SANDSTONE MINE

LOCATION: - VILLAGE(S) – DHANESHWAR & SUTARA, TEHSIL & DISTRICT – BUNDI (RAJ.).

Production: - Existing: - 80,000 TPA; Proposed: -1,70,000 TPA; Total After Expansion: - 2,50,000 TPA

Original Lease Area: - 618.34 Ha.; Surrendered Area: - 127.7891 Ha. ; Retained Area: - 490.5509 Ha.

ML No.:- 47/ 94; Lease Validity: - 14.09.1994 to 14.09.2024 (30 Years)

Study Period: - October, November & December' 2015

Project Cost: - Existing: - Rs. 3.50 Crore; Proposed: - Rs. 4.50 Crore; Total: - Rs. 8.0 Crore

FOR

ENVIRONMENTAL CLEARANCE

("A" under category 1(a) of EIA Notification dated 14.09.2006 and its subsequent amendments)

Applicant: - Kanhaiya Lal Rameshwar Das

Authorized Signatory: - S. S. Arora (Power of Attorney)

 # 7-A, Vallabh Nagar, Kota (Raj.).

Email: - arorasunder@yahoo.com

Phone No.: - 09828105873, 0744-2501311; Fax No.: - 0744-2501711

ENVIRONMENTAL CONSULTANT

ENKAY ENVIRO SERVICES PVT. LTD., JAIPUR

Accredited EIA Consultant Organization by NABET, QCI, New Delhi at S. No. 42 in MoEF&CC

List of Accredited EIA Consultant Organizations (as on April 10, 2017).

Validity: - 13.12.2014 to 12.12.2017.

Corporate Office: - # 92 Heera Nagar - A, Near Shalimar Bagh, Ajmer Road, Jaipur (Raj.). - 302 021

Phone: - 0141-2354997, 2353996

Email: - info@enkayenviro.com, Website: - www.enkayenviro.com

BASIC INFORMATION

I	PROJECT DETAILS	
1.	Name of the Project	Dhaneshwar Sandstone Mine
2.	Name of the Company, Address, Telephone No. & E-Mail, Head of Organization	M/s Kanhaiya Lal Rameshwar Das Sandstone Mine. Sh. S. S. Arora (POA) # 7- A, Vallabh Nagar, Kota – 324 007, Rajasthan. Telephone No.:- 09828105873; 0744 - 2501311 Email: - arorasunder@yahoo.com Head of Organization:- Sh. Kishan Ghatiwala
3.	If a joint venture, the name & address of the JV partners including their share.	Not Applicable
4.	Latitude and Longitude of the project	

Pillars	Latitude (N)	Longitude (E)
A	25°04'41.8"	75°33'12.8"
A2	25°04'33.4"	75°34'08.3"
A3	25°04'46.1"	75°34'14.1"
A4	25°04'33.8"	75°34'45.3"
A5	**25°03'45.9"**	**75°35'53.7"**
N1	**25°03'56.5"**	**75°35'06.1"**
O2	**25°03'56.5"**	**75°34'56.0"**
P1	**25°03'54.2"**	**75°34'44.6"**
Q1	**25°03'56.8"**	**75°34'33.5"**
A38	25°04'01.6"	75°34'27.6"
A39	25°03'57.7"	75°33'56.3"
A40	25°04'06.1"	75°33'34.7"
A41	25°04'10.4"	75°32'45.0"
A42	25°04'26.4"	75°32'21.5"

5.	Whether the project is in the Critically Polluted Area	No.
6.	Cost of the project	Existing: - Rs. 3.50 Crore; Proposed: - Rs. 4.50 Crore; Total: - Rs. 8.0 Crore.
7.	Whether new or expansion project. If expansion.	Expansion
(i)	From ....MT to.....MT	80,000 TPA to 2,50,000 TPA
(ii)	What is the % of expansion	32%
8.	If for expansion, whether the application is under 7 (ii) of the EIA Notification, 2006.	No
9.	No. and date of the TOR/ and revised TOR, if any, letter issued by the MoEF (If this is a case for EC).	Letter No. J-11015/ 154/ 2015 – IA.II (M) dated 11.06.2016.
10.	No. and date of the EC and the revised EC letter issued by	Not Applicable.

	the MoEF (If this is a case for reconsideration. If so, what specific reconsideration(s) being sought by the proponent)	
11.	If the project was considered in EAC, Please give dates of the meeting(s).	22.07.2016.
12.	Type of Mine: (Open cast/ Underground/ Mixed)	Open Cast
13.	Capacity of the mine applied for	Sandstone – 2,50,000 TPA
14.	ML Area	Original Lease Area: - 618.34 ha. Reduced/ Surrendered Area: - 127.7891 Ha Retained Area: - **490.5509 Ha.**
(i)	As per block allotment	Original Lease Area: - 618.34 ha. Reduced/ Surrendered Area: - 127.7891Ha. Retained Area: - **490.5509 Ha.**
(ii)	As per approved Mine Plan	Original Lease Area: - 618.34 ha.
15.	Date of approval of Mine Plan, Mine Closure Plan, status & date	Modified Mining Plan along with Progressive Mine Closure Plan has been approved by SME, Kota vide letter no. 4256 dated 14.10.2015.
16.	Date of Board's approval	Not Applicable
17.	Date of ground water clearance and surface water approval.	Not Applicable
18.	Existing Ground water level in (M).	387 MSL
19.	Date of Mine Closure approval.	--
20.	Any River/ Nallah flowing near or adjacent to the proposed mine. If Yes, please give details.	No

Details of Mine Lease*

Date of entering into original lease deed: - **14.09.52 to 13.09.59.**	Date of Ist lease renewal: - **14.09.59 to 13.09.63.**	Date of 2nd lease renewal:- **05.03.2004.**	Date of 3rd lease renewal:- **4th renewal upto 13.09.94** **5th was upto 13.09.14 and extended upto 13.09.24**
Date of expiry original lease deed**:- 13.09.2024**	Deemed renewal:- **Not Applicable**	Deemed renewal.	Whether renewal or deemed renewal:- **Not Applicable**
	Date of expiry of 1st lease renewal:- **Not Applicable**	Date of expiry of 2nd lease renewal.	Date of expiry of 3rd lease renewal/ deemed renewal:- **Not Applicable**

II	**TECHNICAL DETAILS**	
21.	**Geological Reserves:-**	
(i)	Total Geological Reserve	1,76,90,361.25 Tonnes
(ii)	Mineable Reserve	1,07,02,391.25 Tonnes

(iii)	Extractable Reserve	1,07,02,391.25 Tonnes
(iv)	Per cent (%) of extraction	100
(v)	Range of ground water level	75-80m below the surface.
(vi)	Total estimated water requirement	30.0 KLD
(vii)	Details of intersecting ground water level	No (Mining will be done upto 25m above the ground water table).
22.	**Details of Deposits**	
(i)	Depth of ore body	--
(ii)	Grade of ore	Not Applicable
(iii)	Stripping ratio	1.03:1
23.	**Method of Mining**	Open Cast Semi-Mechanized Method
24.	**Life of Mine**	42.80 Years
25.	**Whether ambient air quality seasonal data has been monitored. If so, from which season to which season and whether the results are within the prescribed limits.**	October, November and December' 2015 (Post – Monsoon).
26.	**Whether the monitoring report if earlier EC from MoEF, Regional Office has been obtained, in case the proposal is for expansion.**	Not Applicable, as the project is first time appraised for Environmental Clearance.
27.	**Details of O.B.**	About 6.14m^3 of waste will be generated during the plan period. This waste will be partly backfilled and reclaimed & rehabilitated by plantation and partly will be dumped within the lease area and stabilized by plantation with native species.
(i)	External OB dumps	No.
(ii)	No. of OB dumps	--
(iii)	Area of each dump	--
(iv)	Height of each dump	--
(v)	Quantity (MCM) of OB in each dump	--
(vi)	Year of backfilling	--
(vii)	No. of OB dumps reclaimed	--
(viii)	If garland drains and settlement facility for runoff created	--
(ix)	Whether runoff water being utilized	--
28.	**Details of Internal dumps**	As under:-
(i)	Number of Internal dumps	Nine
(ii)	Area of each dump	36.3 Ha.
(iii)	Height of each dump	10m height in two terraces of 5.0m each.
(iv)	Quantity of waste filled (MCM)	--

29.	**Utilization potential of wastes**	As under:-
(i)	Within the mines	Yes, The generated waste will be partly backfilled and reclaimed & rehabilitated by plantation and partly will be dumped within the lease area and stabilized by plantation with native species.
(ii)	Outside Mines	Nil
(iii)	Efforts made by the Proponent	The generated waste will be used in backfilling and reclaimed and rehabilitated by plantation.
30.	**Details of final mine voids**	
(i)	Area	219.196 Hectare
(ii)	Depth	60m
31.	**Details of quarry**	
(i)	Total quarry area	219.196 Hectare
(ii)	Backfilled quarry area of…..ha. shall be reclaimed with plantation	83.296 ha.
(iii)	A void of…..ha. at a depth of…..m which is proposed to be converted into a water body	135.90 ha. upto the depth of 60m
(iv)	Green belt created in ha.	194.036 Ha. (1,94,036 plants)
32.	**Details of land usage**	
(i)	Pre-Mining	119.76 ha.
(ii)	Post – Mining	255.496 ha.
(iii)	Core area	--
33.	**Details of Forest Issues**	As under:-
(i)	Total forest area involved (in ha.) for mining lease	104.34 Ha.
(ii)	Total broken forest area	46.87 ha.
(iii)	Status of Forest Clearance and extend of forest land diverted in ha.	Diversion of 104.34 ha. of forest land has been obtained from the Ministry of Environment & Forests, New Delhi vide letter no. 8-8/ 78 – FC dated 24.02.2000.
(iv)	Is there any National Park, Eco-sensitive zones, within 10km radius? If so, give the details.	Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0Km towards South from the Mine site.
(v)	Extent of forest land in the project (including safety zone and all types of forest land)	104.34 Ha.
(vi)	Total forest land for which stage – 1 FC is available (give area in ha.) provide breakup of this area in following forma:-	104.34 Ha.

		Area (In Ha.)	**Stage – 1 FC issued vide letter no. & date**	**Validity period of Earlier FC granted**	
		104.34	24.02.2000	Valid for 20 years from 19.05.1999 to 18.05.2019.	
(viii)	Balance forest land for which Stage – 1 FC is not available (Give area in Ha.)			Not Applicable	
(viii)	Details of wildlife issues involved, if any. If so, whether ML management plan has been prepared; pl indicates the status.			Application for online submission of Part- I has been uploaded for necessary clearance from NBWL on dated 30.03.2017. Receipt is enclosed as **Annexure – VI.**	
(ix)	Whether schedule – I species, if Yes conservation plans is approved by CWLW.			Three Schedules – I and One Schedule - II species fauna i.e. Indian Peafowl (I), Gray Mongoose (II), Leopard (I) and Sloth Bear (I) have been reported in the buffer zone. Conservation Plan for Indian Peafowl, Gray Mongoose, Leopard and Sloth Bear has been prepared by Enkay Enviro Services Pvt. Ltd., Jaipur and the same has been authenticated from the Office of Deputy Conservator of Forests (Wildlife), Mukundra National Park, Kota vide letter no. F ( ) Tech/ DFO/ M.N.P. / 2016 – 17/ 4782 dated 03.05.2017.	
34.	**Costs of the Project**				
(i)	Total Capital cost			Rs. 8.00 Crore (Approx.)	
(ii)	Cost of production			Sandstone :- Rs.14/- per Sq. ft	
(iii)	Sale Price			Sandstone :- Rs.15/- per Sq. ft	
(iv)	CSR cost			Capital Cost:- Rs. 15.00 Lacs; Recurring Cost: - Rs. 1.638 Lacs.	
(v)	R & R Cost			Not Applicable	
(vi)	No. of PAFs			--	
(vii)	Cost for implementing EMP			Rs. 11,00,000/-	
35.	**Details of Villages/ habitation in mine lease area**			Not Applicable	
(i)	Inside the lease area			--	
(ii)	Surrender by lease			--	
(iii)	Extent of cropland acquired/ being acquired in ha.			--	
36.	**Details of transportation of Mineral**				
(i)	In Pit			By tippers/ tractor trolley	
(ii)	Surface to siding			Not Applicable	
(iii)	Siding to loading			Not Applicable	

(iv)	Quantity being transported by Road/ Rail/ Conveyer/ Ropeway	--
(v)	Proposed change in transportation means if any, give details.	No
37.	**Details of Reclamation**	
a.	Afforestation shall be done covering an area of…..ha. at the end of mining. This will include:-	194.036 ha
(i)	Reclaimed external OB dump (in ha.)	Nil
(ii)	Internal Dump (In ha.)	36.3
(iii)	Green Belt (In ha.)	1,94,036 plants
(iv)	Density of tree plantation (in no. of plants)	1,000 tree/ hectare
(v)	Void (In ha.) at a depth (in m) which is proposed to be converted into water body	135.90 ha. upto the depth of 60m
(vi)	Other in ha. (such as excavation area ML boundary, along water body infrastructure, embankment area and in township located outside the lease etc.)	--
(vii)	Agriculture and horticulture	Nil
(viii)	Fisheries	Nil
(ix)	ECO Tourist/ recreation spot	Nil
III	**LEGAL ISSUES**	
38	Any court case pending. If so, please provide a list with details as annexure.	No
(i)	Environment (Protection) Act	--
(ii)	Air (P & P) Act	--
(iii)	Water (P & CP) Act	--
(iv)	MMRD Act	--
(v)	The Factories Act	--
(vi)	Other land R & R related cases.	--
39	Any violation cases pending. If so, please provide a list with details as annexure.	No
40	Give details of actual production vis-à-vis sanctioned capacity since the inception of mine in following format or since 1993-94 as applicable:-	The actual production authenticated by Mining Engineer, Bundi is as given below reproduced as under:-

S. No.	Year	Production (TPA)
1	1993 – 94	1,34,639
2	1994 – 95	1,31,562
3	1995 – 96	1,39,100
4	1996 – 97	1,09,592
5	1997 – 98	1,56,344
6	1998 – 99	1,44,459
7	1999 – 2000	1,54,947
8	2000 – 2001	72,120
9	2001 – 2002	1,12,615
10	2002 – 03	86,659
11	2003 – 04	75,129
12	2004 – 05	61,005
13	2005 – 06	49,647
14	2006 – 07	55,505
15	2007 – 08	54,774
16	2008 – 09	65,413
17	2009 – 10	65,667
18	2010 – 11	58,024
19	2011 – 12	67,796
20	2012 -13	77,530
21	2013 – 14	79,364
22	2014 – 15	74,170
23	2015 - 16	53,236

IV.	**PUBLIC HEARING ISSUES**	
41	Date and Place of Public hearing	Date:- 11.05.2016 Place:- Atal Seva Kendra Headquarter, Gram Panchayat Dhaneshwar, Panchayat Samiti Talera, District – Bundi – 500m, NE.
42	The designation of officer presided our the PH.	ADM – Sh. Ram Jeevan Meena and in the presence of Regional Officer, Kota - Sh. Amit Sharma.
43	Issues raised during Public Hearing and assurance given along with the financial provisions and action plan, if any, by the project proponent. (Please attach as an annexure in a tabular form).	Issues raised during the Public Hearing given in **Section – VI.**
44	Number of representation received in writing form the district and outside of district, please give details	One
V	**Consultant**	

45	Name of the EIA consultant who prepared the EIA/ EMP report.	Enkay Enviro Services Pvt. Ltd.
46	Whether the consultant has been accredited by the QCI and NABET as per the MoEF OM dated 2nd December, 2009.	Yes. Accredited EIA Consultant Organization by NABET, QCI, New Delhi at S. No. 42 in MoEF&CC List of Accredited EIA Consultant Organizations (As on April 10, 2017).
47	Name of specialists/ consultants involved in making EIA report and in collecting data.	Given in Section – X.
VI	**OTHER INFORMATION**	
48	One page summary for TOR and EC separately as applicable	Enclosed as **Appendix – I.**
49	Brief Background of the Project as per table	M/s Kanhaiya Lal Rameshwar Das Sh. S. S. Arora (POA) Sandstone Mine # 7-A, Vallabh Nagar, Kota. Telephone No.:- 09828105873 & 0744 - 2501311 Email: - arorasunder@yahoo.com Head of Organization: - M/s Kanhaiya Lal Rameshwar Das.
1.	Details of PP and Group companies	
(a)	Financial position	--
(b)	Group companies	--
(c)	Legal issues	--
(d)	Past and current litigation	--
2.	Social, economic and environment aspect of the project in brief.	Project will provide employment to about 300 persons (after expansion). The Project Proponent will spent Rs. 15.00 Lacs as capital cost and 1.638 Lacs as recurring cost for CSR activities. About Rs. 11.00 Lacs per annum will be spent towards Environmental Management Plan. Thus, the proposed expansion is not likely to affect the environment adversely and provide employment opportunity to the local peoples.

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SUMMARY – FOR EC

Sandstone Mine of M/s Kanhaiya Lal Rameshwar Das having production capacity from 80,000 TPA to 2,50,000 TPA is situated at Village(s) – Dhaneshwar & Sutara, Tehsil – Bundi, District – Bundi (Raj.) for an area of 490.5509 ha. (After surrendered).

The proposal is of M/s Kanhaiyalal Rameshwar Das for Sandstone Mine with production capacity of 2,50,000 TPA in the mine lease area of 490.5509 ha. The mine is located at Village – Dhaneshwar & Sutara, Tehsil & District – Bundi, Rajasthan for an area of 490.5509 ha. The geographical co-ordinates of the site are Latitude: 25°04'19.87''N to 25°02'53.11''N and Longitude: 75°32'28.41''E to 75°35'59.18''E and is covered by Survey of India Toposheet No. 45 O/12.

The mining lease area 490.5509 ha. consists of 161.2109 ha of Govt. waste land, 150 ha. of Private Khatedari land, 104.34 ha. of Diversified Forest land and 75.0 ha. of Grazing land. The mining is being carried out by opencast semi-mechanized method as per the approved Mining Plan. The estimated project cost will be Rs. 8.0 Crore after expansion. It has been proposed to produce approximately 2,50,000 TPA of Sandstone. Total mineable reserve available is 10.70 MT. The expected life of mine will be 42.80 years. Total waste and overburden generated during the plan period will be 6.14 lac m^3. The mineral will be transported through trucks/ tippers. The daily water demand will be 30.0 KLD which will be met from nearby village of tanker supply and existing water reservoir pit.

A Wildlife Sanctuary, named as Jawahar Sagar/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0 Km towards south from the Mine site. The study period is Post-Monsoon Season (October to December' 2015). Public Hearing has been successfully concluded on dated 11.05.2016. The total investment for the proposed expansion will be Rs. 8.0 Crore (Approx.).

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SANDSTONE MINE (MINOR MINERAL)

Village(s) - Dhaneshwar & Sutara, Tehsil & District - Bundi (Rajasthan)

****

FORM - 1

APPENDIX I

(See paragraph – 6)

FORM - 1

I Basic Information			
S. No.	**Item**	:	**Details**
1.	Name of the Project	:	Sand Stone Mine (ML No. – 47/ 94)
2.	S. No. in the schedule	:	1(a)
3.	Proposed capacity/ area/ length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled.	:	Proposed Capacity: 2,50,000 TPA Reduced/ Surrendered Area (Non-Working Zone): 127.7891 Ha. Retained Area (Present Lease Area): 490.5509 Ha. Waste Generation (Plan Period): 6.14 Lac Cu.m.
4.	New/ Expansion/ Modernization	:	Expansion
5.	Existing Capacity/ Area etc.	:	Existing Capacity: 80,000 TPA Original Lease Area: 618.34 Ha. Reduced/ Surrendered Area (Non-Working Zone): 127.7891 Ha. Retained Area (Present Lease Area): 490.5509 Ha. Consent to Operate has been obtained from RSPCB, Jaipur vide letter no. F (Mines)/ Bundi (Bundi)/ 291/ 2009 – 2010/ 363 – 369 dated 18.04.2016 which is valid up to 31.03.2019 for an area of 618.34 ha. Enclosed as **Annexure – I.** *Lease area reduced on account of leaving 1.0Km distance from the periphery of Wildlife Sanctuary. **The same will be revised after issuance of Environmental Clearance.
6.	Category of project i.e. 'A' or 'B'	:	A
7.	Does it attract the general condition? If yes, please specify.	:	Yes (General Condition No. (i)). Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0Km towards South from the Mine site. In this reference a letter from DFO to Additional Principal Chief Conservator of Forest (APCCF), Jaipur has been obtained vide letter no. F ( ) Survey/ DFO/ Mu. National Park/ 2016 – 17/ 1071 dated 16.02.2017. Enclosed as **Annexure – II (A).**

			A letter from APPCF, Jaipur address to The Director, MoEF&CC, New Delhi has been obtained vide letter no. F 4(T) Miscellaneous/ PCCF/ 2016/ 3457 dated 10.03.2017 (Enclosed as **Annexure – II (B)**). It is clearly states that the distance between the lease boundary and Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve has been clearly marked on toposheet at a distance of 1.0Km. Enclosed as **Annexure – II (C)**).
8.	Does it attract the specific condition? If Yes, please specify.	:	No
9.	Location	:	The lease area of Sandstone Mine is situated near Village(s) Dhaneshwar and Sutara, Tehsil and District – Bundi (Rajasthan). The lease area falls within the Geological Survey of India toposheet no. 45 O/12. The geographical location of the lease pillars is as under:-

Pillars	Latitude (N)	Longitude (E)
A	25°04'41.8"	75°33'12.8"
A2	25°04'33.4"	75°34'08.3"
A3	25°04'46.1"	75°34'14.1"
A4	25°04'33.8"	75°34'45.3"
A5	**25°03'45.9"**	**75°35'53.7"**
N1	**25°03'56.5"**	**75°35'06.1"**
O2	**25°03'56.5"**	**75°34'56.0"**
P1	**25°03'54.2"**	**75°34'44.6"**
Q1	**25°03'56.8"**	**75°34'33.5"**
A38	25°04'01.6"	75°34'27.6"
A39	25°03'57.7"	75°33'56.3"
A40	25°04'06.1"	75°33'34.7"
A41	25°04'10.4"	75°32'45.0"
A42	25°04'26.4"	75°32'21.5"

	Plot/ Survey/ Khasra no.	:	Khasra Map is enclosed as **Annexure – III.**
	Village	:	Dhaneshwar & Sutara
	Tehsil	:	Bundi
	District	:	Bundi
	State	:	Rajasthan
10.	Nearest Railway Station/ Airport along with distance in Kms.	:	

Particulars	Name	Distance, Direction (From Lease Boundary)
Railway Station	Kota	28.674 Km, ENE

