mg/l	**600**	326	330	430	304	296	296	156	228
Chlorides (as Cl) mg/l	**1000**	83.9	419.8	159.9	29.9	104.9	14.9	12.9	49.9
Iron (as Fe) mg/l	**1.0**	0.03	0.05	0.02	0.04	0.04	0.02	0.03	0.02
Fluoride (as F) mg/l	**1.5**	0.1	0.3	0.2	0.8	0.2	0.5	0.3	0.1
Sulphate (as SO4) mg/l	**400**	37.3	126	91.5	21.4	30.3	7.9	12.4	<8.0
Nitrate (as NO3) mg/l	**45**	4.8	6.8	5.0	1.2	5.6	0.2	0.8	3.0
Calcium (as Ca), mg/l	**200**	130.1	210.1	108.2	53.3	98.8	14.1	48.6	81.5
Magnesium (as Mg)	**100**	21.0	34.4	32.5	12.4	12.4	3.82	2.86	6.69

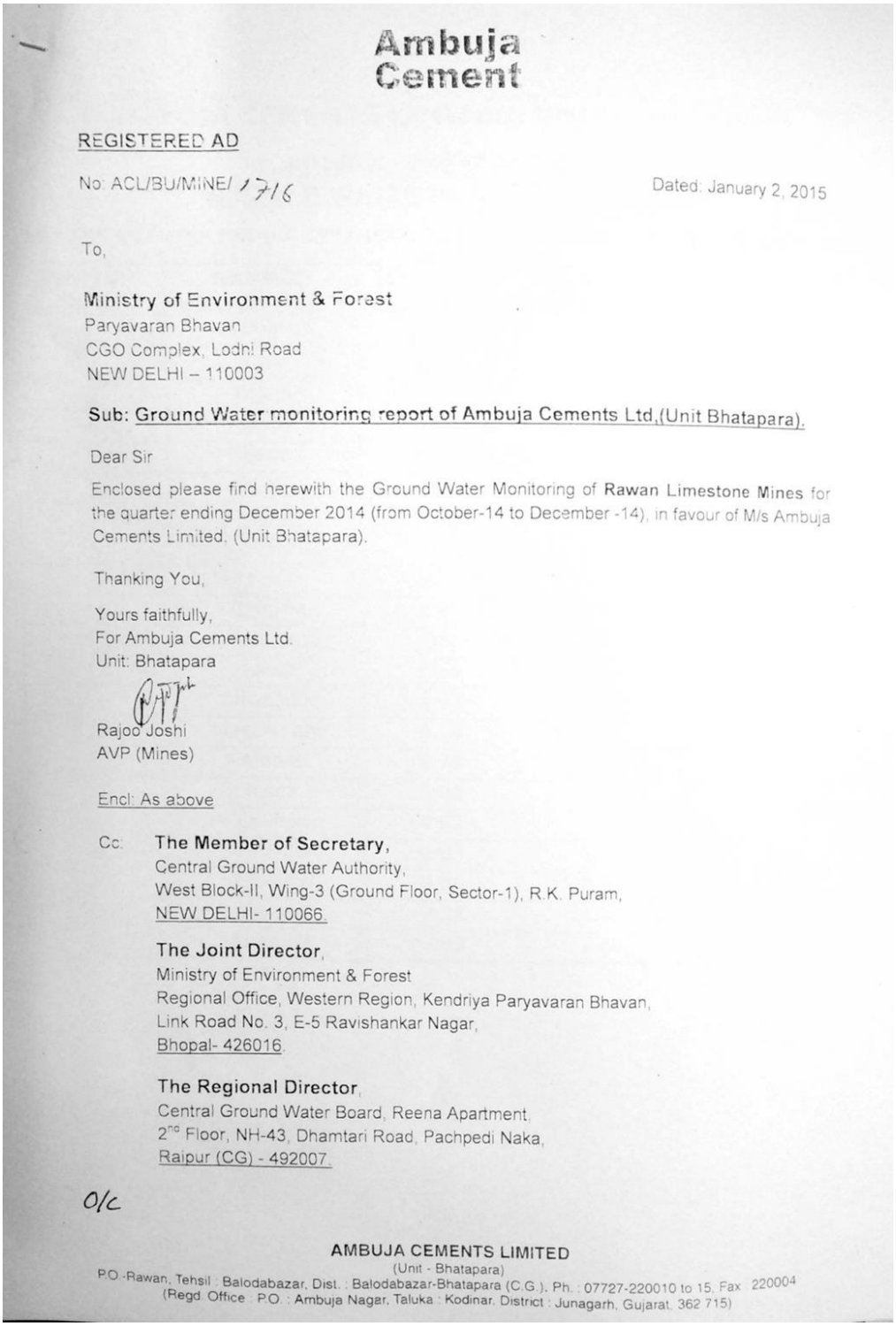
BDL (Below Detectable Level)

