Ambuja O(C(EMD)
Cement

77103/5

REGD. A/D

ACL/EMD/F-16/2015/511

24.11.2015

The Director (s),

Ministry of Environment & Forest (MoEF), Regional Office, Western Region, "Kendriya Paryavaran Bhavan" Link Road No.3, Ravi Shankar Nagar, Bhopal – 462016, (M.P.)

Sub.: Half Yearly Compliance Status Report of Environmental Clearance of Sugala

Limestone Mines.

Ref.: Environmental Clearance Order No. J-11015/6/2000-IA-II (M) dated 20.06.2002

Sir,

We are pleased to submit herewith half yearly compliance status report (i.e. for the period of April'15 to September'15) of Environmental Clearance Order No. J-11015/6/2000-IA-II (M) granted by MoEF to **Sugala Limestone Mines** of Ambuja Cements Ltd. located at village — Sugala & Jagatiya, Taluka - Kodinar, District — Gir Somnath (Gujarat). We are also enclosing here with CD containing soft copy of the same.

In case of further clarification/information require, we shall be please to provide the same.

Thanking you,

Yours Faithfully,

For Ambuja Cements Ltd.

Dr. Anand K. Rai HOD (Environment)

Encl.: As above.

SEIAAuthority
Received in
M. S. Office
Dt. Solliffs
Sign

- Central Pollution Control Board Privesh Bhavan, Atmajyoti Ashram Rd, Opp. VMC Ward Office No. 10, Subhanpura, Vadodara – 390023 (Gujarat)
- 2) Member Secretary, Gujarat Pollution Control Board, Paryavaran Bhavan, Sector-10-A,Gandhinagar-382010

Regd. Office:

PO: Ambujanagar - 362 715, Tal: Kodinar, Dist.: Gir Somnath (Gujarat)

> Phone: (02795) 221137, 232009, Fax: (02795) 220328, 232032

**Ambuja Cements Limited** 

(Unit : Ambujanagar)

CIN No.: L26942GJ1981PLC004717 www.ambujacement.com **Corporate Office:** 

Elegant Business Park, MIDC Cross road 'B' Off Andheri - Kurla Road, Andheri (E), Mumbai - 400 059. Phone : (022) 4066700 3) Regional Officer Gujarat Pollution Control Board, Opp. Saint Anne's Church Station Road, Junagadh.

#### MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

Ministry of Environment & Forests Regional Office (W), Bhopal Monitoring Report Part-I

#### **DATA SHEET**

Date: 24.11.2015

01 Project type : Mining

02 Name of the project : Sugala Limestone Mining Project

03 Clearance letter(s) / OM no. and date : J-11015/6/2000 – IA,II (M),

dated 20.06.2002

04 Location

a) District(s) : Gir Somnath

b) State(s) : Gujarat

c) Latitude : 20° 52' 45" – 20° 54' 45"

d) Longitude : 70° 45' 30" – 70° 46' 45"

05 Address for correspondence :

a) Address of concerned Project Chief : Shri Dinkar Dashora

Engineer (with pin code & telephone / : GM (Mines)

telex / fax numbers). : Ambuja Cements Ltd.

PO: Ambujanagar , Taluka - Kodinar

District : Gir Somnath (Gujarat)

Pin: 362715

Tel: -02795-237011

Fax: 02795 - 220328/232032

b) Address of Executive Project Engineer: Shri Deepak Dhurde,

/ Manager (with pincode / fax : Manager ( Mines ), numbers. : Ambuja Cements Ltd

PO :Ambujanagar , Taluka - Kodinar

District : Gir Somnath (Gujarat)

Pin.: 362715 Tel: 02795-237217

Fax: 02795 - 220328/232032

06 Salient features

a) of the project : Ambuja Cements Ltd. has cement

manufacturing plant at Ambujanagar in

Kodinar Taluka of Gir Somnath District. Limestone is the main raw material for the cement plants. The materials are being exploited from company's own captive mines i.e. Sugala Limestone Mine.

Sugala is located at a distance of about 18 kms in NNE direction with respect to cement plant. The rated capacity of the limestone is 1.29 MTPA.