			Airport | Kota | 28.693 Km, ENE ***Source: - All distances are taken with respect to Google Earth.***
11.	Nearest Town, City, District Headquarters along with distance in kms.	:	**Particulars** | **Name** | **Distance, Direction (From Lease Boundary)** Nearest Town | Dabi | 3.849 Km, NW Nearest City | Dabi | 3.849 Km, WNW Nearest District Headquarter | Bundi | 34.890 Km, NNE ***Source: - All distances are taken with respect to Google Earth.***
12.	Village Panchayat, Zilla Parishad, Municipal Corporation, Local body (Complete postal address with telephone no. to be given).	:	**Particulars** | **Name** Village Panchayat | Dhaneshwar and Sutara Zila Parishad | Bundi Municipal Corporation | Bundi
13.	Name of the Applicant	:	Kanhaiya Lal Rameshwar Das
14.	Registered address	:	# 7- A, Vallabh Nagar, Kota - 324007, Rajasthan.
15.	Address for correspondence		
	Name	:	S. S. Arora
	Designation (Owner/ Partner/ CEO)	:	Power of Attorney Copy of Power of Attorney is enclosed as **Annexure – IV.**
	Address	:	1. Kanhaiya Lal Rameshwar Das # 7- A, Vallabh Nagar, Kota - 324007, Rajasthan. Phone No.: – 91-7472501311, 9828105873. 2. Enkay Enviro Services Private Limited. # 92 Heera Nagar - A, Near Shalimar Bagh, Ajmer Road, Jaipur (Raj.). - 302021.
	Pin Code	:	324007, 302021.
	E-mail	:	arorasunder@yahoo.com; info@enkayenviro.com
	Telephone no.	:	0744-2501311; 0141-2354997, 2353996
	Fax No.	:	0744-2501711
16.	Details of alternative sites examined, if any. Location of these sites should be shown on a Toposheet.	:	No alternate site has been examined as it is an existing lease and mine is operative since 1952. The lease area falls on the Survey of India Toposheet No. 45O/ 12.
17.	Interlinked projects	:	No
18.	Whether separate application of interlinked project has been submitted?	:	No
19.	If yes, date of submission	:	No

20.	If no, reason	:	No.
21.	Whether the proposal involves approval/ Clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, (1980)? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z. Notification, 1991?	:	The Mining Lease area was earlier adjoining to both the sanctuaries have their common boundaries, which after the instructions of Hon'ble EAC has been delineated and realigned by reducing the lease area from 618.34 ha. to 490.5509 ha. by leaving 1.0 Km distance from the periphery of both the Sanctuaries. Yes, Forest diversion (Both Stage I & II) for the 104.34 ha. land has been obtained from MoEF&CC, New Delhi which is valid up to 18.05.2019. Enclosed as **Annexure – V.** Yes, Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0 Km towards south from the Mine Site. Application for online submission of Part- I has been uploaded for necessary clearance from NBWL on dated 30.03.2017 for an area of 490.5509 ha. Copy of receipt is enclosed as **Annexure – VI.** CRZ Notification is Not Applicable.
22.	Whether there is any Government Order/ Policy relevant/ relating to the site.	:	As per Supreme Court of India, Writ Petition (Civil) No. 435 of 2012 with respect to Goa Foundation and Union of India & Others "***T.N. Godavarman Thirumulpad Vs. Union of India & Ors., this Court has taken a view that 1.0Km from the boundaries of National Parks and Sanctuaries would be a safety zone***". * ***This Court was of the opinion that grant of Temporary Working Permits should not result in any mining activities within the safety zones around a National Park or Wildlife Sanctuary and as an interim measure, one kilometer safety zone was to be maintained subject to the orders that may be made in I.A. No.1000 in Jamua Ramgarh Sanctuary***.
23.	Forest land involved (hectares).	:	Yes, Forest diversion for the 104.34 ha. land has already been obtained from MoEF vide letter no. 8-8/ 78 – FC dated 24.02.2000. Enclosed as **Annexure – V.**
24.	Whether there is any litigation pending against the project and/or land in which the project is proposed to be set up?	:	No litigation is pending against the lease area/ applicant of this lease area in any court of law to the best of our knowledge.

	(a) Name of the Court (b) Case No. (c) Orders/ directions of the court, if any and its relevance with the proposed project.		
25.	Expected cost of the project	:	Existing: - Rs. 3.50 Crore; Proposed: - Rs. 4.50 Crore; Total: - Rs. 8.0 Crore.

**Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.).*

II	**Activity**			
	1.	**Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**		
	S. No.	**Information/ Checklist confirmation.**	**Yes /No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.**
	1.1	Permanent or temporary change on land use, land cover or topography including increase in intensity of land use (with respect to local land use plan).	No Yes	**Land Use** The mine is operative since 1952. The lease area as per revenue records comprises of Govt. land (161.2109 ha.), Pvt. Khatedari land (150 ha.), Diversified Forest Land (104.34 ha.) and Grazing land (75.0 ha.). The impact on land use will not alter significantly as it is an operative mine. **Land Cover** The extent of existing broken up area will extend from 83.46 ha. to 85.86 ha. in next five years. The additional horizontal extend will be enabled with removal of top soil. In the conceptual phase the same will extend up to 219.196 ha. This extend will impact the physiographic permanently. **Topography** The highest and lowest elevation is 490 MSL and 460 MSL respectively. As it is an expansion project, the impact on the physical environment will be confined within the lease area. The increase in production will alter the topography interims of height. **Change in Water Bodies** No natural water bodies are existing within the lease area except

				for few rains fed channels, which disappeared after traversing a short distance. However, during the conceptual phase, partly excavated pit area will be used as a water reservoir i.e. 135.90 ha. The natural drainage of the lease area is towards south and will remain the same.
	1.2	Clearance of existing and, vegetation and buildings?	No Yes	**Land & Building** Since, it is an expansion of existing mine and the area of expansion is within the already sanctioned area, so there will be no clearance of existing buildings. **Vegetation** Some perennial shrubs and herbs are present within the lease area. During the expansion of pit from 83.46 to 85.86 ha., in next five years vegetation will be cleared. In the conceptual phase, the extent will increase and native and local species will be planted for sustainable development.
	1.3	Creation of new land uses?	No	There will be no new land use created as the proposed expansion is coming up within the already sanctioned lease area. The new land use pattern within lease area will be follows as per the different stages during the life of mine.

S. No.	Particulars	Present Land Use (ha.)	At the End of 5th Year (ha.)	At the End of Life of Mine (ha.)
1.	Pit area	83.46	85.86	83.296 ha. (Reclaimed & Rehabilitated by Plantation). 135.90 ha. Water Reservoir.
2.	Dump Area	36.3	36.3	36.3 (Rehabilitated by Plantation)
3.	Road	15.24	16.2	14.7 (Public Use)
4.	Infrastructure	7.60	8.0	8.50 (Public Use)
5.	Mineral Storage	3.28	4.50	7.50 (Plantation)
6.	Plantation	37.69	51.94	66.94
7.	Un-worked	306.9809	287.7509	137.4149
Total		**490.5509**	**490.5509**	**490.5509**
Above mentioned land use figures may change after sanction of partial surrendered lease area.				

	1.4	Pre-construction investigations e.g. bore holes, soil testing?	No	It is an existing mine and therefore; no boreholes are required for mineral exploration.
	1.5	Construction works?	No	It is an existing mine and there is an office and workers rest room

				already constructed in an area of 80.00 Sq. m. Hence, no other construction activity is required.
	1.6	Demolition works?	No	Not Applicable.
	1.7	Temporary sites used for construction works or housing of construction workers?	No	Not Applicable.
	1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations.	Yes	**Earthworks** The proposed expansion involves excavation of pit from 83.46 ha. to 219.196 ha. upto the conceptual phase and will attain a maximum depth of 60m (up to 490 MSL). This will add to the change in the localized physical environment. As, the proposed expansion involves the excavation of sandstone, which will contribute the removal of OB and soil to the tune of 4,12,800 cu.m and 15,500 cu.m in next five years. The generated OB and top soil will be used in backfilling and reclaimed & rehabilitated by plantation. The extent of impact will however; be confined within lease area only.
	1.9	Underground works including mining or tunneling?	No	There will be no underground mining activities. The mining will be done by open cast semi-mechanized method.
	1.10	Reclamation works?	Yes	At the end of life of mine, the total excavated area will be 219.196 ha.; out of which 83.296 ha. will be backfilled, reclaimed & rehabilitated by plantation and remaining 135.90 ha. will be used as a water reservoir. Waste material will be dumped at the designated place (36.3 ha.) which will be reclaimed by plantation. Eventually, the area will have enhanced physical environment aesthetics.
	1.11	Dredging?	No	Not Applicable
	1.12	Offshore structures?	No	Not Applicable
	1.13	Production and manufacturing processes?	Yes	Method: - Opencast Semi-Mechanized. The salient features of Mining Method are:- ➢ Topsoil: 0.5 – 3.0 m; murram and weathered sandstone: - 1.0 - 3.0 m; sandstone: 4.0m to 20.0 m.

<table>
<tr><td></td><td></td><td></td><td></td><td>➢ Bench Parameter: Height - 3.0 m and Width – 6.0 m
➢ Workings Level: 478 to 449 MSL (Bad Wala Pit) 491 to 482 MSL (Tamatar Wala Pit);
➢ The Ultimate Pit Limit: 430 MSL;
➢ Ultimate Pit Slope: 45° from vertical.
➢ Drilling and blasting will be done.
The impact on physical environment will be significant and confined within lease area. There will be change in land cover, topography & vegetal cover as depicted in point no. 1.2.</td></tr>
<tr><td></td><td>1.14</td><td>Facilities for storage of goods or materials?</td><td>Yes</td><td>The mineral storage yard (7.50 Ha.) will be used for the storage of mineral. Thus, there will be no impact on physical environment.</td></tr>
<tr><td></td><td>1.15</td><td>Facilities for treatment or disposal of solid waste or liquid effluents?</td><td>Yes</td><td><table><tr><th>Particulars</th><th>Waste</th><th>Treatment/ disposal</th></tr><tr><td>Mine Waste (TPD)</td><td>6.14 Lac Cu. M.</td><td>OB Dump will be reclaimed by plantation. This will vary the topography of the lease area.</td></tr><tr><td>Municipal Solid Waste (Kg/ day)</td><td>45 Kg/ day</td><td>KMC Sites</td></tr><tr><td>Domestic Wastewater (KLD)</td><td>9.75 KLD</td><td>Septic tank followed by soak pit.</td></tr></table>The impact due to this is insignificant.</td></tr>
<tr><td></td><td>1.16</td><td>Facilities for long term housing of operational workers?</td><td>No</td><td>There will be no long-term housing provided within the lease area as the local persons will be given employment.</td></tr>
<tr><td></td><td>1.17</td><td>New road, rail or sea traffic during construction or operation?</td><td>No</td><td>It is an expansion project and no new infrastructure is required.</td></tr>
<tr><td></td><td>1.18</td><td>New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?</td><td>No</td><td>For the purposes of mining activities, existing roads are sufficient. However, haul road will be suitably developed within the proposed area.</td></tr>
<tr><td></td><td>1.19</td><td>Closure or diversion of existing transport routes or infrastructure leading to</td><td>No</td><td>Not Applicable</td></tr>
</table>

<table>
<tr><td></td><td></td><td>changes in traffic movements?</td><td></td><td></td></tr>
<tr><td></td><td>1.20</td><td>New or diverted transmission lines or pipelines?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td></td><td>1.21</td><td>Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?</td><td>No</td><td>The proposed expansion will not involve any impoundment, damming, culverting or realignment or other changes to the hydrology of watercourses or aquifers.</td></tr>
<tr><td></td><td>1.22</td><td>Stream crossings?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td></td><td>1.23</td><td>Abstraction or transfers of water from ground or surface waters?</td><td>No</td><td>The domestic water demand will be met from tanker supply while for dust suppression and plantation will be met from existing water reservoir pit (Rain Water).
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Existing (KLD)</th><th>After Expansion (KLD)</th><th>Source</th></tr>
<tr><td>1.</td><td>Domestic</td><td>4.0</td><td>13.00</td><td>Tanker</td></tr>
<tr><td>2.</td><td>Dust Suppression</td><td>4.0</td><td>7.0</td><td rowspan="2">Existing Rain Water Pit</td></tr>
<tr><td>3.</td><td>Plantation</td><td>7.0</td><td>10.0</td></tr>
<tr><td colspan="2">Total</td><td>15.00</td><td>30.00</td><td></td></tr>
</table>
The lease area falls in over-exploited zone as per the Guidelines/ Criteria for Evaluation of Proposals/ Requests for ground water abstraction with effect from 15.11.2012 by CGWA. Hence, moderately positively impact will be observed as the amount of collected rain water in the already worked pit is more than the demand for domestic purpose. Through the year water is available in the pit.</td></tr>
<tr><td></td><td>1.24</td><td>Change in water bodies or the land surface affecting drainage or run -off?</td><td>Yes</td><td>There is no water body and natural drainage passing through the lease area. Hence, there is no impact on water bodies.
But, due to mining activity, two type of topographical changes will be observed over a period of time as below:-
1) The height of the dump will be 60m from the ground level (480 MSL) and it will increase surface elevation.
2) Ultimate pit limit will be 430 MSL (50 MSL) upto the conceptual phase which will revert the elevation.</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td>As it is an expansion project, the impact on the physical environment will be confined within the lease area. The increase in production will moderate the topography.</td></tr>
<tr><td></td><td>1.25</td><td>Transport of personnel or materials for construction, operation or decommissioning?</td><td>No</td><td>Local people will be engaged in mining activities.
Since, it is an existing mine, no construction activity is envisaged. However, maximum daily production of the mineral is 833 tonnes, which will be transported in the nearby area in about 21 trips of 40 T capacity trucks.
<table>
<tr><th colspan="2">Particulars</th><th>Production (TPD)</th><th>Vehicles Required (Trips/ day)</th></tr>
<tr><td>Existing</td><td>Mineral</td><td>267</td><td>6-7</td></tr>
<tr><td rowspan="2">Expansion</td><td>Mineral</td><td>833</td><td>21</td></tr>
<tr><td>Waste</td><td>170 (Plan Period)</td><td>4-5</td></tr>
</table>
Proper dust control measures viz. water sprinkling on the haul roads, loading & unloading points, transportation routes etc. will be adapted to reduce the air borne emissions. Hence, there will be minimal impact on physical environment.</td></tr>
<tr><td></td><td>1.26</td><td>Long-term dismantling or decommissioning or restoration works?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td></td><td>1.27</td><td>Ongoing activity during decommissioning which could have an impact on the environment?</td><td>No</td><td>Not Applicable</td></tr>
<tr><td></td><td>1.28</td><td>Influx of people to an area in either temporarily or permanently?</td><td>No</td><td>Impact will be insignificant as the local people will be provided employment. It is proposed to employ 300 persons in the expansion project.
<table>
<tr><th rowspan="2">S. No.</th><th rowspan="2">Category</th><th colspan="2">No. of Persons</th><th rowspan="2">Remark</th></tr>
<tr><th>Existing</th><th>Expansion</th></tr>
<tr><td>1.</td><td>Mining Manager</td><td>1</td><td>1</td><td rowspan="6">Employment to local people.</td></tr>
<tr><td>2.</td><td>Mines Foreman</td><td>2</td><td>2</td></tr>
<tr><td>3.</td><td>Mines Mate</td><td>2</td><td>2</td></tr>
<tr><td>4.</td><td>Supervisor</td><td>2</td><td>2</td></tr>
<tr><td>5.</td><td>Semi-Skilled worker</td><td>60</td><td>150</td></tr>
<tr><td>6.</td><td>Unskilled Worker</td><td>51</td><td>140</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><td>7.</td><td>Watchman</td><td>2</td><td>3</td><td></td></tr>
<tr><td colspan="2">Total</td><td>120</td><td>300</td><td></td></tr>
</table>
There is increment of 40% employment with proposed expansion project.
</td></tr>
<tr><td></td><td>1.29</td><td>Introduction of alien species?</td><td>No</td><td>The plant species will be native and selected in consultation to the Local Forest Department and local people. There will be no introduction of alien species.</td></tr>
<tr><td></td><td>1.30</td><td>Loss of native species or genetic diversity?</td><td>No</td><td>The species recorded in the expansion project area are widely distributed in the area and elsewhere, and not restricted to certain pockets.
The vegetation in the existing project area mostly comprises of grasses and herbs. No loss in native species and genetic diversity is foreseen as pollination in grasses is by wind and pollinators were recorded for herbs in the study.</td></tr>
<tr><td></td><td>1.31</td><td>Any other actions?</td><td>No</td><td>No significant action other than above will be taken.</td></tr>
<tr><td></td><td>2.</td><td colspan="3">Use of Natural Resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):-</td></tr>
<tr><td></td><td></td><td>Information/ Checklist confirmation.</td><td>Yes/ No</td><td>Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.</td></tr>
<tr><td></td><td>2.1</td><td>Land especially undeveloped or agricultural land (ha.)</td><td>No</td><td>The Mining lease area as per revenue records comprises Govt. land (161.2109 ha.), Pvt. Khatedari land (150 ha.), Diversified Forest Land (104.34 ha.) and Grazing land (75.0 ha.).</td></tr>
<tr><td></td><td>2.2</td><td>Water (expected source & competing users) unit: KLD.</td><td>Yes</td><td>The block is categorized as over exploited block as per CGWB, and since there is no water abstraction. Hence, impact is insignificant.
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Existing (KLD)</th><th>After Expansion (KLD)</th><th>Source</th></tr>
<tr><td>1.</td><td>Domestic</td><td>4.0</td><td>13.00</td><td>Tanker</td></tr>
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<tr><td>3.</td><td>Plantation</td><td>7.0</td><td>10.0</td></tr>
<tr><td colspan="2">Total</td><td>15.00</td><td>30.00</td><td></td></tr>
</table>
The application of NOC from CGWA has been online uploaded on dated 30.03.2017. Receipt is enclosed as Annexure – VII.</td></tr>
<tr><td></td><td>2.3</td><td>Minerals (MT)</td><td>No</td><td>Not Applicable</td></tr>
<tr><td></td><td>2.4</td><td>Construction material – stone, aggregates, sand/</td><td>No</td><td>Not Applicable</td></tr>
</table>

		soil (expected source – MT)		
	2.5	Forests and timber (source – MT)	No	Not Applicable
	2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	No	Details as given:-

Phase	Demand	Expected Source
Electricity		
Operational	450 kVA (Existing) 550 kVA (After Expansion).	Dabi Substation of JVVNL
Fuel (for machinery operations)		
Operational	350 Lts/ day (Existing) 550 Lts/ day (After Expansion).	IOCL storage pump

	2.7	Any other natural resources (use appropriate standard units).	No	No other significant resources other than above are used.
	3.	**Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.**		
	S. No.	**Information/ Checklist confirmation**	**Yes/ No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.**
	3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	As per MSIHC Rules' 1989 and 2000, Ammonium Nitrate is classified as Hazardous Chemicals. The quantity of ANFO is used for blasting purpose will be 0.011 Tonnes approximately. (below the threshold limit of threshold quantities i.e. 2,500 Tonnes) but are not covered under the rules of 4, 5, 7 to 9, 13, to 15, 10 and 12. Hence, the significant hazard due to the same will be negligible as the exposure level is minimal and confined within the lease area.
	3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases).	No	The mining project will not affect in occurrence of disease due to storage, transport, handling or production of mineral.
	3.3	Affect the welfare of people e.g. by changing living conditions?	No	The proposed expansion project will directly/ indirectly develop the area by providing employment opportunities. With the proposed development in and around the area there will be

				supporting facilities/ infrastructure eventually leading to the development of the area.
	3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	There are no vulnerable groups nearby the mine site, which could get affected due to mining operations. Details of Schools and Hospitals located nearby the mine site are mentioned below:-

Name	Near Village	Distance and Direction (From Lease Boundary)
Medical Facility		
Govt. Hospital	Dabi	5.093 Km, NW
Govt. Dispensary	Dhaneshwar	1.306 Km, ENE
Govt. Dispensary	Sutra	2.502 Km, NW
Schools		
Govt. School	Dhaneshwar	1.342km, ENE
Ma Bharti Vidhya Niketan Ucch Prathmik Vidhyalya.	Dhaneshwar	Within ENE Lease Boundary (On encroached land. The same is ascertained by Sarpanch. Enclosed at **Annexure – VIII.**
Govt. School	Sutra	2.575 Km, NW

(Source: - All distance are taken with respect to Google Earth).