The Summarized Water Quality Data for the Quarter from January 2015 to March 2015

Parameters	Prescribed limits as per IS 10500	Khamariya DW/G	Topa TB/G	Mopar TB/G	Dhabadih DW/G	Risda DW/G	Champa HP/G	Chandi HP/G	Pausari DW/G
pH value	**6.5 to 8.5**	8.08	7.33	7.61	7.41	7.37	7.50	7.51	8.27
Total Dissolved solids, mg/l	**2000**	444	574	168	380	818	372	940	442
Total hardness (as CaCO3) mg/l	**600**	124	376	136	300	460	288	556	52
Alkalinity, mg/l	**600**	248	172	60	152	244	160	152	168
Chlorides (as Cl) mg/l	**1000**	33.3	176.1	3.91	86.1	195.7	48.9	332.7	37.2
Iron (as Fe) mg/l	**0.3**	0.01	0.05	<0.001	<0.001	0.03	0.02	0.005	0.06
Fluoride (as F) mg/l	**1.5**	0.30	0.47	0.20	0.34	0.74	0.56	0.84	0.22
Sulphate (as SO4) mg/l	**400**	40.2	41.8	19.1	39.9	83	31.9	82.3	28.6
Nitrate (as NO3) mg/l	**45**	0.9	3.4	0.89	7.22	3.9	4.6	5.6	0.02
Calcium (as Ca), mg/l	**200**	27.2	121.6	49.6	107.2	126.4	92.8	182.4	16
Magnesium (as Mg)	**100**	13.7	17.6	2.93	7.81	35.1	13.7	24.4	2.92

BDL (Below Detectable Level)

Annexure III
Ground Water Monitoring Report



Ambuja Cement

REGISTERED AD

No: ACL/BU/MINE/ 1716 Dated: January 2, 2015

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 December 2014 (from October-14 to December -14), 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 Joint Director,
Ministry of Environment & Forest
Regional Office, Western Region, Kendriya Paryavaran Bhavan,
Link Road No. 3, E-5 Ravishankar Nagar,
Bhopal- 426016.

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 : 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 DECEBER-2014 (FROM October -2014 TO December -2014)

STATION NO.	NAME OF VILLAGE& CITY	Water level October -14	Water level November-14	Water level December-14
1	Khamariya	3.09	3.91	5.26
2	Topa	2.10	3.26	5.61
3	Arjuni	1.63	3.70	3.80
4	Maldi	1.60	2.55	3.70
5	Devrani	0.21	1.13	1.48
6	Mopar	2.44	3.40	5.46
7	Rawan	2.59	3.60	3.65
8	Karmada	2.14	3.28	3.16
9	Pausari	3.03	5.53	7.43
10	Chhuiha	2.25	2.61	Dry
11	Baloda Bazar	Dry	Dry	Dry
12	Latua	0.14	1.58	1.10
13	Dhabadih	3.43	4.55	4.95
14	Magarchaba	0.64	1.19	3.79
15	Amera	0.78	1.45	1.96
16	Risda	1.00	1.28	1.91
17	Chanpa	0.62	2.00	3.61
18	Semaradih	3.63	5.75	8.65
19	Chandih	0.36	0.85	2.04
20	Khelwari	2.32	3.16	6.14
21	Kukurdih	3.63	2.60	5.67