- b) of the environmental management plans
- Mining operations do not involve drilling and blasting for material rising. Limestone excavation being carried out by Surface Miner & Ripper Dozer
- \* Regular monitoring of environmental parameters is carried out as per the norms evolved by MoEF and IBM.
- \* Preventive maintenance of deployed HEMM being undertaken on regular basis.
- Dust suppression by water sprinkling on haul roads and in working area.
- Afforestation / Green belt development along haul road near office building and lease periphery is being implemented.
- \* Mined-out areas would be converted to plantation / agri-farm and water reservoirs as envisaged in the mining plan partial reclaiming already done.
- \* Socio-economic improvement measures are being undertaken in the project buffer zone as envisaged.
- 07 Break up of the project area.
  - a) Submergence area (forest & non-forest)

Not applicable

414.8493 ha b) Private Land Govt. Land 2.5091 ha

80 Break up of the project affected population with enumeration of those losing houses / dwelling units only, agricultural land only, both dwelling units & agricultural land & landless labourers / artisan.

: There are no houses in the core zone area, hence not applicable.

a) SC, ST / Adivasis Not applicable

b) Others Not applicable

09 Financial details

> a) Project cost as originally planned and : subsequent revised estimates and the year of price reference.

Limestones raised from Sugala area partially supplement the requirements of existing cement units. As it is a captive mine for the existing cement plants, no separate project costing was made.

b) Allocation made for environmental management plans with item wise and year wise break-up.

Pl. refer Annexure VIII

c) Benefit cost ratio / Internal rate of return and the year of assessment. : No separate assessment made, as it is : a captive mine.

d) Whether (c) includes the cost of environmental management as shown: in the above.

Not applicable.

e) Actual expenditure incurred on the project so far.

Rs. 7.87 Crores.

f) Actual expenditure incurred on the environmental management plans so far.

Rs. 6.50 Crores

10 Forest land requirement.

forest land for non-forestry use

a) The status of approval for diversion of: The project area does not comprise of any forest land hence not applicable.

b) The status of clearing felling : Not applicable c) The status of compensatory : Not applicable afforestation, if any d) Comments on the viability & : Not applicable sustainability of compensatory afforestation programme in the light of actual field experience so far. The status of clear felling in non-forest : The project does not involve clear felling areas (such as submergence area of of trees. reservoir, approach roads), if any with quantitative information. Status of construction. a)Date of commencement (Actual and / or: 2<sup>nd</sup> November 2002 planned) b)Date of completion (Actual and / or : Continued planned). Reasons for the delay if the project is yet: Not applicable. to start. Dates of site visits a) The dates on which the project was : 12.10.10 to 13.10.10 by Dr. A. Mehrotra monitored by the Regional Office on Regional Office, Bhopal previous occasions, if any. b) Date of site visit for this monitoring: 12.10.10 to 13.10.10 report

Details of correspondence with project:
authorities for obtaining action plans /:
information on status of compliance to:
safeguards other than the routine letters:
for logistic support for site visits).:

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Half yearly compliance status report is being regularly submitted and last submission was on 27.05.2015 vide

letter no.ACL/EMD/F-16/2015.

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S No.	Condition		Compliance Status
A. Spe	cific Conditions		
i	Mining activities including transportation of material from the mine site should be carried out only during day time (6 a.m. to 6 p.m.).	•	Mining activities including transportation of material from the mine site is being carried out only during day time (6 a.m. to 6 p.m.)
ii	Company should contribute for development of fodder plots in the nearby reserve forests areas.	•	ACL jointly with Forest Dept have developed 9.0 ha. of fodder plot at Sabdharvidi, Jamvala. Photographs with details of fodder plot developed has been already submitted to MoEF vide our submission dated 25.12.2010 vide letter no. ACL/EMD/F-16/2010/55926.
iii	Prior permission from the Forest Department / concerned authorities should be taken for cutting of trees for any mining activity in the lease area.		Permission has been obtained from Mamlatdar, Kodinar for cutting of trees in mine lease area. Copy of permission granted by Mamlatdar has been already submitted to MoEF vide our submission dated 25.12.2010 vide letter no.ACL/EMD/F-16/2010 /55926.
iv	A 250 m wide corridor along the nearest bank of singoda river should be kept undisturbed.	•	Point noted and being Complied. Corridor along the nearest bank of Singoda River has been kept undisturbed.
V	Fencing (other than barbed wire) all around the lease area should be provided.	•	Peripheral fencing of bella stone is provided along excavated area. Total 3979 meters of brick wall and 2593 meters of barbed wire fencing have been done.
vi (a)	In the eventuality of any drought in the area, the project authorities should take prior approval of the Central Ground Water Authority for dewatering the mine and Ministry of Environment & Forest should be kept informed.	•	Point noted & will be complied if drought conditions prevail in future.
vi (b)	In case of depletion of water in the wells of nearby villages, the project authorities should provide water supply free of cost to the villagers.	•	Point noted & will be supplied if required.
vii	Construction of check dam(s) in the shingoda river and also release of mine water discharge should be undertaken with	•	So far we have constructed 06 nos. of Check dams on river Shingoda and 01 no. of tidal regulator at