	3.5	Any other causes	No	Nothing significant.
	4.	**Production of solid wastes during construction or operation or decommissioning (MT/ month).**		
	S. No.	**Information/ Checklist confirmation.**	**Yes /No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.**
	4.1	Spoil, overburden or mine wastes	Yes	

S. No.	Year	Waste Generation (MT/ Month)
1	First Five Years	4,236

***Source: Approved Modified Mining Plan.**

	4.2	Municipal waste (domestic and or commercial wastes)	No	Approx. 300 local people (after expansion) will be employed. About 45.0 kg/ day domestic waste will be generated at mine site, which will be collected in dustbins and disposed off to Municipal Council sites, Bundi.
	4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	Insignificant quantity of machinery waste oil (as the machinery is on hire basis) will be generated (<5 KL/ Annum) and sent to authorized dealer.
	4.4	Other industrial process wastes.	No	Not Applicable
	4.5	Surplus product.	No	Not Applicable
	4.6	Sewage sludge or other	No	Not Applicable

		sludge from effluent treatment.		
	4.7	Construction or demolition wastes.	No	Not Applicable
	4.8	Redundant machinery or equipment.	No	Not Applicable
	4.9	Contaminated soils or other materials.	No	Not Applicable
	4.10	Agricultural wastes.	No	Not Applicable.
	4.11	Other solid wastes.	No	All the disposal plastic, Bio-Medical, Construction and Demolition waste are not applicable as the waste ascertained in this category is nil.
	5.	**Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/ hr)**		
	S. No.	**Information/ Checklist confirmation**	**Yes /No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.**
	5.1	Emissions from combustion of fossil fuels from stationary or mobile sources.	Yes	**Stationary Sources** Diesel engine emissions (stationary) are given below:- **Parameter** / **Emission rate** PM / 0.3 in g/ KW-hr NO_x / 9.2 in g/ KW-hr CO / 3.5 in g/ KW-hr HC / 1.3 in g/ KW-hr All measures will be taken to restrict the emission within CPCB norms. **<u>Transportation</u>** Movement of vehicles like dumpers, trucks, tankers etc. will also generate dust. The transportation activities on unpaved area results in fugitive emissions to the tune of 6.55 kg/ Veh. m for PM_{10} and 0.67 kg/ Veh. m for $PM_{2.5}$. (*Calculation based on USEPA- AP 42 series.*). **<u>Gaseous Emission rate due to transportation</u>** CO / 5.45 g/kWh HC / 0.78 g/kWh NOx / 5.0 g/kWh

<table>
<tr><td></td><td>5.2</td><td>Emissions from production processes.</td><td>Yes</td><td>Since, it is an existing mine and production is proposed to increase from 267 TPD to 833 TPD. Dust is the main pollutant, which will be generated mainly from mining activities (drilling, blasting and excavation) and vehicle movement.
The different measures taken to control the dust emissions are given below:-
<table>
<tr><th>Source</th><th>Mitigation Measures</th></tr>
<tr><td>Drilling</td><td rowspan="5">➢ Water sprinkling on haul roads;
➢ Wet drilling;
➢ Limiting the speed of the vehicles;
➢ Regular maintenance of vehicles/ equipments;
➢ Mineral/ overburden/ waste will be covered with tarpaulin sheets during transportation;.
➢ Plantation along the road as green barrier.</td></tr>
<tr><td>Blasting</td></tr>
<tr><td>Excavation</td></tr>
<tr><td>Handling Process</td></tr>
<tr><td>Haul Road/ Overburden Handling</td></tr>
</table></td></tr>
<tr><td></td><td>5.3</td><td>Emissions from materials handling including storage or transport</td><td>Yes</td><td>There will be fugitive emissions generated during material handling, transportation, loading and unloading etc. Regular water sprinkling on haul road will suppress the dust particles and prevent them from getting air-borne.
<u>Transportation</u>
Movement of vehicles like dumpers, trucks, tankers etc. will also generate dust. The transportation activities on unpaved area results in fugitive emissions to the tune of 0.0049 g/sec/m for PM_{10} and 0.002 g/sec/m for $PM_{2.5}$. (Calculation based on USEPA- AP 42 series.).
<u>Material Handling</u>
Dust will be generated during loading operation of material loading into dumpers. The material handling activities due to loading of mineral and waste results in fugitive emissions to the tune of 0.00086 g/sec/m for PM_{10} and 0.0000107 g/sec/m for $PM_{2.5}$.
However, all mitigation measures will be taken to control the same.</td></tr>
<tr><td></td><td>5.4</td><td>Emissions from construction activities</td><td>No</td><td>No construction activities are involved. Hence, it is not envisaged.</td></tr>
</table>

		including plant and equipment		
	5.5	Dust or odors from handling of materials including construction materials, sewage and waste.	No	There is no dust or odor generated from handling of material including construction materials, sewage and waste.
	5.6	Emissions from incineration of waste.	No	There will be no incineration of waste.
	5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris).	No	Not Applicable
	5.8	Emissions from any other sources	No	No other source is significant.
6.	**Generation of Noise and Vibration, and Emissions of Light and Heat.**			
	S. No.	**Information/ Checklist confirmation.**	**Yes/ No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data with source of information data.**
	6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Mining operation is being carried out by semi-mechanized method. However; due to expansion capacity mining equipments configuration will be as under:- **S. No.** | **List of Equipments** | **Range dB (A)** 1. | Excavator | 95 - 100 2. | Hydraulic Jack Hammer | 95 - 100 3. | Compressor | 92 - 95 4. | Dumpers | 84 - 86 ***(Source:-NIRM).*** **Mitigation Measures**: - The following measures will be adopted to control the noise and vibration. ➢ Proper and regular maintenance of machinery ➢ Earmuffs and earplugs will be provided to the persons exposed to noise levels. ➢ Periodical medical checkup will be conducted. ➢ Measures will be taken to contain noise levels up to 85 dB(A).
	6.2	From industrial or similar	No	Not Applicable.

		processes		
	6.3	From construction or demolition	No	Not Applicable.
	6.4	From blasting or piling	Yes	Controlled blasting technique will be adopted and the charge per delay is 13.50 Kg. Optimum use of explosive will be made to restrict the PPV levels and well below the DGMS standards of 5.0 mm/ sec at all times. Blasting will be carried out during lunch period/ breaks when there is lease activity. National Institute of Rock Mechanics, KGF (NIM) has carried out studies to assess the impact of blasting on the structures of the nearby villages due to Mining project. The salient recommendations of the report submitted by NIRM are as follows:-

Maximum Charge per delay for a given distance.	
Distance (Meters)	**Charge per delay (Kg)**
50	22
75	49
100	87
125	136
150	196
175	267
200	**349**
225	442
250	545
275	660
300	785
325	922
350	1069
375	1227
400	1396
425	1576
450	1767
475	1969
500 and beyond	**2181**

Source: - NIRM {National Institute of Rock Mechanics, KGF (NIRM)}.

The distance of the school are 200m, E from working pit and the proposed expansion project using 13.50 Kg of charge per delay

<table>
<tr><td></td><td></td><td></td><td></td><td>only; hence the impact will be insignificant.</td></tr>
<tr><td></td><td>6.5</td><td>From construction or operational traffic</td><td>Yes</td><td>Noise generated during operational traffic i.e. due to vehicular traffic and material transportation within the lease area, will be calculated based on the combined effect of noise has been estimated by using Custic 3.2 (Lakes Environmental – USEPA approved).
The predicted noise levels based on this analysis at the project boundary considering that there is no attenuation on account of barriers, will be as follows:-
<table>
<tr><th>Location</th><th>Max. Existing Leq (day)</th><th>Predicted</th><th>Resultant Max.</th><th>CPCB Standard, Leq(day)</th></tr>
<tr><td>Project Site</td><td>52</td><td>62</td><td>62.4</td><td>75</td></tr>
<tr><td>Gudha</td><td>53.5</td><td>36.9</td><td>53.6</td><td>55</td></tr>
<tr><td>Chainpuriya</td><td>52</td><td>39.7</td><td>52.2</td><td>55</td></tr>
<tr><td>Dhaneshwar</td><td>50.6</td><td>39.7</td><td>50.9</td><td>55</td></tr>
<tr><td>Tapur Ki Khan</td><td>52</td><td>28</td><td>52</td><td>55</td></tr>
<tr><td>Dasoliya</td><td>53.5</td><td>39.1</td><td>53.7</td><td>55</td></tr>
<tr><td>Sutara</td><td>52.6</td><td>37.9</td><td>52.7</td><td>55</td></tr>
</table>
All values are in db (A).
However, the expected noise levels will be well maintained within the DGMS/ CPCB norms of 85 dB (A).</td></tr>
<tr><td></td><td>6.6</td><td>From lighting or cooling systems</td><td>No</td><td>Not Applicable</td></tr>
<tr><td></td><td>6.7</td><td>From any other sources</td><td>No</td><td>No other sources are significant.</td></tr>
<tr><td></td><td>7.</td><td colspan="3">Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:-</td></tr>
<tr><td></td><td>S. No.</td><td>Information/ Checklist confirmation</td><td>Yes /No</td><td>Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.</td></tr>
<tr><td></td><td>7.1</td><td>From handling, storage, use or spillage of hazardous materials</td><td>No</td><td>The proposed expansion project has two licensed magazine each of 2000 Kg and 500 Kg capacity exists at site. The permission has been obtained by Joint Chief Controller of Explosives, Faridabad.</td></tr>
<tr><td></td><td>7.2</td><td>From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)</td><td>No</td><td>There is no risk of contamination of land and water due to discharge of wastewater. However, no untreated sewage will be discharged in the open land causing the contamination to the ground water. The wastewater generated will be channelized in the septic tank followed by soak pit.</td></tr>
<tr><td></td><td>7.3</td><td>By deposition of pollutants</td><td>Yes</td><td>The ground level concentrations are computed for 24-hr average.</td></tr>
</table>

		emitted to air into the land or into water		The maximum GLC's were falling within the pit area/ lease area for the given meteorological and topographical conditions. **Pollutant** — **Maximum Incremental GLC's, µg/m³** PM_{10} — 15.6 $PM_{2.5}$ — 6.3 NOx — 5.9 CO — 9.8
	7.4	From any other sources	No	There will not be any other sources, which will contaminate land and water resources.
	7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	Significant contribution on long-term built-up of pollutants is not envisaged from this project.
	8.	**Risk of accidents during construction or operation of the project, which could affect human health or the environment.**		
	S. No.	**Information/ Checklist confirmation.**	**Yes /No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.**
	8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances.	No	Not Applicable.
	8.2	From any other causes	No	The risks of accident are anticipated from operation of equipments, failure of mine pit etc. Pit slope will be kept at 45°. No loose stone or debris will be allowed to remain near the edges of excavation and along the sides of haul road. However, good safety practices will be applied at the mine site. All precautionary measures will be adopted and use of protective equipments will be mandatory. However, to deal the minor incidences and accidents, first aid measures at site will be provided.
	8.3	Could the project be affected by natural disasters causing environmental damage (e.g. Floods, earthquakes, landslides, cloudburst etc)?	No	As per the secondary data available no such precedents has been reported. **Floods** ➢ For effective functioning, Post-monsoon and Pre-monsoon groundwater level will be monitored regularly. ➢ Garland drains around dumps are used to channelize the rain

				water into ponds. **Earthquakes** The site is located in the Seismic Zone II, as per the seismic zoning map of India given in BIS code IS: 1893 (Part1)-2002, which is Low Damage Risk Zone.
	9.	**Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality.**		
	S. No.	**Information/ Checklist confirmation**	**Yes /No**	**Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.**
	9.1	Lead to development of supporting cities, ancillary development or development stimulated by the project which could have impact on the environment e.g.:- ➢ Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) ➢ Housing development ➢ Extractive industries ➢ Supply industries ➢ Other	Yes	The proposed expansion has made positive impact on the area in terms of socio-economic profile, education, petty shops, health, drinking water, infrastructure etc. There is a drastic improvement in road condition, power supply etc. Due to improvement in economy, various trades have come up in the area. General condition of nearby areas has improved to a great extent.
	9.2	Land to after use of the site, which could have an impact on environment.	No	At the end of the life of mine, the partly excavated pit area will be 135.90 ha. and used as water reservoir. This will add to the positive impact in environment and aesthetic beauty of the area as well as recharging of ground water.
	9.3	Set a precedent for later developments.	No	The mining will provide value chain addition in the wholesale and further retail of the sand stone for end use.
	9.4	Have cumulative effects due to proximity to other existing or planned projects	Yes	It will have positive impact overall development of the area. Infrastructure will improve and also help in improving the economic well being of the people around.

		with similar effects.		

II Environmental Sensitivity (within 15 km radius).

S. No.	Areas	Name/ Identity	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0 Km towards south. Enclosed as **Annexure – II (C).**	
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests.		

S. No.	Particulars	Distance (From Lease Boundary)	Direction (From Lease Boundary)
Water Bodies			
1.	Eru Nadi	2.786 Km	S
2.	Chambal River	8.897 Km	SSE
Forests			
1.	Dhaneshwar Reserved Forest	0.505 Km	NNE
2.	Dhaneshwar Reserved Forest	2.25 Km	E
3.	Dasaliya B Reserved Forest	0.00 Km	NW & SSW

Source: All distances are taken with respect to Google Earth.

S. No.	Areas	
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration.	

S. No.	Particulars	Distance (From Lease Boundary)	Direction (From Lease Boundary)
Forests			
1.	Dhaneshwar Reserved Forest	0.505 Km	NNE
2.	Dhaneshwar Reserved Forest	2.25 Km	E
3.	Dasaliya B Reserved Forest	0.00 Km	NW & SSW

Source: All distances are taken with respect to Google Earth.

4	Inland, coastal, marine or underground waters.	None within the 15 Km radius.
5	State, National boundaries.	None within the 15 Km radius.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.	None within the 15 km radius.
7	Defense installations.	None within the 15 km radius.
8	Densely populated or built-up area.	

S. No.	Particulars	Distance (Km) (From Lease Boundary)	Direction (From Lease Boundary)

<table>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>1.</td><td>Nearest Habitation - Dhaneshwar</td><td>1.24 Km uptill ENE Lease Boundary</td><td>NE</td></tr>
<tr><td>2.</td><td>Densely populated - Dabi</td><td>3.849</td><td>WNW</td></tr>
</table>
Source: All distances are taken with respect to Google Earth.
</td></tr>
<tr><td></td><td>9</td><td>Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities).</td><td>
<table>
<tr><th>Name</th><th>Near Village</th><th>Distance and Direction (From Lease Boundary)</th></tr>
<tr><td colspan="3">Medical Facility</td></tr>
<tr><td>Govt. Hospital.</td><td>Dabi</td><td>5.093 km, NW</td></tr>
<tr><td>Govt. Dispensary.</td><td>Dhaneshwar</td><td>1.306 km, ENE</td></tr>
<tr><td>Govt. Dispensary.</td><td>Sutra</td><td>2.502 km, NW</td></tr>
<tr><td colspan="3">Temples</td></tr>
<tr><td>Baba Ramdev Temple.</td><td>Dhaneshwar</td><td>1.286 km, ENE</td></tr>
<tr><td>Shivalya Temple.</td><td>Sutra</td><td>2.447 km, NW</td></tr>
<tr><td>Ambey Rani Mata Ka Madir.</td><td>Dhaneshwar</td><td>1.314 km, ENE</td></tr>
<tr><td colspan="3">Schools</td></tr>
<tr><td>Govt. School.</td><td>Dhaneshwar</td><td>1.342 Km, ENE</td></tr>
<tr><td>Ma Bharti Vidhya Niketan Ucch Prathmik Vidhyalya.</td><td>Dhaneshwar</td><td>Within ENE Lease Boundary.</td></tr>
<tr><td>Govt. School.</td><td>Sutra</td><td>2.575 Km, NW</td></tr>
</table>
Source: All distances are taken with respect to Google Earth.
</td></tr>
<tr><td></td><td>10</td><td>Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals).</td><td>Mineral (Sandstone): Available around the lease & study area. Bundi Block for Groundwater Resources: Classified as over- exploited zone for Groundwater Resources by CGWB, New Delhi.
No ground water abstraction or encounter is being undertaken.</td></tr>
<tr><td></td><td>11</td><td>Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded).</td><td>None</td></tr>
<tr><td></td><td>12</td><td>Areas susceptible to natural hazard which could cause the project to present</td><td>Seismic Zone – II: According to BMTPC's vulnerability atlas, II edition, the area falls in a region of low damage risk zone.
There is no incidence of subsidence, landslides, erosion, flooding or</td></tr>
</table>

		environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions).	extreme or adverse climatic conditions in the area so far.

"I hereby give undertaking that the data and information given in the application and enclosure are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost."

Date: - 08.05.2017.

Place: - Bundi

Signature and Name of Applicant

(S. S. Arora)

Power of Attorney

****

EIA/ EMP REPORT

SECTION – I

INDEX

****

1.0 INTRODUCTION

1.1 INTRODUCTION

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a lease prior to decision-making. It is a decision making tool, which guides the decision makers in taking appropriate decisions for existing mine. EIA systematically examines both beneficial and adverse consequences of the existing mine and ensure that these impacts are taken into account during the project expansion.

The existing project is categorized under category 1 (a) - A category {Mining of Minerals} as the lease area is 490.5509 ha. (≥ 50 ha. of mining lease area).

A general condition is also applicable to this project.

A Wildlife Sanctuary, Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0 Km towards South from the Mine Site.

****Note: -*** *In lights of the suggestions of Hon'ble EAC Committee, application for partial surrender of lease area has been submitted to Mining Engineer, Office, Bundi vide letter no. 2483, dated 02.03.2017.*

*For the same, area falling within 1.0 Km distance from the sanctuary boundary has been identified as surrender area and it comprises 127.7891 ha. and retained lease area is 490.5509 ha. In this reference, letter from Deputy Forest Conservator (Wildlife), Mukundra National Park, Kota to The Additional Principal Chief Conservator of Forest, Chief Wildlife Warden, Rajasthan vide no. F ( ) DFO/M.N.P./2016-17/1071 dated 16.02.2017 has been obtained (**Annexure-II (A)**).*

*A letter from The Additional Principal Chief Conservator of Forest, Jaipur addressed to The Director, MoE,F&CC, New Delhi has been obtained vide letter no. F 4(T) Miscellaneous/ PCCF/ 2016/ 3457 dated 10.03.2017 (Enclosed as **Annexure – II (B)**).* ***It is clearly states that the distance between the lease boundary and Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve has been clearly marked on toposheet at a distance of 1.0 Km. It is clearly states that the distance between the lease boundary and Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is at a distance of 1.0 km towards south and the same has been marked on the toposheet.***

It is evident that partial surrender of lease area will be undertaken by Rider Agreement, which will be obtained after EC approval precedent to Judgment Deepak Kumar Vs State of Haryana dated 27.02.2012.

1.2 REGULATORY COMPLIANCES

- The lease was originally granted in favour of Sh. Damodar Das Khandelwal for an area of 20 Sq. Miles vide Govt. order dated 30.11.1959 for a period of 5 Years.
- After the expiry of Sh. Damodar Das his legal son heir Sh. Triloki Das submitted an application in favour of Kaniyalal Ghatiwala on dated 06.07.1963.
- Lease was fifth time renewed vide State Govt. Order no. - F-9 (1) Mines/ Group-2/ 95 dated 24th December' 1996 for an area of 618.34 Sq. Km. as ML No. - 47/ 94 in the name of Kanhaiya Lal Ghatiwala.
- Lease validity has been extended for another 10 years (validity is from 14.09.1994 to 13.09.2024) (30 years) vide Govt. order no. खअ / बून्दी–1 / सी.सी.–4 / एम.एल. 47 (94)/ 5648 dated 05.03.2013. Enclosed as **Annexure – IX.**
- This lease was again transferred in favour of M/s Kanhaiya Lal Rameshwar Das after the expiry of Sh. Kanhaiya Lal Ghatiwala on dated 27.05.2002. Enclosed as **Annexure – X.**
- Diversion of 104.34 ha. of forest land for mining has been obtained from the Ministry of Environment & Forests, New Delhi vide letter no. 8-8/ 78 – FC dated 24.02.2000. Enclosed as **Annexure – V.**
- A confirmation duly authenticated by the Competent Authority in the State Government to the effect that the project does not falls in Aravalli Hills has been obtained from the Office of Mining Engineer, Division – I, Bundi (Raj.) vide letter no. 58 dated 26.02.2016. Enclosed as **Annexure – XI.**
- Modified Mining Plan along with Progressive Mine Closure Plan has been approved by SME, Kota vide letter no. 4256 dated 14.10.2015. Enclosed as **Annexure-XII.**
- The Biodiversity report based on baseline study period i.e. October, November and December' 2015 (Prepared by Enkay Enviro Services Pvt. Ltd., Jaipur) including list of flora and fauna, conservation plan of three Schedule – I and one Schedule - II species i.e. Indian Gray Mongoose (*Herpestes edwardsii*), Peafowl (*Pavo Cristatus*), Sloth Bear (*Melursus ursinus*) and Leopard (*Panthera pardus fusca*) along with map showing common boundary of Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve has been duly authenticated from the Office of Deputy Conservator of Forests (Wildlife), Mukundra National Park, Kota vide letter no. F ( ) Tech/ DFO/ M.N.P. / 2016 – 17/ 4782 dated 03.05.2017. Enclosed as **Annexure – XIII.**

- A Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0 Km towards south from the Mine Site. Application for online submission of Part- I has been uploaded for necessary clearance from NBWL on dated 30.03.2017 for an area of 490.5509 ha. Enclosed as **Annexure – VI.**
- Terms of Reference have been issued from Ministry of Environment, Forests and Climate Change, New Delhi vide letter no. J-11015/ 154/ 2015 – IA.II (M) dated 11.06.2015. Enclosed as **Annexure – XIV.**
- The lessee has been obtained permission for use of explosives by Joint Chief Controller of Explosives, North Circle, Faridabad vide letter no. E/ NC/ RJ/ 22/ 226 (E9879) dated 19.03.2014 which is valid up to 31.03.2019. Enclosed as **Annexure – XV.**
- The project has been obtained Consent to Operate from Rajasthan State Pollution Control Board, Jaipur vide letter no. F (Mines)/ Bundi (Bundi)/ 2 (1)/ 2009 – 2010/ 363 – 369 dated 18.04.2016 which is valid up to 31.03.2019. Enclosed as **Annexure – I.** The same will be revised after issuance of Environmental Clearance.
- Public hearing has been successfully executed on dated 11.05.2016 as per the EIA Notification 14th September' 2006 and its subsequent amendments. Enclosed as **Annexure – XVI.**
- There is no litigation pending against the project/ project proponent in the court of law as of date to the best of our knowledge and information provided by client.

1.3 IDENTIFICATION OF PROJECT PROPONENT

The defined lessee is Kanhaiya Lal Rameshwar Das which is a partnership entity (Partnership Deed is enclosed as **Annexure - XVII**) is the legal heir of the mine proposing expansion.

The company has interested to increase the production capacity from 80,000 TPA to 2,50,000 TPA due to increased market demand in construction and infrastructure sector.

Name & Address of the Applicant	:	Kanhaiya Lal Rameshwar Das (Applicant) Authorized Signatory:- S. S. Arora (Power of Attorney) #7- A, Vallabh Nagar, Kota - 324007, Rajasthan. E mail:- arorasunder@yahoo.com Phone No.: - 09828105873; Fax No.: - 0744-2501711

1.4 EIA PROCESS

As per the Gazette Notification dated 14th September, 2006 and its subsequent amendments on dated 01.12.09 and 04.04.2011, the project is classified as category "A" of 1 (a) {< 50 ha. ≤ 5 ha of mining lease area).