RAJOO JOSHI
AVP (MINES)

AMBUJA CEMENTS LIMITED (UNIT BHATAPARA)

RAWAN LIMESTONE MINES

Piezometer Data (Core Zone) Unit in M (bgl) (From October -2014 to December-2014)

Area	Station Name	October-2014	November-2014	December-2014
ML AREA	TP-1	8.05	12.13	16.72
Plant	TP-2	2.70	2.70	2.70
Bhadrapali Pond	TP-3	2.53	3.34	4.06

Rajoo Joshi
AVP (Mines)

Ambuja Cement

REGISTERED AD

No ACL/BU/MINE/ 0030 Dated April 4, 2015

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 2015 (from January -15 to March-15), 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 Joint Director,
Ministry of Environment & Forest
Regional Office, Western Region, Kendriya Paryavaran Bhavan,
Link Road No. 3, E-5 Ravshankar Nagar,
Bhopal- 426016.

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

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-2015 (FROM January -2015 TO March -2015)

STATION NO.	NAME OF VILLAGE& CITY	Water level January -15	Water level February-15	Water level March-15
1	Khamariya	6.15	9.59	10.51
2	Topa	6.86	7.08	8.01
3	Arjuni	4.75	5.97	6.7
4	Maldi	4.50	6.35	7.05
5	Devrani	1.73	1.88	3.98
6	Mopar	5.85	Dry	Dry
7	Rawan	3.70	3.75	Dry
8	Karmada	3.68	5.66	Dry
9	Pausari	8.13	9.82	10.25
10	Chhuiha	Dry	Dry	Dry
11	Baloda Bazar	Dry	Dry	Dry
12	Latua	1.38	2.08	3.75
13	Dhabadih	5.55	5.97	6.85
14	Magarchaba	1.99	2.07	2.26
15	Amera	2.35	2.75	4.02
16	Risda	2.48	1.56	2.02
17	Chanpa	4.53	5.11	5.65
18	Semaradih	9.15	10.15	Dry
19	Chandih	3.82	4.83	5.85
20	Khelwari	6.46	8.76	9.2
21	Kukurdih	6.20	6.42	6.8

RAJOO JOSHI
AVP (MINES)

AMBUJA CEMENTS LIMITED (UNIT-BHATAPARA)

RAWAN LIMESTONE MINES

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

From January -2015 to March -2015

Area	Station Name	January 2015	February 2015	March 2015
ML AREA	TP-1	17.64	17.94	17.84
Plant	TP-2	3.42	3.62	3.92
Bhadrapali Pond	TP-3	9.16	4.36	6.20

Rajoo Joshi
AVP (Mines)

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 Chhatisgarh – 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, NOx 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, SO_2, NOx) 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.

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.

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 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

Yours faithfully,

P. Ahujarai

(Dr. P.L. Ahujarai)
Director

Copy to:

1. Secretary, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
2. The Principal Secretary, Environment, R. No. 153 Dau, Kalyan Singh Bhawan , Secretariat, Government of Chhattisgarh, Raipur-492001
3. Secretary, Department of Mines and Geology, Government of Chhattisgarh, Raipur.
4. Chairman, Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Line, Raipur.
5. Secretary, Department of Forests, Government of Chhattisgarh, Raipur.
6. Chief Wildlife Warden, Government of Chhatisgarh, Raipur.
7. Chairman, Central Pollution Control Board, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
8. Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office, E - 3 / 240, Arera Colony Bhopal - 462 016.
9. Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
11. District Collector, Raipur district, Chhattisgarh.
12. EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
13. Monitoring File.
14. Guard File.
15. Record File.

(Dr. P. L. Ahujarai)
Director