	WOEF Letter NO : J-11015/6/2000-1	٠٠,	,
	prior approval of Chief Wild Life Warden (CWLW), Government of Gujarat to ensure undisturbed movement of lions through the Shingoda river bed, which is an established migratory route for lions and other animals.		Muldwarka.  All the check dams constructed on Shingoda River are located in downstream area from mine lease boundary on Shingoda River. All the check dams have been constructed under partnership with Govt. of Gujarat. Permission granted by Govt. of Gujarat, has been already submitted to MoEF vide our submission on 25.12.2010 vide letter no. ACL/EMD/F-16/2010/55926. List of Check dams constructed are enclosed as <b>Annexure I</b>
viii	Top soil should be properly stacked at earmarked dump site(s) with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	•	Top soil generated during mining operation is being stacked at designated area and being used for mines reclamation and green belt development.
ix	Catch dams and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows soil and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained.  Garland drain (Size, gradient & length ) and sump capacity should be designed keeping 50 % safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.	•	To collect surface run-off and arrest silt and sediment flow from the soil & mineral stacks, garland drains along with settling pond is constructed along the toe of the stacks, ultimately drain water collected into mined out pit. The drains are properly maintained and water so collected is utilized for agri-farming.
X	A green belt of adequate width all around the ML area should be developed by planting the native plant species in consultation with local DFO/ Agriculture Department. At least 2000 plant species / ha. Should be planted. Plantation should also be raised along the roads, canal, dump sites etc.	•	Regular interactions are being carried out with agriculture university & forest dept. for plantation /afforestation. Even forest dept. is using sapling from our nursery for tree plantation. Details of mines reclamation and plantation are enclosed as Annexure II (A) & II (B).
xi	The North block of the mine should be fully converted to agricultural farms; the middle block should also be converted to agricultural farms/orchards and partly for water harvesting. Southern block of the	•	Suggested scheme partly implemented to the mined out blocks, as per approved mining plan /mining scheme.

	mine should be converted to reservoir for water storage. Efforts should be made to backfill the worked out areas concurrently to the extent possible.		
xii	A detailed mine decommissioning plan should be submitted to the Ministry of Environment & Forests 5 years in advance for approval.	•	Point noted and will be complied.
xiii	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring should be done four times a year – premonsoon (April/May), monsoon (August), post-monsoon (November), and winter (January). Data thus collected should be sent at regular intervals to MoEF & the Central Ground Water Authority.	•	Ground water level & quality monitoring is being done regularly by establishing a network of ground water monitoring stations (existing wells and installing new piezometers). Report is submitted to MoEF regional office Bhopal on six monthly basis. Ground water level & quality monitoring reports are enclosed as <b>Annexure VI.</b>
xiv	Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in three years for monitoring land use pattern and physiographic of the area and report submitted to the Ministry and its Regional Office at Bhopal.	•	Land use pattern report is conducted by RRSC Jodhpur (June-13). Report has been already submitted to MoEF vide our submission dated 10.04.2014 vide letter no. ACL/EMD/F-16/2014/329/73120.
xv	Vehicular emissions should be kept under control and regularly monitored.	•	Vehicular emissions are being checked & monitored regularly. Detail of P.U.C certificate by Omkar driving school & P.U.C center (Approved by Government of Gujarat) is enclosed as <b>Annexure IX.</b>
B. Gen	eral Conditions		
i	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.	•	Point noted and being complied.
ii	No change in the calendar plan including excavation, quantum limestone and marl, waste / OB dumps should be made.	•	Point noted and being complied.
iii	Five ambient air quality monitoring stations should be established in the core zone as well as buffer zone for SPM, RPM, SO2, NOx and CO monitoring. Location of the ambient air quality stations should be decided on the meteorological data, topographical features and environmentally and ecologically sensitive targets in	•	Five ambient air quality monitoring stations have been established in core & buffer zone. Ambient air quality monitoring results for the period April'15 to September'15 is enclosed as <b>Annexure VII</b> . The location of the monitoring stations is finalized in consultation with GPCB