The Environmental Clearance process for the existing project will comprise of three stages. These stages in sequential order are:-

1. Scoping
2. Public consultation
3. Appraisal

The flow chart depicting these stages to obtain the prior Environmental Clearance for the existing project is as given below in Figure 1.1.:-

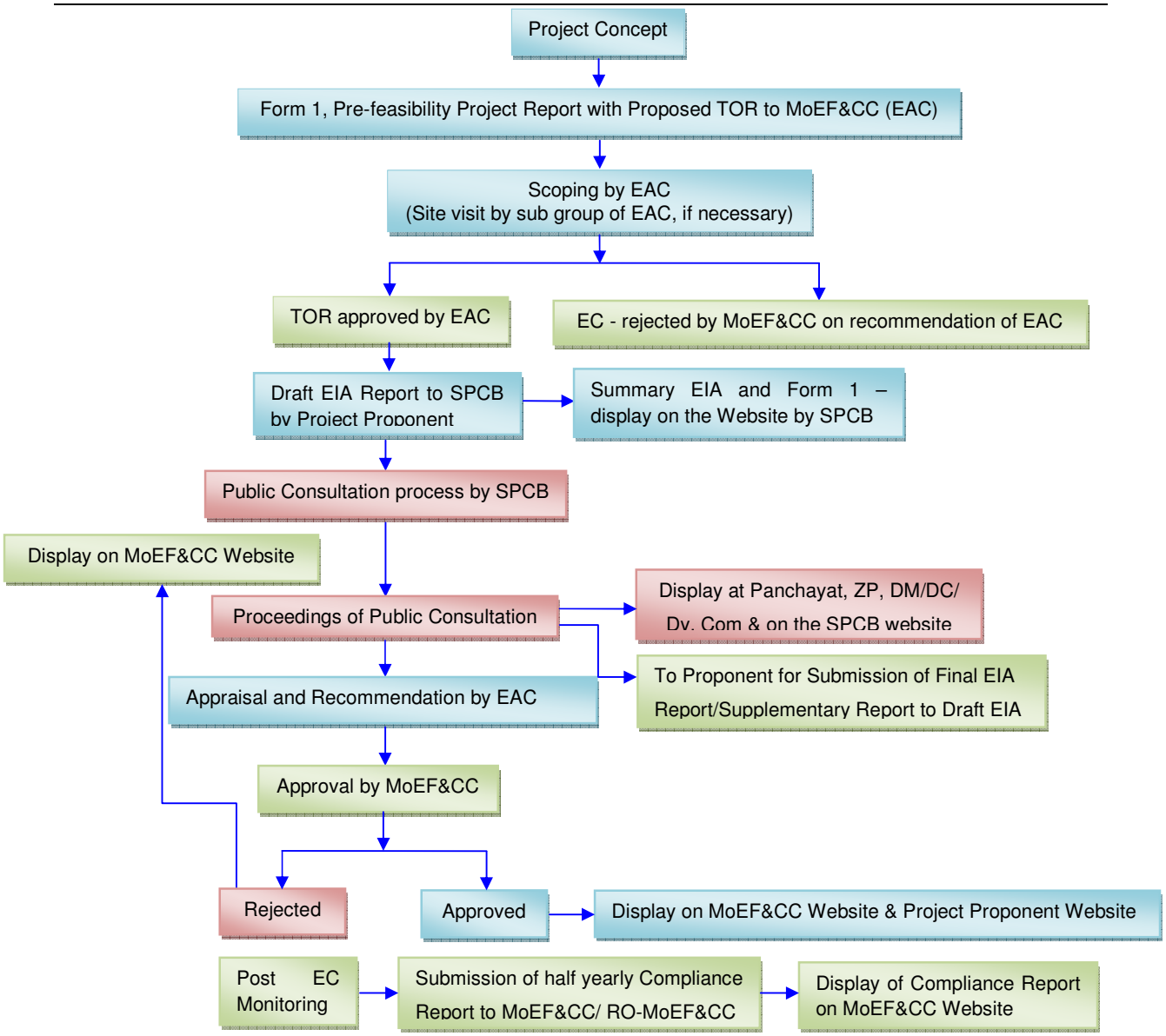


Figure 1.1: Stages for obtaining prior Environmental Clearance.

1.5 POINT WISE COMPLIANCE OF TOR

The application of Terms of Reference (TOR) for the Sandstone Mining project of M/s Kanhaiya Lal Rameshwar Das was online uploaded on dated 22.04.2016 and 27.09.2016 as per the suggestion of Hon'ble EAC Members on dated 22.07.2016 at MoEF&CC, New Delhi and the same was considered in the 33rd Meeting of the Reconstituted Expert Committee (Mining) held on 15th May' 2015 was accorded approval vide letter no. J-11015/ 154/ 2015-IA.II (M) dated 11.06.2015 **(Annexure – XIV).** The point wise compliance of the TOR is as under:-

<table>
<tr><th>TOR Ref.</th><th>TOR Detail</th><th>Implementation/ Plan</th></tr>
<tr><td>1.</td><td>Year – wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification, 1994 came into force w.r.t the highest production achieved prior to 1994.</td><td>The EIA Notification 1994 is not applicable on the proposal. Year – wise production details since 1993 - 94 onwards are given below:-
<table>
<tr><th>S. No.</th><th>Year</th><th>Production (TPA)</th></tr>
<tr><td>1</td><td>1993 – 94</td><td>1,34,639</td></tr>
<tr><td>2</td><td>1994 – 95</td><td>1,31,562</td></tr>
<tr><td>3</td><td>1995 – 96</td><td>1,39,100</td></tr>
<tr><td>4</td><td>1996 – 97</td><td>1,09,592</td></tr>
<tr><td>5</td><td>1997 – 98</td><td>1,56,344</td></tr>
<tr><td>6</td><td>1998 – 99</td><td>1,44,459</td></tr>
<tr><td>7</td><td>1999 – 2000</td><td>1,54,947</td></tr>
<tr><td>8</td><td>2000 – 2001</td><td>72,120</td></tr>
<tr><td>9</td><td>2001 – 2002</td><td>1,12,615</td></tr>
<tr><td>10</td><td>2002 – 03</td><td>86,659</td></tr>
<tr><td>11</td><td>2003 – 04</td><td>75,129</td></tr>
<tr><td>12</td><td>2004 – 05</td><td>61,005</td></tr>
<tr><td>13</td><td>2005 – 06</td><td>49,647</td></tr>
<tr><td>14</td><td>2006 – 07</td><td>55,505</td></tr>
<tr><td>15</td><td>2007 – 08</td><td>54,774</td></tr>
<tr><td>16</td><td>2008 – 09</td><td>65,413</td></tr>
<tr><td>17</td><td>2009 – 10</td><td>65,667</td></tr>
<tr><td>18</td><td>2010 – 11</td><td>58,024</td></tr>
<tr><td>19</td><td>2011 – 12</td><td>67,796</td></tr>
<tr><td>20</td><td>2012 -13</td><td>77,530</td></tr>
<tr><td>21</td><td>2013 – 14</td><td>79,364</td></tr>
<tr><td>22</td><td>2014 – 15</td><td>74,170</td></tr>
<tr><td>23</td><td>2015 - 16</td><td>53,236</td></tr>
</table>
The applicability of EC on the proposal is as per EIA Notification 2006 only. Thus, the project is not categorized as violation. Precedent to the outcome of NGT judgment on 04.05.2016, the mines has been closed by the State Government for want of EC.</td></tr>
<tr><td>2.</td><td>A copy of the document in support of the fact that the Proponent is the rightful</td><td>The lease has been transferred in favour of Kanhaiya Lal Rameshwar Das vide Govt. order dated 27.05.2002 and</td></tr>
</table>

	lessee of the mine should be given.	mutation agreement for transfer was executed on July 16, 2002. This specifies the PP as rightful lessee. Enclosed as **Annexure – X.**
3.	All documents including approved Mine Plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management and mining technology and should be in the name of lessee.	As desired all the documents including approved Mining Plan, EIA and Public Hearing are compatible with one another in terms of the mine lease area, production levels, waste generation and its management. However, the subjective revision of lease area will be done in all statutory approval only after execution of Rider agreement.
4.	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Corner coordinates of the mining lease area along with other ecological features of the study area (core and buffer zone) have been provided on map interpreted/ generated by the data obtained from LISS-IV sensor data of IRS-P6 satellite with resolution of 5.8m is done. Enclosed as **Annexure – XVIII.**
5.	Information should be provided in Survey of India toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and river and soil characteristics.	The geological map of the area, geomorphology of land forms, existing minerals, water bodies, streams and river has been shown on the toposheet. Enclosed as **Annexure – XIX.**
6.	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the state; land diversion for mining should have approval from State land use board or the concerned authority.	➢ The Mining is being done as per the State Land Use Policy, as the lease has been sanctioned by DMG, GOR, Udaipur. ➢ As per the statutory requirement, diversion of 104.34 ha. of forest land for mining has been obtained from the Ministry of Environment & Forests, New Delhi vide letter no. 8-8/ 78 – FC dated 24.02.2000, which is valid up to 2019.
7.	It should be clearly stated whether the	**<u>Environmental Policy</u>**

	proponent company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA report with description of the prescribed operating process/ procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions?	The Company has a well laid down Environmental Policy duly being executed under the supervision of Environmental Cell. Enclosed as **Annexure – XX.** **<u>Standard Operating Procedures</u>** The Company has well defined procedures to bring into focus any infringement/ deviation/ violation of the Environmental and Forest norms. Enclosed as **Annexure – XXI.**
	The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given.	Company has well defined hierarchical system to deal with the environmental issues and for ensuring compliance with the Environmental Clearance conditions. Enclosed as **Annexure – XXII.**
	The system of reporting of non - compliances/ violations of environmental norms to the Board of Directors of the Company and/ or shareholders or stakeholders at large may also be detailed in the EIA report.	Management Representative will appraise the highest authority on quarterly basis regarding the performance of the mine on environmental measures. Management Representative will also post the same on firm's website accessible to public domains. Enclosed as **Annexure – XXIII.**
8.	Issues relating to mine safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	No underground workings exist in the lease area. Hence, subsidence study is not envisaged. **<u>Slope Study</u>** As per RMMCR, 1986 pit slope at 45° is being maintained to balance between operational and economical efficiency and safety. Face angle at 80° is maintained and 85° slope for dump with two-three terraces is estimated. **<u>Blasting Study</u>** Controlled and Muffled blasting is being used in this project. All the safety measures as per 'Metalliferous Mines Regulation 1961' and the permission of DGMS are taken.
9.	The study area will comprise of 10km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should	➢ The study area (10 Km zone) around the mine lease from lease periphery has been considered. Enclosed as **Annexure – XXIV.** ➢ The EIA report carried out contains all data such as

	be for the life of the mine/ lease period.	waste generation etc. for the life of mine (42.80 Years)/ lease period (i.e. 14.09.2024).
10.	Land use of the study area delineating forest area, agricultural land, grazing land, Wildlife Sanctuary, National Park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	➢ The land use of the study area showing forest area, agriculture land, water bodies, human settlement etc. has been given at Section - III, Sub - Section - 3.4.3 of EIA/ EMP Report. ➢ A Wildlife Sanctuary, named as Jawahar Sagar/ Mukundra Tiger Reserve having common boundary, is situated at a distance of 1.0 Km towards south from the Mine site. ➢ There is no other National Park, Migratory routes of fauna and National Monument within 10 Km periphery of the lease area and as per secondary data available. Application for online submission of Part - I has been uploaded for necessary clearance from NBWL on dated 30.03.2017. Enclosed as **Annexure –VI.** Map showing land use of the study area by using Satellite Imagery is enclosed as **Annexure – XXV.** Land use plan of the mine lease area to encompass Pre-Operational, Operational and Post–Operational phases is given in **Section – II, Sub-Section - 2.4.5 of EIA/ EMP Report.** **<u>Change of Land use</u>** The land use classification as per revenue records is as follows:- <table><tr><th>Land</th><th>Area (Ha.)</th></tr><tr><td>Government waste land</td><td>161.2109</td></tr><tr><td>Private Khatedari land</td><td>150.00</td></tr><tr><td>Diversified Forest land</td><td>104.34</td></tr><tr><td>Grazing/ Pasture land</td><td>75.00</td></tr></table>➢ The existing lease is in operation since 1952. The extent of existing broken up area will extend from 83.46 ha. to 85.86 ha. in next five years. ➢ The additional horizontal extend will be enabled with removal of top soil existing up to 0.5m (max.).

		➢ At the end of lease period, the same will be extending horizontally up to 219.196 ha. (Max). ➢ Hence, the impact of change of land use will not alter significantly as it is an operative mine.
11.	Details of the land for any overburden dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	➢ No OB dump is proposed outside the mine lease area. ➢ No R & R issues are involved (as per RFCTLARR Act' 2013).
12.	A certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	Diversion of 104.34 ha. of forest land for mining has been obtained from the Ministry of Environment & Forests, New Delhi vide letter no. 8-8/ 78 – FC dated 24.02.2000 (valid up to 2019). Enclosed as **Annexure – V.**
13.	Status of Forestry Clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Diversion of 104.34 ha. of forest land for mining has been obtained from the Ministry of Environment & Forests, New Delhi vide letter no. 8-8/ 78 – FC dated 24.02.2000 (valid up to 2019). Enclosed as **Annexure – V.**
14.	Implementation status of recognition of forest rights under the Scheduled Tribes	The area is not covered under Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights)

	and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Act, 2006.
15.	The vegetation in the RF/ PF areas in the study area, with necessary details, should be given.	The detail of the RF/ PF situated within the study area are given below:-

Name of RF/ PF	Near Village	Distance and Direction (From Lease Boundary)	Vegetation
Reserved Forest	Dhaneshwar	0.505 Km, NNE	Northern Tropical dry deciduous forest, Northern dry mixed deciduous forest.
Reserved Forest	Dhaneshwar	2.25 Km, E	
Reserved Forest	Dasaliya B	0.00 Km, NW & SSW	

16.	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly detailed mitigative measures required, should be worked out with cost implications and submitted.	**Impact on Wildlife and surrounding area** ➢ There is semi-mechanized working in the pits (2 nos.) is at a distance of 1.60 Km (Bad Wala pit, NNW) and 3.3 Km (Tamatar wala pit, NW) from the periphery of the wildlife sanctuary. ➢ The mineral is being transported through a haul road (318m) eventually connected through NH – 76, which is in north extreme side of the lease. Thus, impact on noise and vibration is negligible. ➢ Only controlled and systematic blasting is done for removal of overburden only. ➢ There will be no impact envisaged on ground water as the pit will be above the water table at 405 MSL (75m). **Mitigation Measures** ➢ Around 16.25% of the area is under survived green cover and it is proposed to be enhanced up to 38%. ➢ The proposed expansion will not contribute to any additional pollution load and will not add to any disturbance on the wild life. ➢ As the part of Social Forestry Programme, to increase the green cover in the core zone, it is proposed to provide 1,94,036 saplings in the un-worked area, waste dump and backfilled area. It will act as a barrier for air pollutants as well as noise. It will also help to enhance

		the aesthetic beauty of the area. About Rs. 3.0 Lacs will be spent on the various activity related to plantation, water bodies, awareness programme etc.
17.	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves/ (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary Clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the State Wildlife Department/ Chief Wildlife Warden under the Wildlife (Protection) Act, 1972 and copy furnished.	➢ Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is situated at a distance of 1.0 Km towards south from the mine site. Enclosed as **Annexure – II(C).** ➢ There is no other National Parks, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves (existing) is situated within 10 Km of the mining lease area as depicted from the primary survey and the available secondary data. ➢ Application for online submission of Part – I has been uploaded for necessary clearance from NBWL on dated 30.03.2017. Enclosed as **Annexure – VI.**
18.	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should	A detailed biological study of flora and fauna (core and buffer zone) has been carried out and the outcome has been given in Section – III, Sub-Section – 3.8 of EIA/ EMP Report. ➢ Three Schedules – I and One schedule - II species fauna i.e. Indian Peafowl (I), Gray Mongoose (II), Leopard (I) and Sloth Bear (I) have been reported in the buffer zone. ➢ The conservation Plan for Indian Peafowl, Gray Mongoose, Leopard and Sloth Bear has been prepared by Enkay Enviro Services Pvt. Ltd., Jaipur and the same has been authenticated from the Office of Deputy Conservator of Forests (Wildlife), Mukundra National Park, Kota vide letter no. F ( ) Tech/ DFO/ M.N.P. / 2016 – 17/ 4782 dated 03.05.2017. Enclosed as **Annexure – XIII.**

	be made as part of the project cost.	➢ An amount of Rs. 22.5 Lacs (Rs. 1.0 Lac for Peafowl, Rs. 2.0 Lac for Mongoose, Rs. 12.25 Lac for Leopard and Rs. 7.25 Lac for Sloth Bear) has been earmarked for the conservation of Schedule – I and II species.
19.	Proximity to areas declared as 'Critically Polluted' or the project areas likely to come under the 'Aravalli Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	The lease area does not fall in critically polluted areas under CEPI Guidelines. A certificate has been obtained from the Office of Mining Engineer, Division – I, Bundi (Raj.) stating that the lease does not fall in "Aravali Range" vide letter no. 58 dated 26.02.2016. Enclosed as **Annexure – XI.**
20.	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w. r. t. CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	The lease area does not falls in CRZ.
21.	R & R Plan/ compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/ National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their	As per the RFCTLARR Act' 2013 (Right to Fair Compensation, Transparency in Land Acquisition, Rehabilitation & Resettlement) is not applicable in this project. The project is an expansion project. There is no resettlement or rehabilitation required.

<table>
<tr><td></td><td>requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village including their R&R and socio-economic aspects should be discussed in the report.</td><td></td></tr>
<tr><td>22.</td><td>One season (non-monsoon) [i.e. March – May (Summer Season); October – December (Post – Monsoon season); December – February (Winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica, should be given.</td><td>➢ One – season data i.e. Post - Monsoon (October, November and December' 2015) was collected.
➢ AAQ data includes PM_{10}, $PM_{2.5}$, NO_X, SO_2 and CO including mineralogical composition of PM_{10} particularly for free silica was carried.
➢ The detailed report along with data generated for air pollutants and micro-meteorological parameters are given in Section – III of EIA/ EMP Report at the following pages:-
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Table No.</th><th>Page Nos.</th></tr>
<tr><td>1.</td><td>Land Environment (Soil)</td><td>3.4</td><td>89</td></tr>
<tr><td>2.</td><td>Water Environment</td><td>3.5 & 3.6</td><td>90-93</td></tr>
<tr><td>3.</td><td>Meteorological Data</td><td>3.7</td><td>94</td></tr>
<tr><td>4.</td><td>Ambient Air Quality</td><td>3.12</td><td>97-98</td></tr>
<tr><td>5.</td><td>Noise Level</td><td>3.15</td><td>99-100</td></tr>
<tr><td>6.</td><td>Biological Environment</td><td>3.16 to 3.27</td><td>103-118</td></tr>
<tr><td>7.</td><td>Socio-Economic Environment</td><td>3.28 – 3.31</td><td>121-125</td></tr>
</table></td></tr>
<tr><td></td><td colspan="2">The monitoring station selected is as described under:-
<table>
<tr><th>Sampling</th><th>Distance (Km)</th><th>Direction</th><th>Components</th><th>Remarks</th></tr>
</table></td></tr>
</table>

Location				
Mine Site	--	--	Air, Water, Noise, Soil	--
Gudha	1.5	SSW	Air, Water, Noise, Soil	Downwind
Chainpuriya	1.3	NNW	Air, Water, Noise, Soil	Upwind
Dhaneshwar	1.1	NE	Air, Water, Noise, Soil	Upwind
Tapura Ki Khan	4.2	SE	Air, Water, Noise, Soil	Crosswind
Dasoliya	1.4	SW	Air, Water, Noise, Soil	Downwind
Sutara	1.6	NW	Air, Water, Noise, Soil	Major Habitation
Eru Nadi	1.0	S	Surface Water	--
Dhaneswar Talab	2.1	NNE	Surface Water	--

Mineralogical composition of PM_{10}

S. No.	Parameters	Units	Results
1.	Particulate Matter (PM_{10}); (1140 m^3 sample Volume)	$\mu g/m^3$	31.8
2.	Silica	$\mu g/m^3$	<0.1

The chemical characterization of PM_{10} is given below:-

Location Name: Project Site		Date of Sampling : 24.11.2015	
S. No.	Parameters	Units	Project Site Results
1.	Respirable Particulate Matter (PM_{10})	$\mu g/m^3$	31.8
2.	Calcium as Ca	$\mu g/m^3$	1.12
3.	Magnesium as Mg	$\mu g/m^3$	0.48
4.	Sodium as Na	$\mu g/m^3$	0.04
5.	Free Silica as Si	$\mu g/m^3$	11.24
6.	Potassium as K	$\mu g/m^3$	<0.01
7.	Chromium as Cr	$\mu g/m^3$	<0.01
8.	Aluminum as Al	$\mu g/m^3$	<0.01
9.	Lead as Pb	$\mu g/m^3$	<0.01
10.	Zinc as Zn	$\mu g/m^3$	<0.01
11.	Iron as Fe	$\mu g/m^3$	<0.01
12.	Nickel as Ni	$\mu g/m^3$	<0.01
13.	Barium as Ba	$\mu g/m^3$	<0.01
14.	Cadmium as Cd	$\mu g/m^3$	< 0.01
15.	Mercury as Hg	$\mu g/m^3$	<0.001
16.	Arsenic as As	$\mu g/m^3$	<0.01

Environmental Monitoring Report is enclosed as **Annexure – XXVI.**

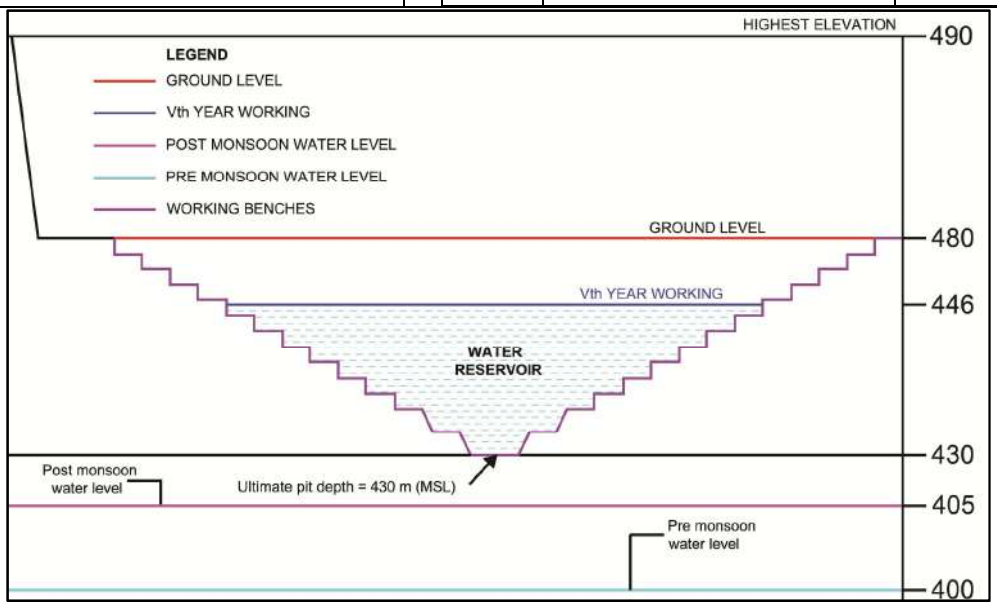
23.	Air quality modeling should be carried out for prediction of impact of the project on	In order to predict the particulate emissions, AERMOD Version 7.1.0 model was used to predict changes in air

<table>
<tr><td></td><td>the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.</td><td>quality i.e., maximum ground level concentration (GLC's) of PM_{10}, $PM_{2.5}$, NO_X and CO due to the existing mining activity. The inputs required for the model are:-
➢ Hourly Meteorological Data.
➢ Source Data.
➢ Receptor Data.
➢ Programme Control Parameters.
The detail has been given in Section - IV, Sub- Section - 4.4 of EIA/ EMP Report.</td></tr>
<tr><td>24.</td><td>The water requirement for the project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated.</td><td>The daily water demand will be 30.0 KLD.
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Existing (KLD)</th><th>After Expansion (KLD)</th><th>Source</th></tr>
<tr><td>1.</td><td>Domestic</td><td>4.0</td><td>13.00</td><td>Tanker</td></tr>
<tr><td>2.</td><td>Dust Suppression</td><td>4.0</td><td>7.0</td><td rowspan="2">Existing Rain Water Pit</td></tr>
<tr><td>3.</td><td>Plantation</td><td>7.0</td><td>10.0</td></tr>
<tr><td colspan="2">Total</td><td>15.00</td><td>30.00</td><td></td></tr>
</table>
Detailed water balance has been given in Section- II, sub-section -2.4.2 of EIA/ EMP Report.</td></tr>
<tr><td>25.</td><td>Necessary Clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.</td><td>➢ NOC from Gram Panchayat for water supply has been obtained from the Office of Gram Panchayat, Dhaneshwar, Panchayat Samiti Talera, Bundi vide letter no. 195 dated 25.05.2016. Enclosed as Annexure – XXVII.
➢ No ground water withdrawal is projected. However, as per the NGT Judgment dated 04.01.2017, application has been made to CGWA for withdrawal of ground water on dated 30.03.2017. Receipt is enclosed as Annexure – VII.</td></tr>
</table>

26.	Description of water conservation measures proposed to be adopted in the project should be given.	To conserve water following measures will be adopted:- ➢ The run - off from the mine site is being collected in channelized garland drains and collected in lowest part of the sump. This water is being utilized for dust suppression, plantation as well as domestic use other than drinking etc. ➢ Atomized water sprinklers will be used to minimize the air borne dust emissions on haul roads. ➢ Rain water harvesting structure will be constructed to augment the water table. ➢ Post-monsoon and Pre-monsoon groundwater level will be monitored regularly.
	Details of rainwater harvesting proposed in the project, if any, should be provided.	➢ About 135.90 ha. excavated pit will be used as a water reservoir. ➢ Over usage of water in plantation and dust suppression is avoided. ➢ Drip irrigation system is used. ➢ Garland drains around dumps are used to channelize the rain water into ponds.
27.	Impact of the project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	**Impact on Surface Water** ➢ There is no perennial surface water existing in the area. ➢ There will be no change in the natural drainage pattern of the area (buffer) due to mining. ➢ Retaining wall around dumps. Garland drains and settling ponds will arrest the wash off and prevent the impact. **Impact on Ground Water** ➢ Ground water table is around 75-80m (400 - 405 MSL) deep and the ultimate pit level (430 MSL) will be much above this level. Thus, water table will not be intersected at any point of mine workings. ➢ The domestic waste water (9.75 KLD) will be channelized into septic tank followed by soak pit. **Mitigation**

<table>
<tr><td></td><td></td><td>➢ Hydro-census will be carried out to monitor the quality, fluctuation etc.
The budget allocated for water pollution measures has been incorporated in Environmental Protection Measures in Section – VIII of EIA/ EMP Report.</td></tr>
<tr><td>28.</td><td>Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydrogeological study should be undertaken and report furnished. The Report inter – alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.</td><td>The detail of the elevation, ground water table and working level is given below:-
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Levels (MSL)</th><th>BGL (m)</th></tr>
<tr><td>1.</td><td>Highest Elevation</td><td>490</td><td>--</td></tr>
<tr><td>2.</td><td>Lowest Elevation</td><td>460</td><td>--</td></tr>
<tr><td>3.</td><td>General Ground Level</td><td>480</td><td>--</td></tr>
<tr><td>4.</td><td>Water Table (Pre-Monsoon)</td><td>400</td><td>80</td></tr>
<tr><td>5.</td><td>Water Table (Post-Monsoon)</td><td>405</td><td>75</td></tr>
<tr><td>6.</td><td>First Year Working Level</td><td>449</td><td>31</td></tr>
<tr><td>7.</td><td>Fifth Year Working Level</td><td>446</td><td>34</td></tr>
<tr><td>8.</td><td>Ultimate Pit Limit</td><td>430</td><td>50</td></tr>
</table>
Hence, ground water table will not be intersected.</td></tr>
<tr><td>29.</td><td>Details of any stream, seasonal or otherwise, passing through the lease area and modification/ diversion proposed, if any, and the impact of the same on the hydrology should be brought out.</td><td>➢ No prominent stream or seasonal nallah is passing through the lease area. However, the rain water will follow the natural course of drainage.
➢ Therefore, no intersection of water table will occur. Hence, project will not cause any significant impact on hydrology.</td></tr>
<tr><td>30.</td><td>Information on site elevation, working depth, groundwater table etc. should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.</td><td>The detail of the elevation, ground water table and working level is given below:-
<table>
<tr><th>S. No.</th><th>Particulars</th><th>Levels (MSL)</th><th>BGL (m)</th></tr>
<tr><td>1.</td><td>Highest Elevation</td><td>490</td><td>--</td></tr>
<tr><td>2.</td><td>Lowest Elevation</td><td>460</td><td>--</td></tr>
<tr><td>3.</td><td>General Ground Level</td><td>480</td><td>--</td></tr>
<tr><td>4.</td><td>Water Table (Pre-Monsoon)</td><td>400</td><td>80</td></tr>
</table></td></tr>
</table>

5.	Water Table (Post-Monsoon)	405	75
6.	First Year Working Level	449	31
7.	Fifth Year Working Level	446	34
8.	Ultimate Pit Limit	430	50



31.	A time bound progressive greenbelt development plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the project. Phase wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are	A time bound progressive greenbelt development plan in tabular form is given below:-

	tolerant to pollution.	

Ecology: Stage Wise Cumulative Plantation

REQUIREMENTS FOR PLANTS FOR AFFORESTATION AND RECLAMATION

Year	Un-worked Area		Waste Dump (Outside)		Inside Dump (Reclaimed Area)		Top Soil Dumps		Total	
	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees
Existing	37.69	37,690	--	--	--	--	--	--	37.69	37,690
I	2.85	2,850	--	--	--	--	--	--	2.85	2,850
II	2.85	2,850	--	--	--	--	--	--	2.85	2,850
III	2.85	2,850	--	--	--	--	--	--	2.85	2,850
IV	2.85	2,850	--	--	--	--	--	--	2.85	2,850
V	2.85	2,850	--	--	--	--	--	--	2.85	2,850
VIth Year Onwards	22.5	22,500	36.3	36,300	83.296	83,296	--	--	142.096	1,42,096
Total	**74.44**	**74,440**	**36.3**	**36,300**	**83.296**	**83,296**	**--**	**--**	**194.036 (38%)**	**1,94,036**

32.	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project proponent shall conduct impact of transportation study as Indian Road Congress Guidelines.	**<u>Impact on local transport Infrastructure</u>** ➢ The existing mining is being undertaken since 1952 therefore well established road network is already present. ➢ The proposed production of mineral per day will be around 833 TPD, requiring 21 trucks/ tippers of 40 tonne capacity per day. ➢ Traffic density will increase by only 2 trucks per hour on the existing road network. ➢ Hence, there will be no insignificant impact due to the mining activities, as the existing road network is adequate to cater the additional load contributed by mining activities. ➢ Project Proponent will contribute for improvement and maintenance of road in consultation with PWD.
33.	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA report.	According to Mines Rule 1955, following temporary infrastructure facilities will be provided:- ➢ Mine Office (On-site); inclusive of vocational training;

		➢ Rest Shelter; ➢ Drinking Water Facilities; ➢ Conservancy Facilities; ➢ First-Aid Facilities.
34.	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	The conceptual post mine land use and reclamation and rehabilitation plan of mined out area is given below:-

S. No.	Description	Land Use (In Ha.)				
		Plantation	Water Body	Public Use	Undisturbed	Total
1	Top Soil Dump	--	--	--	--	--
2	External Waste Dump	36.3	-	--	--	36.3
3	(a) Excavation (Voids)	--	135.90	--	--	135.90
	(b) Excavation (backfilled)	83.296	--	--	--	83.296
4	Road	--	--	14.7	--	14.7
5	Built Up Area	--	--	8.50	--	8.50
6	Township Area	--	--	--	--	--
7	Afforestation	66.94	--	--	--	66.94
8	Mineral Storage	7.50	--	--	--	7.50
9	Processing	--	--	--	--	--
10	Undisturbed Area	--	--	--	137.4149	137.4149
Total		**194.036**	**135.90**	**23.2**	**137.4149**	**490.5509**

The map showing conceptual post mine land use plan and reclamation and rehabilitation of mined out area is enclosed as **Annexure- XXVIII.**

35.	Occupational health impacts of the project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be	Occupational health impacts in Sandstone Mining are very insignificant. No health impact has been reported so far. No evident history related to health problems arising from mining activity is reported. The same was evident in the primary survey. However, following mitigation measures will be adopted as preventive action:- ➢ All employees will be trained, educated and encouraged to follow best and safe work practices. ➢ Personnel Protective Equipments like face mask, earmuffs, ear plugs, gloves, safety goggles and safety

	detailed.	boots are being provided. ➢ Anti-venom will be made available with first-aid box in case of snake bite. ➢ All workers will be subjected to Periodical Medical Examination at least once in a five year and Initial Medical Examination as per Mines Rule 1955 for new induct. ➢ First aid trained personnel's, first aid stations fully equipped as per Mines Rules 1955 and first aid kits will be made available all the time. ➢ Awareness programme regarding the use, maintenance and up-keep of respirators will be conducted on regular basis so that employees are trained to handle the equipment properly. The schedule Pre-Placement Medical Examination and Periodical Medical Examination has been incorporated in the EMP of Section – VIII.
36.	Public health implications of the project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	There will be insignificant impact on public health due to project implications. As the impact zone was identified based on incremental GLC's. It was observed up to 2 km around the mineral transportation routes. To minimize the impact due to dust generation following precautions will be taken:- ➢ The mineral is being transported through a haul road of a distance 318m eventually connected through NH – 76, which is in extreme north side of the lease. ➢ Proper avenue plantation will be carried out along the kuccha road. ➢ The speed of the vehicles will be maintained low (25 Kmph). It will minimize the fugitive dust generation. ➢ However, due to low speed more vehicular exhausts will generate. To control the vehicular exhausts PUC certified vehicles will be used. ➢ The haul roads will be moistened to prevent wake

		formation due to vehicular movement.
37.	Measures of Socio - Economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	➢ After the outcome of the impact assessment the socio-economic parametric importance impact unit is 54.25 (subjective) and its significance and influence to the local community is moderately positive. ➢ During the operational phase, this will provide employment to 300 persons directly and 20 persons indirectly. CSR activity envisaged in this project is given as below along with time frame as follows:- • Activity I :- Year – I, Quarter – I; • Activity II:- Year – I, Quarter – II; • Activity III:- Year – I, Quarter – III;

CORPORATE SOCIAL RESPONSIBILITY

The PP is committed towards CSR as per its applicability under the Companies Act, 2013.

#(In Lacs)

CSR Activities as per the Section VII of the Companies Act 2013	Capital Cost#	Recurring Cost#
Adoption of Medical facilities and health checkup facilities in Dhaneshwar, Govt. Dispensary 1.306 km ENE. ➢ Requiring Doctors/ Nurses/ ANM ➢ Room/ Building Renovation ➢ Green Cover in Centre ➢ Electrical/ Cooler installation ➢ Toilets Renovation and Water Tanks installation ➢ Health Camps ➢ Camp by an Orthopedic doctor for checkup of musculoskeletal movement (for bones, joints, tendons, ligaments, muscles, nerves) ➢ Rain Water Storage structures.	7.0	0.50
Formation of a Self Help Group of women from the villages Kheda , Dasaliya, Dhaneshwar and Sutara for the following. ➢ Sanitation program in Dhaneshwar Habitation. ➢ Financial Assistance for the Women Self Help Groups for maintaining Sanitation & cleanliness of the Roads/ Nalas and Public Facilities. ➢ Provision for *Kachra* Collection Carts/ Cleaning Implements/ Drums etc. for the first year. The details are given below.	7.0	0.50

	Development activites for School Ma Bharti Vidhya Niketan Ucch Prathmik Vidhyalya, Dhaneshwar.	1.0	0.638
	Total	**15.0**	**1.638**

38.	Detailed Environmental Management Plan to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Based on the baseline study and impact prediction, the detailed Environmental Management Plan has been prepared. All the possible environmental issues were addressed properly. The detailed Environmental Management Plan is given in Section – IX. **<u>Impact due to change of land use</u> – Given in TOR point no. – 8.**
39.	Public hearing points raised and commitment of the project proponent on the same along with time bound action plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/ EMP Report of the Project.	Public Hearing has been carried out as per the guidelines of MoEF&CC, New Delhi on dated 11.05.2016 at 11.00 AM. Public Hearing notice was published in two regional news paper :- 1. "Rajasthan Patrika" - 05.04.2016 & 2. "Dainik Bhaskar" – 05.04.2016 3. Venue of Public Hearing – Atal Seva Kendra Headquarter, Gram Panchayat Dhaneshwar, Panchayat Samiti Talera, District – Bundi – 500m, NE. 4. Public Hearing Panel chaired by – ADM – Sh. Ram Jeevan Meena and in the presence of Regional Officer, Kota - Sh. Amit Sharma. 5. Members Present – Around 59 people have attended public hearing including people residing in the lease area. Minutes of Public Hearing are enclosed as **Annexure – XVI.**
40.	Details of litigation pending against the project, if any, with direction/ order passed by any Court of Law against the project should be given.	No litigation is pending against the project and the lease area in any court of law to the best of our knowledge.
41.	The cost of the project (capital cost and recurring cost) as well as the cost towards	

S. No.	Particulars	Capital Cost (In Rs.)	Recurring Cost (In Rs.)

	implementation of EMP should clearly be spelt out.	1. Project Cost: 8.0 Crore; 2. EMP Cost: 15,00,000/- 11,00,000/-; 3. CSR: 15,00,000/- 1,63,800/-
42.	A Disaster Management Plan shall be prepared and included in the EIA/ EMP Report.	A Disaster Management Plan has been given in Section – VI, Sub-section – 6.2 of EIA/ EMP Report.
43.	Benefits of the project if the project is implemented should be spelt out. The benefits of the project shall clearly indicate environmental, social, economic, employment potential etc.	➢ The sandstone extracted will be utilized as a building stone in infrastructural development. ➢ The mining and associated activities in the mineral bearing areas bring about gains in gross domestic product. India is considered a hub for Sandstone supplies and exports with low profit margins. ➢ There is a large gap between the demand and supply of sandstone. The proposed expansion project aims to fill the demand – supply gap through optimum allocation and excavation of natural resources required to meet the demand effectively.
Besides the above, the below mentioned general points are also to be followed:-		
a.	All documents to be properly referenced with index and continuous page numbering.	All documents have been properly referenced with index, page numbers and continuous page numbering.
b.	Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.	The data presented in the report especially in table, along with the period in which the data was collected and the source has been incorporated.
c.	Project Proponent shall enclose all the analysis/ testing reports of water, air, soil, noise etc. using the MoEF&CC/ NABL accredited laboratories. All the original analysis/ testing reports should be available during appraisal of the project.	All the analysis/ testing reports of water, air, soil and noise has been enclosed as **Annexure – XXVI.**
d.	Where the documents provided are in a language other than English, an English translation should be provided.	English translation has been provided for each document of Hindi.

e.	The Questionnaire for Environmental Appraisal of industrial projects as devised by the Ministry shall also be filled and submitted.	The Questionnaire for Environmental Appraisal of mining projects as devised by the Ministry is enclosed as **Annexure – XXIX.**
f.	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.	All instruction mentioned in O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009 are being complied with.
g.	Changes, if any made in the basic scope and project parameters (as submitted in Form-1 and the F.R. for securing the TOR) should be brought to the attention of MoEF with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/ EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	There is no change made in the basic scope and project parameter.
h.	As per the circular no. J-11011/ 618/ 2010-IA.II (I) dated 30.05.2012, you are requested to submit certified report of status of compliance of the conditions stipulated in the environmental clearance for the existing operations of the project by the Regional Office of Ministry of Environment & Forests, if applicable.	It is an existing mine. It is being appraised first time for Environmental Clearance. Hence, not applicable.
i.	The EIA report should also include (i) Surface Plan of the area indicating contours of main topographic features, drainage and mining area, (ii) Geological	**S. No.** / **Plans** / **Annexure No.** 1. Surface Plan — **XXX** 2. Geological Maps and Sections — **XXXI.**

	maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	3. Sections of the mine pit and external dumps — **XXXII**
8.	The prescribed TORs would be valid for a period of three years for submission of the EIA/ EMP Reports, as per the O.M. No. J-11013/ 41/ 2006 – IA. II (I) dated 22.03.2010, 22.08.2014, 08.10.2014 and 07.11.2014.	Noted.
9.	After preparing draft EIA (as per the generic structure prescribed in Appendix – III of EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining Environmental clearance in accordance with the procedure prescribed under the EIA Notification' 2006.	Noted.

1.6 POST - ENVIRONMENTAL CLEARANCE MONITORING

The project management will submit a half yearly compliance report in respect to stipulated prior Environmental Clearance terms and conditions on 1st June and 1st December of each calendar year. The certified compliance report will be displayed on the website of the concerned regulatory authority.

1.7 GENERIC STRUCTURE OF ENVIRONMENTAL IMPACT ASSESSMENT

In terms of EIA Notification of the MoEF&CC, New Delhi dated 14th September' 2006 and its subsequent amendments, the generic structure of the EIA document is as under:-

Table 1.3: Generic Structure of EIA Document

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SECTION - II

INDEX

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2.0 PROJECT DESCRIPTION

2.1 LOCATION OF THE PROJECT

The mine is situated near Village(s) – Dhaneshwar & Sutara, Tehsil & District – Bundi, Rajasthan. The lease area falls within the Survey of India Toposheet no. 45 O/12. The geographical location of the mine is:-

Pillars	Latitude (N)	Longitude (E)
A	25°04'41.8"	75°33'12.8"
A2	25°04'33.4"	75°34'08.3"
A3	25°04'46.1"	75°34'14.1"
A4	25°04'33.8"	75°34'45.3"
A5	25°03'45.9"	75°35'53.7"
N1	25°03'56.5"	75°35'06.1"
O2	25°03'56.5"	75°34'56.0"
P1	25°03'54.2"	75°34'44.6"
Q1	25°03'56.8"	75°34'33.5"
A38	25°04'01.6"	75°34'27.6"
A39	25°03'57.7"	75°33'56.3"
A40	25°04'06.1"	75°33'34.7"
A41	25°04'10.4"	75°32'45.0"
A42	25°04'26.4"	75°32'21.5"

The connectivity to the nearest approach from mine site is given below:-

Table 2.1: Connectivity to the Mine Site

Particulars	Distance & Direction (From the Lease Boundary)
Nearest Railway Station	Kota ~ 28.674 Km, ENE
Nearest Airport	Kota Airport ~ 28.693 km, ENE
Nearest Highway	NH-76, Connecting Kota and Chittorgarh ~ Within the lease area

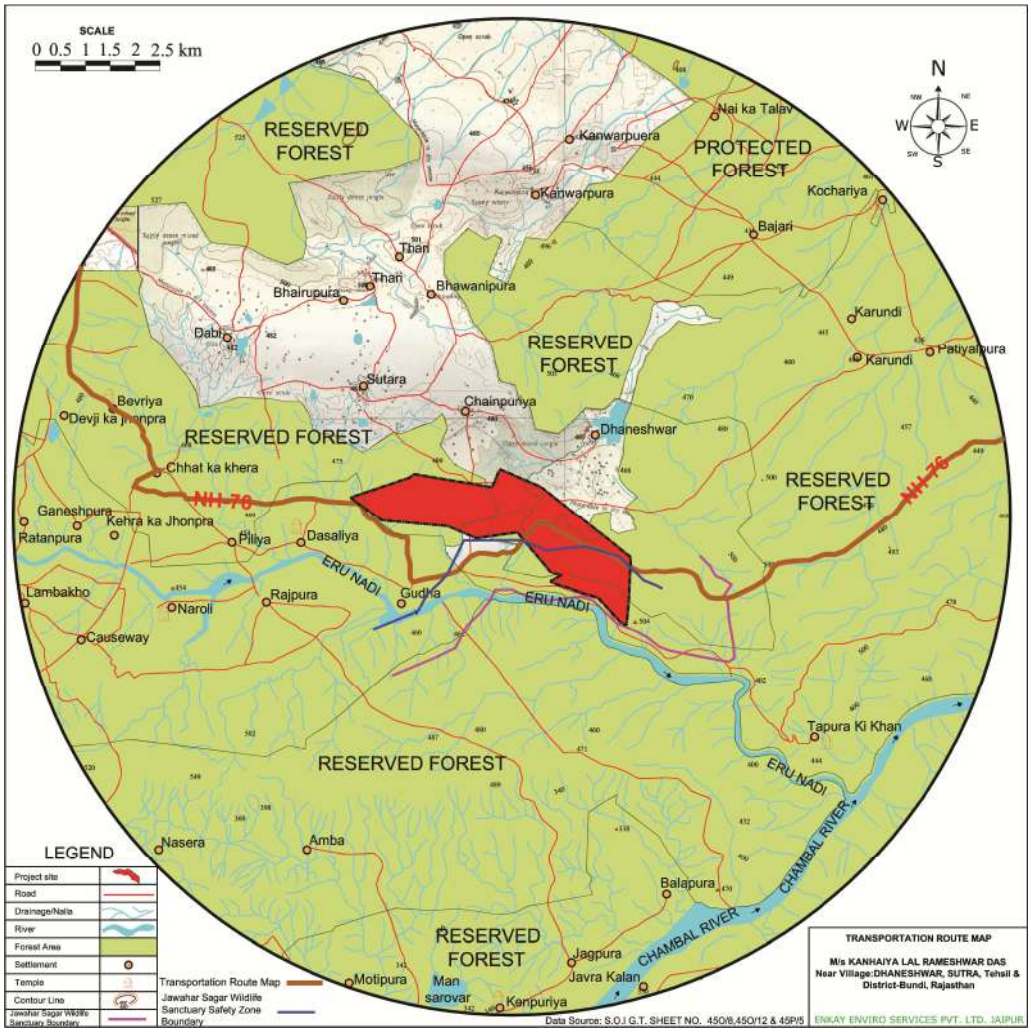


Figure 2.1: Transportation Route Map

2.2 NEED OF THE PROJECT

The sandstone extracted will be utilized as a building stone in infrastructural development. Sandstone is resistant to saline air, which make it perfect for exterior cladding in sea-shore buildings. They are also acid and alkali resistant. So, they are used in chemical industry for flooring, wall-covering. Sandstone honed tiles and dressed stones became popular for exterior applications. The main advantage of using these stones has been negligible maintenance.