VIGC	WIDER Letter No. J-11015/6/2000-1	Λ,	
	consultations with the State Pollution Control Board.		and renowned consultant Sh. B Padmanabh Murthy, Professor of JNU and former Director of IMD Met-Dept.
iv	Data on ambient air quality should be regularly submitted to the Ministry including its Regional Office at Bhopal and the State Pollution control Board/ Central Pollution Control Board once in six months.	•	Half yearly ambient air quality monitoring report is being regularly submitted to MoEF, our last submission was on 27.05.2015 vide letter no.ACL/EMD/F-16/2015. Ambient air quality monitoring results for the period April'15 to September'15 is enclosed as <b>Annexure VII.</b>
V	Adequate measures for control of fugitive emissions should be taken during drilling and blasting operations, loading and transportations of minerals etc.	•	Environment friendly Surface Miner machine is being used for mining. This has been provided with inbuilt facility of water sprinkling to suppress dust generated during mining. On all haul roads regular water sprinkling is being done by water tankers. Monitoring results of Air borne dust survey is enclosed as <b>Annexure III.</b>
vi	Adequate measures should be taken for control of noise levels below 85 dB (A) in the work environment.	•	All the workers working in high noise areas has been provided with ear plug/ear muffs. Ambient noise monitoring as well as HEMM noise monitoring report is enclosed as <b>Annexure IV &amp; V.</b>
vii	Personnel working in dusty areas should wear protective respiratory device and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers should be undertaken periodically to observe any contraction due to exposures of dust and corrective measures, if needed.		All personnel working in mines are provided with dust masks, safety shoes, safety goggle & Helmet. Occupational health surveillance program of the workers is being undertaken periodically by our Occupational Health Centre.
viii	The fund earmarked for Environmental protection measures should be kept in separate account and not diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment & Forests.	•	Details of capital and recurring expenditure for environmental protection measures are enclosed as <b>Annexure VIII.</b>
ix	The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated Environmental safeguards. The project authority should send one set of EIA/	•	Point noted. Full support and co-operation is being extended during the visit of officers from Ministry of Environment

	TAB	,	
I I	EMP report and mining plan to them and		& Forest, CPCB as well as GPCB
	extend full co-operation to officer(s) of the	•	Project was monitored by Dr. A.
	Regional Office by furnishing the requisite		Mehrotra (Regional Office, Bhopal)
	data/information/monitoring reports.		during 12.10.10 to 13.10.10.
	The project authority should inform to the	•	Point noted.
	Regional Office located at Bhopal as well as		
	to the Ministry of Environment & Forests		
	regarding date of financial closures and final		
	approval of the project by the concerned authorities and the date of start of land		
	development work.		
	The State Pollution Control Board should	•	GPCP is the concern authority for
	display a copy of the clearance letter at the		GPCB is the concern authority for the same.
	Regional Office, District Industry		the same.
	The Project authorities should advertise at	•	Advertisement was published in two
	least in two Local newspapers widely		local news papers. Copy of
	circulated around the project, one of which		advertisement has been submitted to
	shall be in the vernacular language of the		MoEF on 25.12.2010 vide letter no.
	locality concerned within seven days of the		ACL/EMD/F16/2010/55926.
i	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 may also be		
	seen at web site of the Ministry of		
	Environment & Forests at		
	http://envfor.nic.in.and a copy of this		
	ministry at Bhopal.  The Ministry or any other competent	•	Point Noted
	The Ministry or any other competent	•	Point Noted.
	authority may stipulate any further condition for environmental protection.		
	Failure to comply with any of the conditions	•	Point Noted.
	mentioned above may result in withdrawal		i oiiit ivoteu.
	of this clearance.		
	The above conditions will be enforced, inter	•	Point Noted.
I I	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		
1 .	rules.	l	

### **Annexure – I**

### **Details of Check dams across River Shingoda**

Sr. No.	Name of Village	Type of Structure	Year of Construction	Total Cost Rs. In Lacs	Storage Capacity in MCFT
1	Ronaj	Construction of Check dam	2002	35.17	6.31
2	Dudana (Fruit Nursery)	Check dam height raising	2001	7.1	3.51
3	Chhachhar	Construction of Check dam	2004	12.06	6.2
4	Dudana	Construction of Check dam	2004	47.62	5.25
5	Kodinar ( Kubeshwar )	Construction of Check dam	2004	23.1	4.17
6	Muldwarka	Construction of Tidal Regulator	2009	79.58	57.64
7	Ronaj (Bhekheshwar Dam)	Dam , Under construction	Start in 2009	840	35.0

### ANNEXURE II (A)

SUGALA M	NES Greenbelt &	Plantation Det	ails till Septer	mber 2015
Total Lease Area (in ha)	Opened up Area (in Ha)	Planted Area (in Ha)	Pasture land (in Ha)	Water Body (in Ha)
417.3584	145.6343	10.0592	27.1648	47.85

### **Green Belt in Sugala Mines**

### Annexure II (B)





### **Green Belt in Sugala Mines**

Annexure II (B)





### **Green Belt in Sugala Mines**

### Annexure II (B)



Existing green belt developed in mined out areas



Annexure - III Air Borne Dust Survey - Sugala Mines (April-2015 to September-2015)

	Machine : S	Surface Mil	ner		Machine : L	Oozer		Machine : Loader				
Date	Period	Location	RSPM (mg/m3)	Date	Period	Location	RSPM (mg/m3)	Date	Period	Location	RSPM (mg/m3)	
16-Apr-14	0600 - 1400		0.35	17-Apr-14	0600 - 1400		0.3	18-Apr-14	0600 - 1400		0.37	
14-May-14	0600 - 1400	bin	0.27	15-May-14	0600 - 1400	bin	0.23	16-May-14	0600 - 1400	bin	0.30	
15-Jun-15	0600 - 1400	Ca	0.30	16-Jun-15	0600 - 1400	Ca	0.34	17-Jun-15	0600 - 1400	Ca	0.28	
13-Jul-15	0600 - 1400	ide	0.25	14-Jul-15	0600 - 1400	ide	0.3	14-Jul-15	0600 - 1400	ide	0.28	
17-Aug-15	0600 - 1400	lus	0.37	18-Aug-15	0600 - 1400	lns	0.4	19-Aug-15	0600 - 1400	Ins	0.35	
17-Sep-15	0600 - 1400	400	0.4	18-Sep-15	0600 - 1400		0.33	19-Sep-15	0600 - 1400		0.36	

**Annexure - IV** 

	Ambient	Noise Lev	el Monitor	ing - Sug	jala Mine	s (April-20	015 to Se	epteber-20	)15)						
Manth	Noise Levels in dB(A)														
Month	Near Surfac	e Miner	Haul	road	Mines	o Office	Sugala	a Village	Chidiva	v Village					
	Leq (Day)	Leq (Night)	Leq (Day)	Leq (Night)	Leq (Day)	Leq (Night)	Leq (Day)	Leq (Night)	Leq (Day)	Leq (Night)					
Apr-15	65	61	60	56	60	53	69	56	50	35					
May-15	68	64	64	57	59	56	64	57	46	38					
Jun-15	66	63	67	61	62	60	67	65	46	39					
Jul-15	70	65	64	61	63	59	68	58	47	37					
<b>Aug-15</b> 68		65	69	57	58	53	69	66	46	35					
Sep-15			68	56	59	55	67	58	47	38					

### **Annexure - V**

			Noise Level of HEMM	I - Sugala Mines (A	pril-2015 - Septe	mber-2015)			
Machine		Surface Miner			Loader			Dozer	
Month	Conditions	Nois	e Levels (dB)	Conditions	Noise Leve	els (dB)	Conditions	Noise Le	vels (dB)
World		At 5m. distance	At 10m. distance	Conditions	At 5m. distance	At 10m. distance	Conditions	At 5m. distance	At 10m. distance
		Leq	Leq		Leq	Leq		Leq	Leq
Apr-15	While dozing the material	75	71	While loading to tipper	73	69	While mining	74	71
May-15	While dozing the material	72	69	While loading to tipper	78	74	While mining	75	71
Jun-15	While dozing the material	78	73	While loading to tipper	73	70	While mining	73	69
Jul-15	While dozing the material	73	70	While loading to tipper	71	67	While mining	73	69
Aug-15	While dozing the material	72	68	While loading to tipper	78	76	While mining	75	72
Sep-15	While dozing the material	78	73	While loading to tipper	75	70	While mining	74	71