A total of 300 people will be employed through the project and thus will create long term (Life of the mine = 42.80 Years) and stable employment for local population. Applicant will pay royalty for the sandstone to be produced from the mine, sales tax and other applicable taxes, thereby contributing to the regional revenue. The public revenue will further be put in public expenditure. As mentioned by the Rajasthan State Industrial Development and

Investment Corporation Ltd., the Rajasthan natural stone industry alone employs about half a million workers in the region. The mining and associated activities in the mineral bearing areas bring about gains in gross domestic product. India is considered a hub for Sandstone supplies and exports with low profit margins.

2.3 AMENITIES/ FACILITIES

The site services like rest room, shelter, first-aid facility, mines office etc. will be provided to workers at the mine site during operational phase. As per the guidelines no permanent structure will be constructed within the lease area, interrupting the mining activities. Temporary structures/ tents will be used as rest room for mine workers. In the rest room drinking water and first aid facility will be provided.

However, the nearest basic amenities/ facilities available within 10km study area and is given Table 2.2.

Table 2.2: Basic Amenities/ Facilities within the Study Area

S. No.	Nearest Amenities	Distance & Direction (From Lease Boundary)
1.	Police Station	Dabi – 3.849 Km, WNW
2.	Post Office	Dabi – 3.849 Km, WNW
3.	Educational Facilities	Primary School, Dhaneshwar - 1.342 Km, ENE; Primary School, Sutara - 2.575 Km, NW
4.	Medical Facilities	Dabi - 5.093 Km, NW Dhaneshwar - 1.306 Km, ENE

2.4 INFRASTRUCTURE (PROJECT REQUIREMENTS)

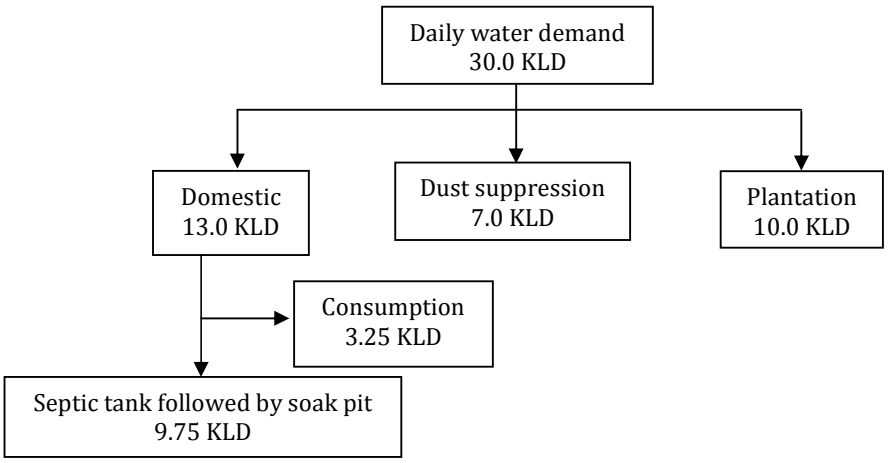
2.4.1 POWER

Electric power demand will be 550kVA (after expansion), which will be met from Dabi sub-station of State Electricity Board.

2.4.2 NEAREST SOURCE OF WATER SUPPLY AND DEMAND

The daily water demand will be 30.0 KLD, out of which 13.0 KLD water will be used for domestic purpose, 17.0 KLD for dust suppression & Plantation. The water demand for domestic purpose will be met through water tanker supply from nearby villages and for dust suppression and plantation, will be met from existing water reservoir pit.

WATER BALANCE



2.4.3 MANPOWER REQUIREMENTS

Total employment in the mining lease will be around 300 people. The local villagers will be preferred for employment. Technical personnel will be employed on the basis of their educational qualification and their availability. Semi-skilled and un-skilled workers will be hired from the nearby villages. The list of technical and non-technical staff is presented in Table 2.3.

Table 2.3: Man Power (Technical and Non-Technical) Requirement

S. No.	Category	No. of Persons		Remark
		Existing	Expansion	
1.	Mining Manager	1	1	Employment to local people.
2.	Mines Foreman	2	2	
3.	Mines Mate	2	2	
4.	Supervisor	2	2	
5.	Semi-Skilled worker	60	150	
6.	Unskilled Worker	51	140	
7.	Watchman	2	3	
Total		**120**	**300**	

2.4.4 LAND OWNERSHIP/ OCCUPANCY

Land	Area (Ha.)	Ownership
Govt. Waste Land	161.2109	Government
Private Khatedari Land	150	Individual
Diversified forest Land	104.34	Government
Grazing/ Pasture Land	75.0	Government

Map showing land use of the lease area is enclosed as **Annexure – XXX.**

2.4.5 LAND USE PATTERN

The land use for mining and allied purposes is given in Table 2.4.

Table 2.4: Land Use Pattern

S. No.	Particulars	Present Land Use (ha.)	At the End of 5th year (ha.)	At the End of Life of Mine (ha.)
1.	Pit area	83.46	85.86	83.296 ha. (Reclaimed & Rehabilitated by Plantation). 135.90 ha. Water Reservoir
2.	Dump Area	36.3	36.3	36.3 (Rehabilitated by Plantation)
3.	Road	15.24	16.2	14.7 (Public Use)
4.	Infrastructure	7.60	8.0	8.50 (Public Use)
5.	Mineral Storage	3.28	4.50	7.50 (Plantation)
6.	Plantation	37.69	51.94	66.94
7.	Un-worked	306.9809	287.7509	137.4149
Total		**490.5509**	**490.5509**	**490.5509**
Above mentioned land use figures may change after sanction of partial surrendered lease area.				

The Conceptual Plan is enclosed as **Annexure – XXVIII.**

2.5 GEOLOGY

2.5.1 REGIONAL GEOLOGY

Geologically, most of the part of the Bundi district is occupied by rocks of Vindhyan formation which forms the part of Great Vindhyan Basin extending from Rohtash in Bihar to Chittorgarh area in Rajasthan. Rocks of Vindhyan range in the area are divided into Lower Vindhyan and upper Vindhyan. Lower Vindhyan comprises of Jahazpur and Upper Vindhyan includes Kaimur, Rewa and Bhander groups. Lower Vindhyan i.e. Jahazpur is separated from Kaimur group by conglomerate horizon which marks the break in sedimentation before deposition of Kaimr i.e. unconformity. Kaimur, Rewa and Bhander series of upper vindhyan are also separated from each other by unconformity. Jahazpur group of Lower Vindhyan is generally calcareous. Kaimur and Rewa is generally arenceous while Bhander is arenaceous and calcareous in nature.

Table 2.5: General Stratigraphic Succession

Super Groups	Groups	Formations
Recent to Sub-Recent		Soil Alluvium
Vindhyan Super Group	Bhander Series	Sandstone, Limestone & Shale

	Rewa Series	Shale & Sandstone
	Kaimur Series	Shale & Sandstone
……Unconformity……		
	Jahazpur	Dolomite, Phyllite & Quartzite
Bhilwara Super Group	Hindoli & Mangalwar Complex	Shale, Slate/ Phyllite, Quartzite, Dolomites and limestone

(Source: - Modified and generalized lithographic sequence after G. S. I. (1981))

2.5.2 LOCAL GEOLOGY

The rocks of the area belong to the Vindhyan group. Main rock type in the lease area is lower Bhander Sandstone (Bundi Hill Sandstone). In the area sandstone is overlain in the alluvial soil, murram and weathered sandstone. Lithographic sequence observed in the area is as given below:-

Table 2.6: Local Geology

Alluvium Soil	0.5 – 3.0m
Murram and Weathered Sandstone	1.0 – 3.0m
Hard and Compact Sandstone	4.0 – 20.0m
Spittable Sandstone	1.0 – 10.0m

The map showing geology of the lease area is enclosed as **Annexure – XXXI.**

2.5.3 GEOLOGICAL AND MINEABLE RESERVES AS PER UNFC CLASSIFICATION

S. No.	Category	Reserves (Tonnes)
1.	Geological Reserves	1,76,90,361.25
2.	Mineable Reserves	1,07,02,391.25
3.	Targeted production	2,50,000 TPA
4.	Life of Mine	42.80 Years

***Note: - No change as the same has been estimated leaving a safety zone 1.0km linear from the Sanctuary.**

2.5.4 PROPOSED RATE OF PRODUCTION WHEN MINE IS FULLY DEVELOPED AND EXPECTED LIFE OF THE MINE

$$\text{Life of Mine} = \frac{\text{Mineable Reserves}}{\text{Production Capacity}} = \frac{1,07,02,391.25}{2,50,000} = 42.80 \text{ Years}$$

2.6 MINING

The mining is fully equipped with modern machineries and equipments for mining and overburden handling. Mining operations are being carried out by opencast Semi-Mechanized method.

2.6.1 METHOD OF WORKING

The salient features of mode of working as per approved Modified Mining Plan are:-

- The mining will be carried out by Open Cast Semi - Mechanized method.
- The height and width of the bench will be maintained at 6.0 m.
- Top soil of 0.5 – 3.0m is scraped through excavator and stacked at designated places.
- Overburden is handled by excavator – dumper combination.
- Mining of sandstone starts with separating the layer from natural bondage by chisel and hammering along cleavage plane/ weaker zone.
- Line drilling of hole is also used to split massive sandstone rocks.
- Mineral will be transported to the processing plant. It will be cut into sizes as per market demand and packed and transported outside the end user's.

2.6.2 EXTENT OF MECHANIZATION

The detail of equipments proposed to be used in mining operation is as listed below:-

Table 2.7: List of Equipments

S. No.	Name of Machinery	Capacity	Nos.
1	Compressor	Atlas	4
2	Chain Pulley	--	1
3	Crane (Coles)	--	1
4	Diesel Power Screw Compressor	--	1
5	Drifter	--	1
6	Drill Machine	--	1
7	Dumper	--	1
8	Hydraulic crane	Escort	17
9	Jack Hammer Machine	--	8
10	JCB	--	4
11	Rock Drill Machine	--	1
12	Excavator	Tata Hitachi Ex - 110	1
13	Excavator	Tata Hitachi Ex - 200	3
14	Tractor Crane	--	1
15	Tractor	--	5

16	Water Compressor	--	1
17	Water Pump	--	3
18	Water Tanker	--	3
19	Wagon Drilling Machine	--	4

2.6.3 YEAR-WISE DEVELOPMENT IN NEXT FIVE YEARS

The year wise development of mines for the plan period is as given below:-

Table 2.8: Year Wise Development in Next two Years

Year	Production (Tonnes)	Production (m^3)	O.B/ Waste (m^3)	OB : Mineral ratio (M^3 : Tonne)
2015-16	1,50,000	60,120	1,48,800	1.03:1
2016-17	2,50,000	1,00,200	2,64,000	
Total	**4,00,000**	**1,60,320**	**4,12,800**	

The year wise development plan is enclosed as **Annexure – XXXII.**

2.6.4 BLASTING

Blasting will be carried out in overburden only. These faces will be kept in advance so that there is no mixing with mineral at the time of blasting.

2.6.4.1 Broad Blasting Parameters

Blasting is carried out in upper strata which consist of hard rock. Detonating fuse and delay detonators will be used for sequential blasting. Controlled and Muffles blasting will be carried out.

Table 2.9: Broad Blasting Parameters

Burden	:	1.8 m
Spacing	:	4.0 m
Depth of Hole	:	6.0 m
Diameter of Hole	:	100 mm
O.B. per day	:	417.46m^3
Yield per day	:	43.20 m^3
No. of holes required per day	:	10 No's

2.6.4.2 Type of Explosive

Only Class 2 & 6 explosive will be used for priming, column charge, detonator and fuse etc. Two types of explosives are used as mentioned below:-

Table 2.10: Type of Explosives

Column Charge	:	ANFO (80%)
Booster Charge	:	Slurry Explosive (20%)
Amount of Charge per hole	:	13.50 Kg
Booster Slurry Explosive (20%)	:	2.50 Kg
Column Charge – ANFO (80%)	:	11.0 Kg
Yield per hole	:	108.0 Tonne
Expected powder factor	:	8.0 tonne

2.6.4.3 Storage of Explosive

Explosive will be used for blasting. For production capacity of 1,050 tonne per day presuming powder factor of 8.0kg daily requirement will be 132.0 kg. Two licensed magazine each of 2,000 kg and 500 kg capacity exists at site. Enclosed as **Annexure – XV.**

2.7 CONCEPTUAL MINING PLAN

Ground water table is around 75m to 80m below from the general ground level of 480 MSL. It fluctuates around 5m in Pre-Monsoon and Post-Monsoon season. Thus, during pre-monsoon the level of ground water table is 400 MSL and in post-monsoon 405 MSL. Ultimate working level will be 430 MSL as per Modified Mining Plan. The ground water table will not be encountered in the workings.

2.7.1 FINAL SLOPE ANGLE TO BE ADOPTED

Considering the stability of rocks, the final slope angle or ultimate pit slope is proposed as 45°. This slope angle will remain quite safe for these deposits.

2.7.2 ULTIMATE CAPACITY OF DUMPS

The mining activities will cause permanent physical changes in the topography of the mine lease. The production will be 2.5 Lacs TPA of sandstone, in-turn generating 4,12,800 m^3 of overburden and 15,500 m^3 of soil in next five year. Entire topsoil/ waste/ OB generated during the five years plan and conceptual plan will be used for backfilling and reclaimed & rehabilitated by plantation.

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SECTION - III

INDEX

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3.0 DESCRIPTION OF ENVIRONMENT

3.1 INTRODUCTION

EIA process requires the primary baseline data collection to know the information on the biophysical, social and economic settings of the mine site. The criteria of the baseline data collection was based on the impact zone which was expected to be around 2-3 Km. The stations were considered based on their sensitivity by considering the close proximity with the sensitive zones like reserve forests, expected high pollutant concentration zones and transportation route etc. The baseline data have been collected as per CPCB guidelines in the month of October, November and December' 2015.

The following criteria were adopted while selecting the monitoring locations:-

- One location on the upwind depending upon the wind profile/ pattern.
- Two locations on the downwind side depending upon wind pattern (predominant directions).
- One location covering the sensitive areas within the vicinity.
- One location covering the transportation convergences route.
- One location covering the major habitation.
- One location on the downwind direction where the max GLC's are falling.

The monitoring station selected is as described under:-

Table 3.1: List of Monitoring Stations

Sampling Location	Distance (Km)	Direction	Components	Remarks
Mine Site	--	--	Air, Water, Noise, Soil	--
Gudha	1.5	SSW	Air, Water, Noise, Soil	Downwind
Chainpuriya	1.3	NNW	Air, Water, Noise, Soil	Upwind
Dhaneshwar	1.1	NE	Air, Water, Noise, Soil	Upwind
Tapura Ki Khan	4.2	SE	Air, Water, Noise, Soil	Crosswind
Dasoliya	1.4	SW	Air, Water, Noise, Soil	Downwind
Sutara	1.6	NW	Air, Water, Noise, Soil	Major Habitation
Eru Nadi	1.0	S	Surface Water	--
Dhaneswar Talab	2.1	NNE	Surface Water	--

Baseline data generation was carried out by M/s Vision Labs, Hyderabad recognized by MoEF, GOI and NABL Accredited laboratory. Environmental Monitoring Report is enclosed as **Annexure – XXVI.**

3.2 ENVIRONMENTAL SETTING

S. No.	Particulars	Details
1.	Name of the Project	Sandstone Mine
2.	Location	Village(s) - Dhaneshwar and Sutara, Tehsil & Bundi, Rajasthan.
3.	Lease Area	490.5509 ha.
4.	Land Type	Govt. Waste land – 161.2109 Ha; Private Khatedari Land – 150.0 Ha; Diversified Forest land – 104.34 ha. & Grazing/ Pasture Land – 75.0 Ha.
5.	Latitude & Longitude	25°02' 53.10" to 25°04' 40.78'' N; 75°32' 29.21''E to 75°36' 01.12'' E
6.	Toposheet No.	45 O/12
7.	Elevation	Lowest - 460 MSL; Highest - 490 MSL
8.	Nearest Habitation	Dhaneshwar ~ 1.24 km NE
9.	Nearest Major Town	Dabi ~ 3.849 Km, WNW
10.	Nearest Highway	NH-76, Connecting Kota and Chittorgarh ~ Within the lease area
11.	Nearest Railway Station	Kota ~ 28.674 Km, ENE
12.	Nearest Airport	Kota Airport ~ 28.693 km, ENE
13.	Nearest Tourist Places	None within 10 km radius
14.	Defense Installations	None within 10 km radius.
15.	Archaeological Sites	None within 10 km radius
16.	Eco-sensitive Zones	Jawahar Sagar Wildlife Sanctuary/ Mukundra Hills Tiger Reserve having common boundary is at a distance of 1.0 km from mine boundary. Enclosed as **Annexure – II (C).** As per Hon'ble Supreme Court directives, lessee will not undertake any mining activity in the 1.0 Km radius of the Sanctuary.
17.	Reserved/ Protected Forest	**S. No.** / **Particulars** / **Distance (Km) (From Lease Boundary)** / **Direction** 1. Dhaneshwar Reserved Forest – 0.505 – NNE 2. Dhaneshwar Reserved Forest – 2.25 – E 3. Dasaliya B Reserved Forest – 0.00 – NW & SSW ***Source: - All distances are taken with respect to Google Earth.***
18.	Nearest Streams/ Rivers/ Water Bodies	**S. No.** / **Water Bodies** / **Distance (Km) (From Lease Boundary)** / **Direction** 1. Eru Nadi – 2.786 – S 2. Chambal River – 8.897 – SSE ***Source: - All distances are taken with respect to Google Earth.***

19	Public Building Places	

Name	Near Village	Distance and Direction (From Lease Boundary)
Medical Facility		
Govt. Hospital	Dabi	5.093 km, NW
Govt. Dispensary	Dhaneshwar	1.306 km, ENE
Govt. Dispensary	Sutra	2.502 km NW
Temples		
Baba Ramdev Temple	Dhaneshwar	1.286 km, ENE
Shivalya Temple	Sutra	2.447 km NW
Ambey Rani Mata Ka Madir	Dhaneshwar	1.314 km ENE
Schools		
Govt. School	Dhaneshwar	1.342km ENE
Ma Bharti Vidhya Niketan	Dhaneshwar	within ENE Lease Boundary
Govt. School	Sutra	2.575 km NW

Source: - All distances are taken with respect to Google Earth.

19.	Other Industries/ Mines	None within 10.0 km radius.
20.	Seismic Zone	Zone – II as per IS – 1893 (Part-1) - 2002

3.3 COLLECTION OF BASELINE DATA

Environmental data has been collected in relation to existing mine for:-

1. Land Environment
2. Water Environment
3. Air Environment
4. Noise Environment
5. Biological Environment
6. Socio-Economic Environment

The topographical map showing monitoring locations for collection of primary data of soil, air, water & noise is enclosed as **Annexure – XXIV.**

3.4 LAND ENVIRONMENT

Object of the study is to provide a baseline status of the study area covering 10 km radius around the existing mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future.

3.4.1 SOURCE OF INFORMATION

The data in this work is collected from the following sources:-

1. Topographic data - From Survey of India toposheet.
2. Remotely Sensed Data - From IRS P6 – LISS IV Data.
3. Ground Truthing of the area

All the data used in this work have been supplied by National Remote Sensing Centre, Hyderabad, India.

3.4.2 DATA BASE

The detail of the primary data in the form of digital data on LISS-IV for interpretation and analysis is given below in Table 3.2. The mask of the entire project area including the influence zone was generated from the IRS-P6 LISS-IV.

Table 3.2: Database used for LULC Mapping

S. No.	Satellite	Sensor	Date type & Bands
1.	IRS-P6	LISS-IV	Digital (1, 2, 3)

3.4.3 LAND USE/ LAND COVER AREA

Classification scheme adopted for the preparation of land use/ land cover maps on 1:25,000 scales. Land use/ Land cover classification standardized by NRSC/ ISRO. The land use/ land cover area of the study area. Map showing land use of the study area is enclosed as **Annexure – XXV.** The following land use classes have been observed in the study area:-

Table 3.3: LULC Classes

S. No.	LULC Class	Area (Ha.)	Area (%)
1	Lease Area	490.5509	1.55
2	Built-up-Residential	288.64	0.72
3	Built-up-Transportation-Road	192.03	0.48
4	Other Mining Area	2356.91	5.90
5	Agriculture Land	5034.32	12.61
6	Fallow Land	5098.08	12.77
7	Plantation	8.95	0.02
8	Forest-Reserved Forest	22780.44	57.05
9	Forest Land	2414.15	6.05
10	Barren Land/ Hilly	41.33	0.10
11	Water body-Pond	156.58	0.39
12	Water body-River	939.46	2.35
	Total	**39928.89**	**100.00**

Agriculture: It is spreads over 12.61% (5,034.32 ha.) of the geographical area. However, the agriculture in this area is primarily rain fed and also irrigation-based agriculture is practiced in this region.

Barren land: For the present study, this land class is found to occupy nearly 0.10% (41.33 ha.) of the area of interest.

Forest: This class occupies nearly 6.05% (2,414.15 ha.) of the study area.

3.4.4 SOIL ENVIRONMENT

The objectives of the soil sampling are:-

- To determine the baseline soil characteristics of the study area;
- To determine the impact of existing as well as proposed activity on soil characteristics and;
- To determine the impact on soil more importantly with agriculture production point of view.

The soil analysis results are given below:-

Table 3.4: Soil Analysis

S. No.	Parameters		Units	Mine Site	Gudha	Chainpuriya	Dhaneshwar	Tapura Ki Khan	Dasoliya	Sutara
	Date of Sampling			19.12.2015	19.12.2015	20.12.2015	18.12.2015	19.12.2015	18.12.2015	19.12.2015
1	Texture		-	Sandy Clay	Clay	Sandy Clay	Sandy Clay	Sandy Clay	Clay	Silty Clay
2.	Particle size Distributions	Sand	%	25	22	32	32	28	19	16
		Silt	%	18	26	15	15	20	28	45
		Clay	%	57	52	53	53	52	53	39
3.	Appearance		--	Brown Color						
4.	Sodium as Na		mg/100grm	1.62	1.33	1.4	2.12	1.65	1.48	1.12
5.	pH (10% Slurry) @ 25 °C		-	7.81	7.49	7.65	7.65	7.29	7.01	8.06
6.	Conductivity @25 °C		µmhos/cm	154	136	126	115	128	137	169
7.	Bulk density		gram/cc	1.43	1.35	1.44	1.45	1.39	1.29	1.19
8.	Porosity		% v/v	36	56	38	28	29	38	52
9.	Total Organic Matter (TOM)		%	3.28	4.24	2.92	2.98	3.46	3.19	4.39
10.	Nitrogen as N		mg/100grm	212	312	256	265	278	321	368
11.	Potassium as K		mg/100grm	119	165	121	116	124	164	187
12.	Phosphorus as P		mg/100grm	52	88	56	69	75	88	97
13.	Zinc as Zn		mg/kg	3.64	4.56	2.44	4.06	3.98	5.12	5.89
14.	Cadmium as Cd		mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
15.	Chlorides as Cl		mg/100grm	1.54	1.22	1.16	1.26	1.32	1.76	1.42
16.	Alkali Metals		mg/kg	2.1	1.6	1.8	1.6	2.2	1.5	1.9
17.	Permeability		Cm/h	5.6	4.2	5.8	5.5	5.3	4.6	4.0
18.	Water holding capacity		%	27	38	21	21.6	24.2	45.6	59.9
19.	Copper as Cu		mg/kg	0.18	0.22	0.11	0.18	0.21	0.32	0.41
20.	Iron as Fe		mg/kg	0.11	0.27	0.28	0.11	0.13	0.18	0.28
21.	Lithium		mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22.	Moisture Content		%	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
23.	Boron as B		mg/kg	0.068	0.29	0.12	0.16	0.18	0.25	0.33

3.5 WATER ENVIRONMENT

The purpose of the study is to:-

1. Assess the water quality characteristics for critical parameters;
2. Evaluate the impacts on agriculture productivity, habitat conditions, recreational resources and aesthetics of the vicinity; and
3. Predict the likely impacts on water quality due to the mining and other related activities.

3.5.1 WATER SAMPLE ANALYSIS

Seven ground water samples and two surface water samples were collected as grab samples and were analyzed for various parameters as per the procedures specified in "Standard Methods for the Examination of Water and Wastewater" published by American Public Health Association (APHA). Different physico-chemical parameters of surface and ground water during study period were compared with standard at each monitoring stations and shown in the Table 3.5 and 3.6.

Table 3.5: Surface Water Analysis

S. No.	Parameter	Limits as per IS: 2296 Class C	Units	Eru Nadi	Dhanwshwar Talab
1	pH @ 25 °C	6.5 – 8.5	-	7.96	8.11
2	Color (Hazen units)	< 300	Hazen	03	06
3	Taste	--	-	Agreeable	Agreeable
4	Odor	--	-	Unobjectionable	Unobjectionable
5	Conductivity @ 25 °C	--	µS/cm	498	292
6	Turbidity (NTU)	--	NTU	3.6	4.6
7	Total Dissolve solids	< 1500	Mg/ l	318	186
8	Total Hardness as $CaCO_3$	--	Mg/ l	210	120
9	Total Alkalinity	--	Mg/ l	150	100
10	Calcium as Ca	--	Mg/ l	44.0	28.0
11	Magnesium as Mg	--	Mg/ l	24.0	12.0
12	Residual Chlorine	--	Mg/ l	<0.02	<0.02
13	Boron	--	Mg/ l	<0.001	<0.001
14	Chloride as Cl	< 600	Mg/ l	40.0	20.0
15	Sulphate as SO_4	< 400	Mg/ l	32.3	10.4
16	Fluorides as F^-	< 1.5	Mg/ l	0.3	0.2
17	Nitrates as NO_3	< 50	Mg/ l	5.4	3.7
18	Phenolic Compounds	< 0.005	Mg/ l	<0.001	<0.001

19	Cyanide as CN	< 0.05	Mg/ l	<0.001	<0.001
20	Anionic Detergents	< 1	Mg/ l	<0.001	0.062
21	Mineral Oil	--	Mg/ l	<0.01	<0.01
22	Cadmium as Cd	< 0.01	Mg/ l	<0.001	<0.001
23	Arsenic as As	< 0.2	Mg/ l	<0.001	<0.001
24	Copper as Cu	< 1.5	Mg/ l	0.03	0.006
25	Lead as Pb	< 0.1	Mg/ l	<0.001	<0.001
26	Manganese as Mn	--	Mg/ l	<0.001	<0.001
27	Iron as Fe	< 50	Mg/ l	0.26	0.36
28	Chromium as Cr^{6+}	< 0.05	Mg/ l	<0.001	<0.001
29	Zinc as Zn	< 15	Mg/ l	0.041	0.052
30	Aluminum as Al	--	Mg/ l	<0.001	< 0.001
31	Mercury as Hg	--	Mg/ l	<0.0002	< 0.0001
32	Selenium as Se	< 0.05	Mg/ l	< 0.001	< 0.001
33	Dissolved Oxygen	>4	Mg/ l	5.6	5.4
34	Biochemical Oxygen Demand (5 days at 20˚C)	< 3	Mg/ l	03	06
35	Chemical Oxygen Demand	--	Mg/ l	06	18
36	E-coli (Nos/100 ml)	--	cfu/100ml	Absent	Absent
37	Coliform Organisms	< 5000	MPN/100 ml	680	140

Table 3.6: Ground Water Analysis

S. No.	Parameter	Units	Drinking Water Standard IS:10500 (2012)		Mine Site	Gudha	Chainpuriya	Dhaneshwar	Tapura Ki Khan	Dasoliya	Sutara
			Requirement (Desirable Limits)	Permissible Limits in the Absence of Alternate Source							
	Date of Sampling										
1	pH	-	6.5 – 8.5	NR	7.04	6.85	7.26	6.84	6.79	7.06	7.24
2	Color	Hazen	< 5	< 25	<01	<01	<01	<01	<01	<01	<01
3	Taste	-	Agreeable	Agreeable	Agreeable						
4	Odor	-	Unobjectionable	-	Unobjectionable						
5	Conductivity	µS/cm	--	--	872	356	1426	692	436	818	898
6	Turbidity	NTU	< 5	< 10	1.1	1.3	1.2	1.1	1.0	1.1	1.1
7	Total Dissolve Solids	Mg/ l	< 500	< 2000	554	228	917	438	279	524	572
8	TH as $CaCO_3$	Mg/ l	< 300	< 600	220	120	540	210	150	260	340
9	Total Alkalinity	Mg/ l	< 200	< 600	290	70	290	200	100	180	270
10	Calcium as Ca	Mg/ l	< 75	< 200	48.0	24.0	120.0	48.0	36.0	64.0	92.0
11	Magnesium as Mg	Mg/ l	< 30	< 100	24.0	14.4	57.6	21.6	14.4	24.0	26.4
12	Residual Chlorine	Mg/ l	< 0.2	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
13	Boron	Mg/ l	< 1	< 5	0.028	0.021	0.028	0.029	0.015	0.021	0.062
14	Chloride as Cl	Mg/ l	< 250	< 1000	60.0	35.0	190.1	55.0	40.0	90.0	65.0
15	Sulphate as SO_4	Mg/ l	< 200	< 400	40.8	44.8	130.8	50.4	45.7	80.8	65.7
16	Fluorides as F-	Mg/ l	< 1.0	< 1.5	0.7	0.3	0.2	0.5	0.3	0.6	0.3
17	Nitrates as NO_3	Mg/ l	< 45	< 100	4.2	6.9	11.3	9.4	8.1	10.7	11.2
18	Phenolic Compounds	Mg/ l	< 0.001	< 0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Cyanide as CN	Mg/ l	< 0.05	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Anionic Detergents	Mg/ l	< 0.2	< 1.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Mineral Oil	Mg/ l	< 0.01	< 0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cadmium as Cd	Mg/ l	< 0.01	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Arsenic as As	Mg/ l	< 0.01	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

24	Copper as Cu	Mg/ l	< 0.05	< 1.5	0.043	0.025	0.035	0.049	0.029	0.037	0.025
25	Lead as Pb	Mg/ l	< 0.05	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
26	Manganese as Mn	Mg/ l	< 0.1	< 0.3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Iron as Fe	Mg/ l	< 0.3	< 1.0	0.16	0.18	0.24	0.25	0.12	0.13	0.14
28	Chromium as Cr^{6+}	Mg/ l	< 0.05	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
29	Zinc as Zn	Mg/ l	< 5	< 15	0.069	0.046	0.072	0.059	0.025	0.029	0.036
30	Aluminum as Al	Mg/ l	< 0.03	< 0.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
31	Mercury as Hg	Mg/ l	< 0.001	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
32	Selenium as Se	Mg/ l	< 0.01	NR	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
33	E. coli	No./100ml	Absent	-	Not detected						
34	Coliform Organisms	MPN/100 ml	<10	--	Not detected						

3.5.2 RESULT

Surface Water

The results obtained for the collected samples indicate that the surface water qualities were found to be well within the prescribed standards Limits (Class C).

Ground Water

The analysis results indicate that pH and conductivity of the groundwater was found to be in range of 6.79 – 7.26 and 356 - 1426 µS/cm. The TDS were found to be in the range of 228 - 917 Mg/l. Other parameters like chlorides and sulphate were observed to be well within the prescribed limits. The physico – chemical analysis for the parameters were also within the permissible limits as per the standards as per IS: 10500. The water quality is potable in nature.

3.6 AIR ENVIRONMENT

The prime objective of the baseline air monitoring was to evaluate the existing air quality of the area. This will also be useful for assessing the conformity to standards of the ambient air quality during the operation of the mine.

The baseline status of the air quality has been assessed though a scientifically designed ambient air quality monitoring network based on the following considerations:-

- Meteorological conditions on synoptic scale;
- Topography of the study area;
- Representatives of regional background air quality for obtaining baseline status; and
- Representatives of likely impact areas.

3.6.1 MICRO-METEOROLOGICAL DATA

An auto weather monitoring stations was installed at Mine Site during the study period to record various meteorological parameters on hourly basis to understand the wind pattern, temperature variation and relative humidity variation. The hourly meteorological data recorded is enclosed as **Annexure – XXVI.**

Table 3.7: Micro-Meteorological Data

Month	Temperature (˚C)		Relative Humidity (%)		Rainfall (mm)		Wind Speed (mile/h)	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
October' 15	41.4	15.7	81.4	7.7	0	0	10	<1.0
November' 15	32.6	13.4	69.5	6.8	0	0	9	<1.0
December' 15	36.4	8.6	87.6	6.8	0	0	8	< 1.0

3.6.2 WIND ROSE DIAGRAM

Wind rose is the diagrammatic representation of wind speed in a specified direction with its arms representing sixteen directions. Each arm gives a clear frequency distribution of wind speed in a particular direction for a given period of time. The wind rose diagram for the study period was developed & presented in Figure 3.1.

Table 3.8: Summary of the Wind Pattern

S. No.	Wind Direction	0.5-2.1 Speed m/s	>= 2.1 Speed m/s	Total
1.	N	58	10	68
2.	NNE	43	9	52
3.	NE	12	2	14
4.	ENE	10	2	12
5.	E	4	1	5
6.	ESE	9	2	11
7.	SE	17	2	19
8.	SSE	29	1	30
9.	S	25	4	29
10.	SSW	40	7	47
11.	SW	29	10	39
12.	WSW	26	4	30
13.	W	11	4	15
14.	WNW	15	4	19
15.	NW	19	3	22
16.	NNW	24	3	27
Sub-Total				439
Calms				1768
Missing/Incomplete				1
Total				2208

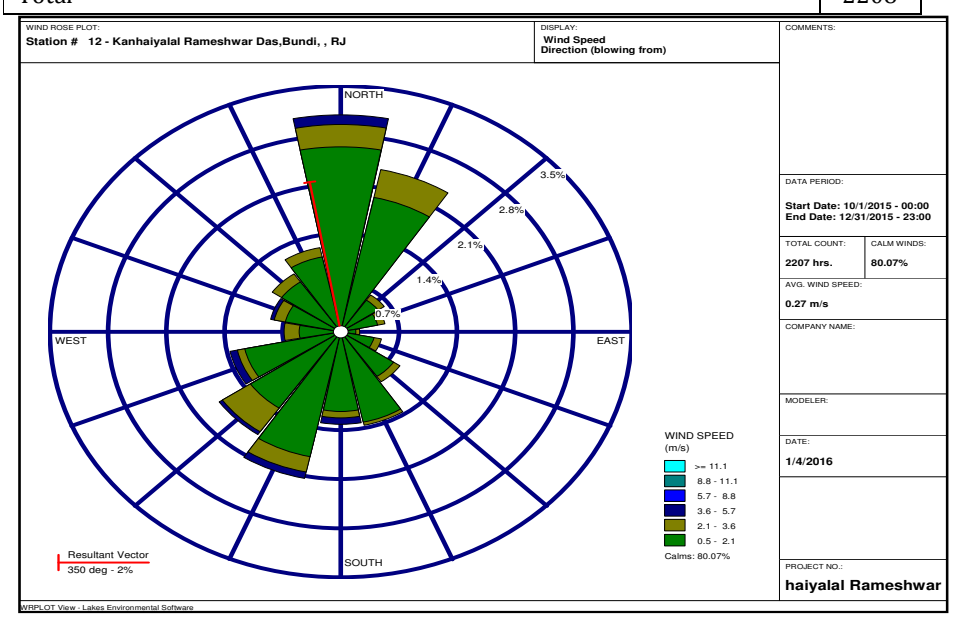


Figure 3.1: Wind Rose Diagram

The prominent wind direction during this period was from N to S and NNE to SSW. The average wind speed recorded during the study period was 0.27 m/s. Calm conditions prevailed for 80.11%.

3.6.3 AMBIENT AIR QUALITY DATA

Ambient air quality monitoring stations were selected on the basis of surface influence, demographic influence and meteorological influence. The sites were chosen at Mine Site, Village Gudha, Chainpuriya, Dhaneshwar, Tapura ki Khan, Dasoliya, Sutara. The ambient air monitoring has been carried out with a frequency of two days in a week at seven locations covering one complete season.

Table 3.9: Sampling Frequency

Parameters	Sampling Frequency
PM_{10}	24 hourly sample twice a week
$PM_{2.5}$	24 hourly sample twice a week
Sulphur Dioxide (SO_2)	8 hourly for 24 hrs sample twice a week
Oxides of Nitrogen (NO_x)	8 hourly for 24 hrs sample twice a week
Carbon Monoxide	8 hourly for 24 hrs sample twice a week

Table 3.10: Instruments used for Sampling & Analysis

Pollutants	Instrument	Make	Model No.	Range and Sensitivity
PM_{10}	Respirable Dust Sampler (RDS)	M/s ECO TECH Instruments Pvt. Ltd.	COMBO-AAS-271	2.3 m^3/hr ± 0.03 m^3/min
$PM_{2.5}$				1.0 m^3/ hr ± 0.03 m^3/min
SO_2	RDS with thermoelectrically cooled gaseous sampling attachment			0 – 3 LPM ± 0.2 LPM
NO_X				
CO	CO Analyzer	Testo Analyzer	--	1-1999 PPM
		GC – Bruker (Gas Chromatography)	--	< 1.0 PPM
Trace Elements	AAS	Thermo Fisheries	--	--

Table 3.11: Sampling and Analytical Techniques

S. No.	Parameter	Method
1	PM_{10}	IS-5182 (part – 23) 2006
2	$PM_{2.5}$	RTI (Research Triangle Institute) (Gravimetric Ana Revision-07 Aug14-2003)
3	Sulphur Dioxide	IS 5182 (Part – II) 2001, with Improved West & Gaeke Method
4	Nitrogen Oxide	Modified Jacob – Hochheiser/ Arsenite Method (IS 5182 Part 6) 2011
5	Carbon Monoxide	NDIR Spectroscopy method
6	Trace Elements	APHA-401 and ASTMD 4185-90

Table 3.12: Statistical Summary of Concentration Levels of Criteria Pollutants

(Unit: - µg/m³)

S. No.	Criteria Pollutant	Locations	Arithmetic Mean	Minimum	Maximum	Standard Deviation	98th percentile	CPCB Standards
1	PM_{10}	Mine Site	36.7	18.6	30.9	3.4	42.8	100
		Gudha	44.3	50.2	37.9	3.8	50.0	
		Chainpuriya	33.7	38.4	29.9	2.5	37.7	
		Dhaneshwar	50.7	56.3	42.6	3.6	56.1	
		Tapura Ki Khan	28.9	35.6	21.6	3.2	34.3	
		Dasoliya	26.2	31.5	22.0	2.6	31.4	
		Sutara	25.4	29.6	20.9	2.1	29.0	
2	$PM_{2.5}$	Mine Site	18.6	22.4	15.0	2.1	22.4	60
		Gudha	24.1	28.4	20.1	2.3	28.4	
		Chainpuriya	18.3	20.9	15.6	1.6	20.7	
		Dhaneshwar	27.6	31.0	22.0	2.5	31.0	
		Tapura Ki Khan	15.8	19.6	11.4	2.0	19.0	
		Dasoliya	14.2	17.7	11.9	1.6	17.7	
		Sutara	13.8	15.7	11.6	1.3	15.7	
3	SO_2	Mine Site	5.6	6.4	4.6	0.5	6.4	80
		Gudha	5.0	5.8	4.3	0.4	5.8	
		Chainpuriya	4.7	5.4	4.1	0.4	5.4	
		Dhaneshwar	5.8	6.9	4.6	0.5	6.8	
		Tapura Ki Khan	4.7	5.2	4.1	0.3	5.2	
		Dasoliya	4.5	5.0	4.1	0.3	5.0	
		Sutara	4.6	5.1	4.1	0.3	5.0	
4	NO_X	Mine Site	19.2	23.5	14.5	2.2	23.2	80
		Gudha	16.9	19.9	13.1	1.9	19.7	
		Chainpuriya	14.0	17.3	11.6	1.7	17.1	

		Dhaneshwar	19.7	23.8	14.6	2.0	23.6	
		Tapura Ki Khan	12.5	14.3	10.5	1.1	14.3	
		Dasoliya	12.7	14.6	10.9	1.0	14.4	
		Sutara	12.4	15.9	10.5	1.3	15.4	
5	CO	Mine Site	882.3	1124	468	167.2	1121	2000
		Gudha	945.1	1360	649	187.9	1333	
		Chainpuriya	674.8	942	468	146.7	914.0	
		Dhaneshwar	1242.5	1422	1056	108.7	1421.0	
		Tapura Ki Khan	682.2	965	522	135.9	947.0	
		Dasoliya	685.7	960	536	152.7	953.0	
		Sutara	687.6	845	497	88.7	835.5	

3.6.4 RESULTS

The analysis results for the study period are presented in above monitoring tables. Various statistical parameters like 98th percentile, average, maximum and minimum values have been computed from the observed raw data for all the AAQ monitoring stations. These are compared with the standards prescribed by Central Pollution Control Board (CPCB) for rural and residential zone.

The observation based on the perusal of the results is summarized below:-

PM_{10}:- The maximum value for PM_{10} observed at Village Dhaneshwar 56.3 µg/m^3 and minimum value for PM_{10} at Sutara 20.9 µg/m^3. The 24 hours applicable limit for industrial, residential rural and other areas is 100 µg/m^3.

$PM_{2.5}$:- The maximum value for $PM_{2.5}$ observed at Village Dhaneshwar is 31.0 µg/m^3 and minimum value for $PM_{2.5}$ at village Tapura Ki Khan is 11.6 µg/m^3. The 24 hours applicable limit for industrial, residential rural and other areas is 60 µg/m^3.

SO_2:- The maximum value for SO_2 observed at Village Dhaneshwar is 6.9 µg/m^3 and minimum value for SO_2 at Village Chainpuriya, Tapura Ki Khan, Dasoliya and Sutara and Borda is 4.1 µg/m^3. The 24 hours applicable limit for industrial, residential rural and other areas is 80µg/m^3.

NO_x: - The maximum value for NO_x observed at Village Dhaneshwar is 23.8µg/m^3 and minimum value for NO_X at Village Sutara and Tapura Ki Khan 10.5 µg/m^3. The 24 hours applicable limit for industrial, residential rural and other areas is 80µg/m^3.

CO: - The maximum value for CO observed in Village Dhaneshwar 1422 µg/m^3 and minimum value for CO at Village Chainpuriya is 468 µg/m^3. The eight hours applicable limit for Industrial, residential rural and other areas is 2000µg/m^3.

Conclusion

The results of the monitored data indicate that the ambient air quality of the region in general is in conformity with respect to norms of National Ambient Air Quality standards of CPCB, at all locations monitored.

3.7 NOISE ENVIRONMENT

The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site.

Table 3.13: Noise (Sound) Measuring Instrument

Instrument	Make	Model No.	Instrument Identification	Detection Limit
Integrated Sound Level Measurement Instrument Standard Accessories	HTC	SL-1352	SAL/NOISE/INT/05	Lo 35-80 dB Hi 80-130 dB

Table 3.14: Testing Method to be followed

Particular		Testing Method to be Followed
Noise Level Measurement		
A	Noise Level in dB (A) for continuous 24 hours at 1 hour interval.	Operational Manual of Noise level Meter, Model No. DT - 805 issued by Mextech.

3.7.1 AMBIENT NOISE LEVEL DATA

The statistical analysis is done for measured noise level at seven locations. The parameters are analyzed for L_{eq} (day), L_{eq} (night) and L_{eq} (day-night). The statistical analysis results are given in below:-

Table 3.15: Ambient Noise Level Data

Station Name	Mine Site	Gudha	Chainpuriya	Dhaneshwar	Tapura Ki Khan	Dasoliya	Sutara
Sampling Date	20.10.2015	26.10.2015	05.11.2015	09.11.2015	15.11.2015	23.11.2015	26.11.2015
Day Time							
7.00	41.6	46.2	39.9	37.5	37.9	39.9	40.8
8.00	42.9	48.5	43.2	39.6	40.6	41.5	41.9
9.00	45.6	50.2	47.9	42.9	42.5	42.6	45.6
10.00	49.9	53.5	49.9	45.8	46.6	47.9	48.9
11.00	51.6	52.3	50.2	48.5	49.6	49.9	50.6
12 Noon	52.0	51.0	51.6	49.6	48.7	50.9	51.8

13.00	50.3	50.0	52.0	50.3	50.9	52.6	52.6
14.00	50.6	51.6	51.2	50.0	52.0	51.4	51.5
15.00	49.6	48.9	50.9	48.2	50.8	50.6	49.9
16.00	48.3	46.8	50.3	47.5	49.6	49.9	48.7
17.00	46.7	50.2	49.9	46.4	48.7	50.6	47.6
18.00	49.9	51.6	50.6	45.1	47.3	49.7	50.6
19.00	50.6	46.4	51.3	48.2	49.8	50.6	48.1
20.00	51.3	45.5	52.0	49.5	50.5	52.3	46.2
21.00	50.1	44.3	51.2	50.6	51.6	53.5	43.2
Night Time							
22.00	48.7	42.9	48.6	49.2	50.0	51.5	41.0
23.00	47.6	40.3	46.5	48.5	48.9	49.4	38.6
24.00	44.3	38.9	44.3	44.6	46.4	46.5	35.0
1.00	40.2	36.9	42.1	41.2	44.1	44.7	35.0
2.00	39.8	35.2	40.3	38.8	38.6	40.5	35.0
3.00	38.1	36.4	38.7	36.5	37.2	37.2	36.5
4.00	36.3	38.9	37.2	35.6	36.4	36.2	38.7
5.00	38.9	40.5	35.6	35.2	35.2	35.1	36.7
6.00	40.1	42.3	37.9	35.0	37.3	37.7	39.9
Leq day dB(A)	**49.5**	**49.9**	**50.3**	**47.8**	**49.1**	**50.2**	**49.0**
Leq Night dB(A)	**43.6**	**39.8**	**43.3**	**43.8**	**44.8**	**45.7**	**37.9**
LDay equivalent	**48.2**	**48.4**	**48.9**	**46.8**	**48.1**	**49.0**	**49.7**

Standards (Leq)	**Day Time (6.00 AM to 10.00 PM)**	**Night Time (10.00 PM to 6.00 AM**
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

3.7.2 RESULT

A) Day time Noise Levels L_{eq} (day)

The day time L_{eq}(day) noise levels at all the residential locations were observed to be in the range of 50.3 – 47.8 dB(A). The maximum noise level of 50.3 dB (A) was observed at Village Chainpuriya and the minimum noise level of 47.8 dB(A) was observed at Village Dhaneshwar during the study period. It is observed that the day time noise levels are in accordance to the prescribed limit of 55 dB (A).