#### Annexure - VI

Aρ	ril'	20	15
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S.N.	Ref.No.	IS 10500	):2012 (S.R)					Craund Wat	as Ouality D		ala Minaa /A	-:! 001E\					Piezometers
		Desirable	Permissible					Ground Wal	er Quality R	eport or Sug	ala Mines (A	)rii-2015)					Piezometers
	Source			W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	no-2
	Village			SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA
	Taluka			KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR
	District			GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATI	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH
1	Color Hazen Units	5	25	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Turbidity NTU	5	10	0.58	0.36	0.45	0.62	0.38	0.88	0.35	0.4	0.26	0.51	0.49	0.52	0.47	0.94
4	Dissolved Solids mg/I	500	2000	436	430	488	488	386	476	552	480	516	540	644	604	474	380
5	pH	6.5 to 8.5	No Relaxation	8.3	8.32	8.29	8.29	8.22	8.45	8.34	8.37	8.4	8.4	8.48	8.36	8.32	8.3
6	Total Hardness (as CaCO3) mg/l	200	600	220	192	232	232	180	208	236	232	260	276	240	240	248	220
7	Calcium (as Ca mg/l	75	200	44	38	46	46	36	42	47	46	52	55	48	48	50	44
8	Magnessium (as Mg) mg/l	30	100	27	24	28	28	22	25	29	28	32	34	29	29	30	27
9	Chlorides (as CI) mg/I	250	1000	100	120	112	112	80	120	124	120	104	112	200	160	80	60
10	Sulphates (as SO4) mg/l	200	400	36	32	38	38	30	34	38	38	42	45	39	39	40	36
11	Nitrates (as NO3) mg/l	45	No Relaxation	8.5	3.3	29	29	34.2	32.5	70	6.7	35.9	31	42.5	3.3	43.9	13.1
12	Fluorides (as F) mg/l	1	1.5	0.86	0.89	1.26	1.26	0.88	1.38	2.41	1.14	0.63	0.99	2.39	1.12	1.1	0.6
13	Alkalinity (as CaCO3) mg/l	200	600	200	192	232	232	180	200	200	208	176	200	200	300	200	140
>>	Water level in mtr. from ground				·			·		·				·			<u></u>
	level																

Aug' 2015

Aug	2013																
S.N.	Ref.No.		):2012 (S.R) Permissible	Ground Water Quality Report of Sugala Mines (Aug-2015)													
	Source			W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	no-1	
	Village			SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	SUGALA	
	Taluka			KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	KODINAR	
	District			GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	IR-SOMNATI	GIR-SOMNATH	GIR-SOMNATH	GIR-SOMNATH	
1	Color Hazen Units	5	25	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	C.L.	
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	
3	Turbidity NTU	5	10	1.79	1.24	2.33	1.81	0.8	0.78	0.72	0.5	0.58	0.65	0.7	1.16	1.4	
4	Dissolved Solids mg/I	500	2000	492	434	466	428	550	548	444	476	526	516	464	622	304	
5	pH	6.5 to 8.5	No Relaxation	7.68	7.96	8.35	7.07	7.92	7.86	8.03	8.04	8.01	8.14	8.26	8.16	8.43	
6	Total Hardness (as CaCO3) mg/l	200	600	300	240	100	220	292	248	200	248	244	208	236	248	148	
7	Calcium (as Ca mg/l	75	200	60	48	21	44	59	50	40	50	49	42	47	50	30	
8	Magnessium (as Mg) mg/l	30	100	36	29	12	27	35	30	24	30	30	25	29	30	18	
9	Chlorides (as CI) mg/I	250	1000	72	60	80	72	96	100	88	80	106	120	84	112	60	
10	Sulphates (as SO4) mg/l	200	400	49	39	18	36	47	40	32	41	40	34	38	40	25	
11	Nitrates (as NO3) mg/l	45	No Relaxation	14.5	20.7	4.7	11.2	44.5	43.3	5.2	21.3	31.8	24.8	42.1	62.1	18.7	
12	Fluorides (as F) mg/l	1	1.5	0.87	1.17	1.04	0.79	1.15	1.89	1.46	0.47	1.06	1.4	1.42	1.06	0.42	
13	Alkalinity (as CaCO3) mg/l	200	600	300	260	96	252	236	292	252	272	272	256	200	328	124	
>>	Water level in mtr. from ground			•						•							
	level																

#### Ambient Air Quality Monitoring Results (April 2015 - September 2015)

													Am	bient Air (	Quality Mo	nitoring R	esults													
Month		Working Place				Sugala Village				Jagatiya Village				Chhachhar Village					Nagadala Village					Kansariya Village						
	PM2.5	PM10	SO2	NOx	СО	PM2.5	PM10	SO2	NOx	co	PM2.5	PM10	SO2	NOx	co	PM2.5	PM10	SO2	NOx	CO	PM2.5	PM10	SO2	NOx	co	PM 2.5	PM 10	SO2	NOx	CO
Unit >	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	$(\mu g/m3)$	(µg/m3)	(mg/m3)	(µg/m3)	(µg/m3)	$(\mu g/m3)$	$(\mu g/m3)$	(mg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(mg/m3)
April 2015	38.00	55.00	10.90	14.80	B.D.L	35.00	48.00	11.80	14.20	B.D.L	30.00	40.00	11.50	15.50	B.D.L	28.00	44.00	11.10	15.40	B.D.L	25.00	40.00	12.20	15.80	B.D.L	32.00	48.00	12.70	14.90	B.D.L
	38.00	52.00	11.30	15.30	B.D.L	34.00	37.00	11.90	15.80	B.D.L	28.00	34.00	12.50	14.60	B.D.L	28.00	45.00	11.40	13.90	B.D.L	32.00	51.00	11.80	14.60	B.D.L	23.00	40.00	12.20	14.10	B.D.L
May 2015	36.00	62.00	12.60	15.80	B.D.L	31.00	50.00	11.10	15.10	B.D.L	32.00	48.00	12.40	14.70	B.D.L	25.00	38.00	12.60	15.70	B.D.L	27.00	42.00	11.80	14.90	B.D.L	29.00	46.00	12.10	15.30	B.D.L
	34.00	58.00	11.50	16.30	B.D.L	33.00	48.00	12.60	15.90	B.D.L	30.00	45.00	12.10	15.70	B.D.L	27.00	42.00	11.40	14.50	B.D.L	24.00	40.00	12.60	15.30	B.D.L	28.00	49.00	12.20	15.10	B.D.L
June 2015	38.00	61.00	12.10	14.70	B.D.L	33.00	56.00	11.70	15.60	B.D.L	30.00	45.00	11.20	15.50	B.D.L	28.00	36.00	11.30	14.70	B.D.L	30.00	44.00	12.90	15.30	B.D.L	32.00	49.00	13.50	15.80	B.D.L
	31.00	63.00	12.50	15.80	B.D.L	28.00	45.00	11.70	15.50	B.D.L	25.00	40.00	11.20	14.90	B.D.L	29.00	47.00	12.50	13.90	B.D.L	26.00	42.00	12.30	15.80	B.D.L	24.00	45.00	11.00	14.50	B.D.L
July 2015	35.00	64.00	11.80	15.20	B.D.L	31.00	55.00	12.30	16.70	B.D.L	27.00	51.00	11.40	15.80	B.D.L	25.00	37.00	10.70	15.20	B.D.L	28.00	42.00	11.50	16.70	B.D.L	30.00	47.00	11.90	16.20	B.D.L
	37.00	64.00	12.40	14.60	B.D.L	33.00	60.00	11.70	15.80	B.D.L	29.00	54.00	11.20	15.50	B.D.L	27.00	43.00	11.30	14.60	B.D.L	30.00	47.00	12.60	15.70	B.D.L	33.00	56.00	10.60	15.90	B.D.L
Aug. 2015	32.00	59.00	12.70	14.70	B.D.L	29.00	53.00	11.50	15.20	B.D.L	31.00	62.00	12.10	13.80	B.D.L	27.00	41.00	11.40	14.70	B.D.L	24.00	47.00	12.10	14.30	B.D.L	32.00	50.00	11.70	15.20	B.D.L
	33.00	61.00	11.70	15.80	B.D.L	37.00	69.00	12.60	15.20	B.D.L	31.00	58.00	11.90	14.60	B.D.L	29.00	48.00	12.70	16.90	B.D.L	32.00	56.00	11.30	15.20	B.D.L	35.00	61.00	11.90	15.80	B.D.L
Sept. 2015	30.00	62.00	11.60	15.40	B.D.L	27.00	56.00	10.90	14.40	B.D.L	33.00	65.00	11.80	15.90	B.D.L	29.00	46.00	12.60	15.80	B.D.L	27.00	52.00	11.90	14.70	B.D.L	25.00	48.00	12.20	15.20	B.D.L
,	31.00	59.00	12.60	15.30	B.D.L	35.00	67.00	10.80	14.60	B.D.L	28.00	51.00	10.50	14.90	B.D.L	27.00	52.00	11.70	15.90	B.D.L	30.00	58.00	12.30	14.70	B.D.L	33.00	64.00	12.80	14.30	B.D.L
Minimum	30.00	52.00	10.90	14.60	0.00	27.00	37.00	10.80	14.20	0.00	25.00	34.00	10.50	13.80	0.00	25.00	36.00	10.70	13.90	0.00	24.00	40.00	11.30	14.30	0.00	23.00	40.00	10.60	14.10	0.00
Maximum	38.00	64.00	12.70	16.30	0.00	37.00	69.00	12.60	16.70	0.00	33.00	65.00	12.50	15.90	0.00	29.00	52.00	12.70	16.90	0.00	32.00	58.00	12.90	16.70	0.00	35.00	64.00	13.50	16.20	0.00
Average	34.42	60.00	11.98	15.31	#DIV/0!	32.17	53.67	11.72	15.33	#DIV/0!	29.50	49.42	11.65	15.12	#DIV/0!	27.42	43.25	11.73	15.10	#DIV/0!	27.92	46.75	12.11	15.25	#DIV/0!	29.67	50.25	12.07		#DIV/0!
Std. Deviation	3.00	3.64	0.59	0.54	#DIV/0!	3.04	9.03	0.59	0.71	#DIV/0!	2.24	9.33	0.59	0.63	#DIV/0!	1.38	4.77	0.69	0.89	#DIV/0!	2.87	6.21	0.47	0.67	#DIV/0!	3.92	6.82	0.77	0.66	#DIV/0!



## EXPENDITURE INCURRED ON THE ENVIRONMENTAL MANAGEMENT PLANS

#### (A) Capital Investment for Environmental Monitoring:

(1) Monitoring Equipments : 37.08 Lakh

(2) Environmental Laboratory : 10.00 Lakh

(3) Others (Monitoring Van & DG sets) : 10.00 Lakh

Total: Rs. 57.08 Lakh

#### (B) Recurring expenditure for the period of April'15 to September'15:

(1) Green belt development & dust suppression : 8.03 Lakh

(2) Manpower Cost\* : 11.42 Lakh

(3) House Keeping : 0.72 Lakh

(4) Other Env. Protection (Environmental Monitoring) : 1.26 Lakh

(5) Environmental Awareness\* : 0.50 Lakh

Total: Rs. 21.93 Lakh

<sup>\*</sup>Expenditures are common for all the plants & mines.

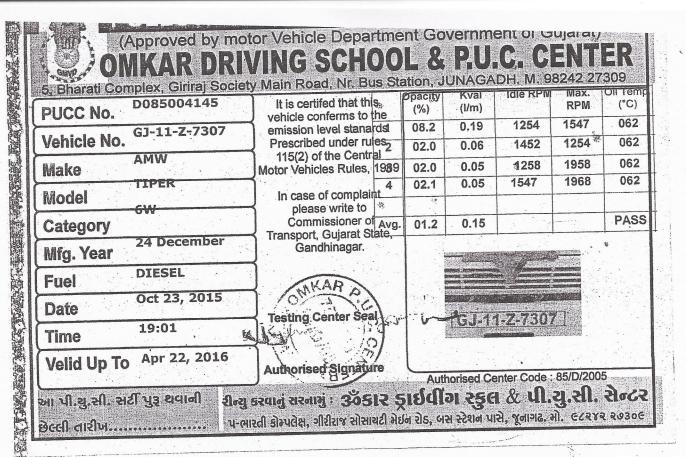


## EXPENDITURE INCURRED ON THE ENVIRONMENTAL MANAGEMENT PLANS

## (C) Community Development expenditure by Ambuja: Rs. 07.99 Crore Cement Foundation\*\*

\*\* Community development expenditure is common for all plant & mines at Ambujanagar for the period of April'2015 to September'2015. Programme Wise Expenditure Details is as below:

	Ambuj	a Cement Found	ation - Ambuja	nagar			
	Details for programme	wise expenditur	e from April 20	15 to Septemb	per 2015		
							(Rs. In lakhs)
Sr.No	Programme	Funds from ACF Resources	*Funds received through Government	from other Donors / Donor Agencies	***People's Contribution	****Direct Funding to Communities	Total Exp.
	GUJARAT - Kodinar						
1	Water Resource Mangement & Drinking Water Projects						
	a. Water Resource Devlopment	23.60	-	-	-	-	23.60
	B .Drinking Water Programme	17.82	28.60	11.53	76.24	54.98	189.17
	c. Salinity Prevention (KVY III)	8.33	-	49.50	54.42	75.01	187.26
2	Agriculture Development( Farm Forestry & Afforesation)	23.09	-	8.72	39.34	105.71	176.86
3	Better Cotton Initiative (BCI)	3.13	-	9.14	-	-	12.27
4	Krishi Vigyan Kendra (KVK)	0.75	49.05	-	-	-	49.80
5	Health & Sanitation Programme	5.10	-	-	6.82	-	11.92
6	Skill and Enterprunership Development Programme	21.86	11.97	0.24	4.84	-	38.91
7	Village Knowledge Centre & Anganwadi exp	0.68	-	-	-	-	0.68
8	Women / Youth Development & Others	1.72	-	-	-	-	1.72
9	Integrated Community Development Programme	68.68	-	-	-	-	68.68
10	Co-ordination & Administration Expenses	37.57	-	-	-	-	37.57
11	Capital Expenditure	0.65	-	-	-	-	0.65
	TOTAL	212.98	89.62	79.13	181.66	235.70	799.09



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