B) Night time Noise Levels L_{eq} (night)

The night time L_{eq} (night) noise levels at all the residential locations was observed to be in the range of 39.8 – 45.7 dB(A). The maximum noise level of 45.7 dB (A) was observed at Village Dasoliya and the minimum noise level of 39.8 dB (A) at Village Gudha during the study period. It has been found that the night time noise levels at Village Dasoliya were found to little very high due to vehicular movement, within the prescribed standard of 45 dB(A).

3.8 BIOLOGICAL ENVIRONMENT

We cannot recreate a species if it is extinct. So, biological/ ecological impact assessment is an integral and important component of environmental impact assessment (EIA). Baseline information/ data on the flora and fauna of the particular area are important form for inferring the impact of a proposed expansion mining project. The ultimate aim of an ecological assessment is to avoid or minimize the impacts of a proposed development. They are therefore related to the aim of Nature Conservation which, in broad terms, is to maintain and where possible increase, biodiversity.

"Biomap" of the particular area is very important to understand the ecological setting of that area and to design the area specific conservation measures. So, ecological understanding is an integral and important component of the developmental projects. Environmental impact assessments have become an integral part of development projects in India ever since 1994, to formulate policies and guidelines for environmentally sound economic development. Proper assessment of biological environment and compilation of its taxonomical data is essential for the impact prediction. The present work describes a present status of floral and faunal components occur within the study area and also identification of threatened/ rare species if any. The present work also envisaged to assess the likely impacts of project activities and streamline the recommendations to assist minimizing the impact on biodiversity.

3.8.1 PERIOD OF THE STUDY AND STUDY AREA

Baseline study, for the assessment of the floral and faunal biodiversity of the terrestrial environment of the study area, with in 10 km radius from the mine site has been conducted during October, November and December' 2015 (Post-Monsoon Season).

3.8.2 METHODOLOGY ADOPTED FOR BIODIVERSITY STUDY

The main objective of survey was to describe the floral and faunal components of the study area. The sampling plots for floral inventory were selected randomly in the covering various habitats within the 10 Km radius from the project site. Desktop literature review was also conducted to identify the representative spectrum of threatened species, population and ecological communities listed by IUCN, WCMC, ZSI, BSI and Indian Wild Life Protection Act, 1972.

The objectives of the present study were as follows:-

1. To identify the floral and faunal diversity;
2. To identify the endangered species of flora and fauna, if any
3. To prepare conservation plan for Schedule I, if any
4. To mark eco-sensitive areas in the study area, if any.

3.8.2.1 Floral Status

Floral status was assessed in different habitat types of the mining study area. Quantitative data was collected using standard methods of Circular plot method followed by Mueller-Dombois and Ellenberg 1967, Kershaw, 1973. Status of tree, shrub, was quantified using circular plots of sizes of 10 m radius. Annuals like herbs and grass were quantified within 1x1 plots (grass, herbs and others) plotted randomly within the every circular sample plots.

3.8.2.3 Faunal Status

Herpetofauna: - Status of herpetofauna was assessed using Intensive time Constrained search Method covering different micro habitats (Welsh, 1987) within the sample plots.

Birds: - Avifaunal status was assessed both in terrestrial and aquatic habitats. Total count or flock count method was adopted to assess the status of aquatic birds (Sridharan, 1989 and Bhupathy, 1991). Point count method was used to assess the status of terrestrial birds (Bibby et al., 1992 and Hutto et al., 1986) at every sample points, covering 50 m radius plots.

Mammals: - Status and distribution of different mammal species was quantified using, Direct count along the Line transect (Burnham et al. 1980) and indirect evidences within the circular plots of 15 m radius (Rodgers 1991, Sale and Berkmuller, 1988). Indirect evidences like, Pellet, dung, tracks and other signs were enumerated within the 15 m. radius plots for nocturnal species (Daniels, 1992).

Presence of different faunal species was also confirmed by interviewing the local people with pectoral colored field guide and also consults with DFO (Wildlife), Mukundra Tiger Reserve, Kota.

Fig. 3.2: Photographs during field survey

3.8.3 SAMPLING DETAILS

Sample intensity in different habitat types to assess the floral and faunal status in the project area has been tabulated in the following table:-

Table 3.16: Sampling Details

Components		Core Zone (Project Site)	Buffer Zone				SA
			RH	*WB*	*AG*	*FA*	
Plants	*Tree, Shrubs*	04	8	5	15	20	48
	Herbs, Grasses	04	8	5	15	20	48
Herpetofauna		04	8	5	15	15	43
Birds	Terrestrial	04	8	5	15	15	43

	Aquatic	--	--	5	--	03	8
Mammals		04	8	5	15	15	43
RH-Reverine habitat, WB- Water Body, AH- Agriculture Hedges, , FA- Forest Area,							

3.8.4 DATA ANALYSIS

Calculations for various parameters have been performed to understand phytosociology of the project site. Following formulas were used to perform various statistical calculations,

The data collected in the field was analyzed for secondary parameters such as density, frequency and abundance following standard phyto-sociological methods. Shannon-Wiener diversity index (Shannon and Wiener, 1963) was calculated for all life forms as follows:-

Table 3.17 : Estimation of Phyto-Sociological Parameters	
1	**Frequency (%)** = (No. of quadrats of occurrence of the species X 100) / Total No. of quadrats sampled
2	***Density** = Total No. of individuals of the species / Total No. of quadrats sampled
3	**Abundance** = Total No. of individuals of the species / No. of quadrats of Occurrence
4	**Relative Frequency** = (Frequency of the given species X 100) / Sum of all frequencies
5	**Relative Density** = (Density of the given species X 100) / Sum of all densities
6	**Relative Abundance** = (Abundance of species X 100) / Sum of all abundances
7	**Basal Area** = $(GBH)^2 / 4\Pi$
8	**Dominance** = Total Basal Area / Total area sampled
9	**Relative Dominance** = (Dominance of given species X 100) / Dominance of all species
10	**Important Value Index (I.V.I.)** = Relative Density + Relative Frequency + Relative Dominance
Note: *Density refers to the number of individuals per unit area of a site.	

3.8.5 STATISTICAL ANALYSIS

Shannon-Wiener diversity index (Shannon and Wiener, 1963) was calculated for all life forms following:-

Shannon- Wiener Information Function: $D = -\Sigma\, pi \ln pi$

Where: - i = an index for the number of species sampled, $p_i = n_i / N$ = percentage of species i in the entire sample (N) of individuals, and ln = natural log. Multiply the percentage (or proportion) of each species in the sample times the natural log of that same value, sum the products across all species, and then multiply by minus 1.

3.8.5.1 Habitats of the Study area

Study area includes forest area and Agriculture. Landscape of the region is mainly dominated by Forest (Northern Tropical dry deciduas forest, Northern dry mixed

deciduous forest- Jawahar Sagar Wildlife Sanctuary), except for part of agriculture fields, built-up areas and mining area.

3.8.6 BIODIVERSITY OF THE STUDY AREA

Project site (Core Zone – CZ)

Existing mine site encompasses mix vegetation, mainly dominated by the *Prosopis juliflora* and other common herb, shrub and grass species. 5 species shrub, 12 species of herb and 3 species of grass were recorded in the core zone during the field survey. The dominant species among the shrubs was Vilayati Babool (*Prosopis juliflora)* and Kantkeri (*Solanum xanthocarpum*) was the dominant herb.

For the greenbelt development in existing mine site the proponent has planted many fruit trees, the details of the vegetation in the core zone (existing mine site are given in the following table.

Table 3.18: Flora Reported from the Core Zone (Existing Mine Site)

S. No.	Common Name	Species Name	Family
		Tree	
1.	Neem	*Azadirachta indica*	Meliaceae
2.	Siris	*Albizia lebbeck*	Fabaceae
3.	Shisham	*Dalbergia sissoo*	Fabaceae
4.	Anar	*Punica granatum*	Lythraceae
5.	Amrood	*Psidium guajava*	Myrtaceae
6.	Papita	*Carica papaya*	Caricaceae
7.	Chiku	*Manilkara zapota*	Sapotaceae
8.	Aam	*Mangifera indica*	Anacardiaceae
9.	Sitafal	*Annona squamosa*	Annonaceae
		Shrubs	
1.	Aak	*Calotropis gigantea*	Asclepiadaceae
2.	Vilayati Babool	*Prosopis juliflora*	Fabaceae
3.	Dhatura	*Datura stramonium*	Solanaceae
4.	Raimunia	*Lantana camara*	Verbenaceae
5.	Tarwar	*Cassia auriculata*	Caesalpinioideae
		Herbs	
1.	Latjeera	*Achyranthes aspera*	Amaranthaceae
2.	Jangli chaulai	*Amaranthus spinosus*	Amaranthaceae
3.	Satyanasi	*Argemone mexicana*	Papaveraceae
4.	Aak	*Calotropis prosera*	Asclepiadaceae

5.	Doob Ghas	*Cynodon dactylon*	Poaceae
6.	Oontkata	*Echinops echinatus*	Asteraceae
7.	Badi Dudhi	*Euphorbia hirta*	Euphorbiaceae
8.	Van gobi, Jangali gobi	*Launaea procumbens*	Asteraceae
9.	Gajar Ghas	*Parthenium hysterophorus*	Asteraceae (Compositae)
10.	Kantkeri	*Solanum xanthocarpum*	Solanaceae
11.	Sarphonka	*Tephrosia purpurea*	Fabaceae
12.	Gokhru	*Tribulus terrestris*	Zygophyllaceae
Grass			
1.	Doob ghas	*Cynodon dactylon*	Poaceae
2.	Sheda Grass	*Dichanthium annulatum*	Poaceae
3.	Makra	*Dactyloctenium aegyptium*	Poaceae

Table 3.19: Phyto-Sociology of Core Zone (Shrub)

Vernacular Name	Scientific Name	#	@	Total no of individual	F	D	A	RF	RD	RA	IVI
Aak	*Calotropis procera*	4	3	7	75	1.75	2.33	25.00	18.42	14.51	57.93
Vilayati Babool	*Prosopis juliflora*	4	4	11	100	2.75	2.75	33.33	28.95	17.10	79.38
Dhatura	*Datura stramonium*	4	2	7	50	1.75	3.50	16.67	18.42	21.77	56.85
Raimunia	*Lantana camara*	4	2	11	50	2.75	5.50	16.67	28.95	34.20	79.82
Tarwar	*Cassia auriculata*	4	1	2	25	0.5	2.00	8.33	5.26	12.44	26.03
					300	**9.50**	**16.08**	**100.00**	**100.00**	**100.0**	**300.0**

#: Total No of quadrate studied, @: Total no of quadrate in which species occurred, F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Total of 05 shrub species belonging to 05 families were recorded in the core zone (existing mine site) during the survey. Shrub species commonly seen in the study area were *Lantana camara*, *Prosopis juliflora*, *Calotropis procera and Cassia auriculata.* The highest IVI for shrub at study area was recorded for *Lantana camara* (79.82), followed by *Prosopis juliflora* (79.38), *Calotropis procera* (57.93) and *Datura stramonium* (56.85). Shannon-Wiener diversity index (H') for shrub was 1.54.

Buffer Zone

Herb & Grasses

Total of 39 herb and grass species were recorded in the study area during the survey. Herb species commonly seen in the study area were *Euphorbia hirta*, *Amaranthus spinosus*, *Tephrosia purpurea,* and *Achyranthes aspera.* The highest IVI for herb at study area was recorded for *Euphorbia hirta* (12.65), *Amaranthus spinosus* (11.05), followed by *Tridax procumbens* (10.89) and *Achyranthes aspera* (10.88), Shannon-Wiener diversity index (H') for herb and grass was 3.20.

Table 3.20: Important Value Index (IVI) for herb and grass species in the Buffer Zone

Scientific Name	#	@	F	D	A	RF	RD	RA	IVI
Acalypha indica	51	73	72.86	1.04	1.43	5.00	3.48	1.72	10.20
Achyranthes aspera	25	88	35.71	1.26	3.52	2.45	4.20	4.24	10.88
Adiantum raddianum	12	26	17.14	0.37	2.17	1.18	1.24	2.61	5.02
Aerva persica	9	23	12.86	0.33	2.56	0.88	1.10	3.08	5.05
Amaranthus spinosus	39	92	55.71	1.31	2.36	3.82	4.39	2.84	11.05
Amaranthus viridis	26	77	37.14	1.10	2.96	2.55	3.67	3.56	9.78
Apluda mutica	7	19	10.00	0.27	2.71	0.69	0.91	3.27	4.86
Argemone mexicana	33	63	47.14	0.90	1.91	3.23	3.01	2.30	8.54
Blumea lacera	21	45	30.00	0.64	2.14	2.06	2.15	2.58	6.78
Cassia occidentalis	28	52	40.00	0.74	1.86	2.74	2.48	2.24	7.46
Cassia tora	36	49	51.43	0.70	1.36	3.53	2.34	1.64	7.50
Cenchrus ciliarias	15	35	21.43	0.50	2.33	1.47	1.67	2.81	5.95
Cleome viscosa	18	47	25.71	0.67	2.61	1.76	2.24	3.14	7.15
Corchorus tridens	34	82	48.57	1.17	2.41	3.33	3.91	2.90	10.15
Croton bonplandianum	22	37	31.43	0.53	1.68	2.15	1.77	2.02	5.94
Echinops echinatus	23	54	32.86	0.77	2.35	2.25	2.58	2.83	7.65
Eragrostis ciliaris	22	33	31.43	0.47	1.50	2.15	1.57	1.81	5.53
Euphorbia hirta	41	112	58.57	1.60	2.73	4.02	5.34	3.29	12.65
Euphorbia milli	7	16	10.00	0.23	2.29	0.69	0.76	2.75	4.20
Euphorbia neriifolia	33	71	47.14	1.01	2.15	3.23	3.39	2.59	9.21
Indigofera cordifolia	36	81	51.43	1.16	2.25	3.53	3.86	2.71	10.10
Launaea procumbens	41	53	58.57	0.76	1.29	4.02	2.53	1.56	8.10
Ocimum americanum	29	47	41.43	0.67	1.62	2.84	2.24	1.95	7.03
Parthenium hysterophorus	35	77	50.00	1.10	2.20	3.43	3.67	2.65	9.75
Peristrophe bicalyculata	17	41	24.29	0.59	2.41	1.67	1.96	2.90	6.52
Phyla nodiflora	21	34	30.00	0.49	1.62	2.06	1.62	1.95	5.63

Phyllanthus fraternus	41	79	58.57	1.13	1.93	4.02	3.77	2.32	10.10
Physalis minima	12	19	17.14	0.27	1.58	1.18	0.91	1.91	3.99
Pteridium aquilinum	9	21	12.86	0.30	2.33	0.88	1.00	2.81	4.69
Sida acuta	24	33	34.29	0.47	1.38	2.35	1.57	1.65	5.58
Sida cordifolia	28	53	40.00	0.76	1.89	2.74	2.53	2.28	7.55
Solanum surattense	23	49	32.86	0.70	2.13	2.25	2.34	2.56	7.15
Solanum xanthocarpum	31	52	44.29	0.74	1.68	3.04	2.48	2.02	7.54
Sorghum halepense	13	57	18.57	0.81	4.38	1.27	2.72	5.28	9.27
Tephrosia purpurea	44	93	62.86	1.33	2.11	4.31	4.44	2.54	11.29
Tephrosia villosa	27	59	38.57	0.84	2.19	2.64	2.81	2.63	8.09
Tribulus terrestris	24	37	34.29	0.53	1.54	2.35	1.77	1.86	5.97
Tridax procumbens	45	87	64.29	1.24	1.93	4.41	4.15	2.33	10.89
Xanthium strumarium	19	30	27.14	0.43	1.58	1.86	1.43	1.90	5.19
			1458.57	29.94	83.08	100.00	100.00	100.00	300.00

#: Total no of quadrate in which species occurred, @:Total No of individual, , F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Shrubs

Total of 26 shrub species were recorded in the buffer zone of the study during the survey. Shrub species commonly seen in buffer zone of the study area were *Lantana camara*, *Prosopis juliflora*, *Cassia auriculata, Ipomoea carnea and Ricinus communis.* The highest IVI for shrub at study area was recorded for *Lantana camara* (28.07), followed by *Parthenium hysterophorus* (24.30), *Calotropis prosera* (22.71) and *Prosopis juliflora* (19.61). Shannon-Wiener diversity index (H') for shrub was 2.9.

Table 3.21 : Important value Index (IVI) for Shrub species in the Buffer Zone.

Scientific Name	#	@	F	D	A	RF	RD	RA	IVI
Adhatoda vasica	17	36	24.29	0.51	2.12	3.51	3.69	5.30	12.51
Calotropis prosera	41	87	58.57	1.24	2.12	8.47	8.92	5.31	22.71
Capparis decidua	7	12	10.00	0.17	1.71	1.45	1.23	4.29	6.97
Carissa congesta	7	9	10.00	0.13	1.29	1.45	0.92	3.22	5.59
Cassia auriculata	36	81	51.43	1.16	2.25	7.44	8.31	5.63	21.38
Datura stramonium	23	35	32.86	0.50	1.52	4.75	3.59	3.81	12.15
Dhatura metal	29	46	41.43	0.66	1.59	5.99	4.72	3.97	14.68
Grewia tenax	16	21	22.86	0.30	1.31	3.31	2.15	3.29	8.75
Prosopis juliflora	28	72	40.00	1.03	2.57	5.79	7.38	6.44	19.61

Lantana camara	52	115	74.29	1.64	2.21	10.74	11.79	5.54	28.07
Mimosa hamata	27	39	38.57	0.56	1.44	5.58	4.00	3.62	13.19
Nerium oleander	19	42	27.14	0.60	2.21	3.93	4.31	5.53	13.77
Nyctanthes arbor-tristis	12	25	17.14	0.36	2.08	2.48	2.56	5.22	10.26
Opuntia dillenii	3	10	4.29	0.14	3.33	0.62	1.03	8.35	9.99
Parthenium hysterophorus	36	98	51.43	1.40	2.72	7.44	10.05	6.82	24.30
Sesbania sesban	28	38	40.00	0.54	1.36	5.79	3.90	3.40	13.08
Thevetia peruviana	24	41	34.29	0.59	1.71	4.96	4.20	4.28	13.44
Vitex negundo	19	40	27.14	0.57	2.11	3.93	4.10	5.27	13.30
Zizyphus nummularia	31	57	44.29	0.81	1.84	6.40	5.85	4.60	16.85
Ricinus communis	29	71	41.43	1.01	2.45	5.99	7.28	6.13	19.40
			691.43	13.93	39.94	100.0	100.0	100.0	300.00

#: Total no of quadrate in which species occurred, @:Total No of individual, , F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index.

Table 3.22: Important value Index (IVI) for tree species in the Buffer Zone.

Scientific Name	#	@	F	D	A	RF	RD	RA	IVI
Acacia catechu	31	42	44.29	0.60	1.35	3.98	3.36	1.91	9.25
Acacia leucopholea	14	27	20.00	0.39	1.93	1.80	2.16	2.71	6.67
Acacia nilotica	29	33	41.43	0.47	1.14	3.72	2.64	1.60	7.97
Acacia senegal	15	22	21.43	0.31	1.47	1.93	1.76	2.06	5.75
Aegle marmelos	9	13	12.86	0.19	1.44	1.16	1.04	2.03	4.23
Ailanthus excelsa	12	33	17.14	0.47	2.75	1.54	2.64	3.87	8.05
Albizia lebbeck	12	23	17.14	0.33	1.92	1.54	1.84	2.70	6.08
Annona squamosa	14	27	20.00	0.39	1.93	1.80	2.16	2.71	6.67
Anogeissus pendula	22	31	31.43	0.44	1.41	2.82	2.48	1.98	7.29
Anogiessis latifolia	26	33	37.14	0.47	1.27	3.34	2.64	1.79	7.76
Azadirachta indica	11	19	15.71	0.27	1.73	1.41	1.52	2.43	5.36
Boswellia serrata	9	9	12.86	0.13	1.00	1.16	0.72	1.41	3.28
Butea monosperma	42	69	60.00	0.99	1.64	5.39	5.52	2.31	13.23
Carissa congesta	12	22	17.14	0.31	1.83	1.54	1.76	2.58	5.88
Cassia fistula	39	67	55.71	0.96	1.72	5.01	5.36	2.42	12.79
Cassia siamea	29	58	41.43	0.83	2.00	3.72	4.64	2.81	11.18
Dalbergia sissoo	13	22	18.57	0.31	1.69	1.67	1.76	2.38	5.81
Delonix regia	5	7	7.14	0.10	1.40	0.64	0.56	1.97	3.17

Dichrostachys cinerea	7	11	10.00	0.16	1.57	0.90	0.88	2.21	3.99
Diospyros melanoxylon	39	58	55.71	0.83	1.49	5.01	4.64	2.09	11.74
Erythrina indica	4	4	5.71	0.06	1.00	0.51	0.32	1.41	2.24
Feronia limonia	4	6	5.71	0.09	1.50	0.51	0.48	2.11	3.10
Ficus benghalensis	11	14	15.71	0.20	1.27	1.41	1.12	1.79	4.32
Ficus glomerata	9	10	12.86	0.14	1.11	1.16	0.80	1.56	3.52
Ficus religiosa	9	11	12.86	0.16	1.22	1.16	0.88	1.72	3.76
Flacourtia indica	2	3	2.86	0.04	1.50	0.26	0.24	2.11	2.61
Holoptelea integrifolia	14	19	20.00	0.27	1.36	1.80	1.52	1.91	5.23
Lannea coromandelica	36	52	51.43	0.74	1.44	4.62	4.16	2.03	10.82
Maytenus emarginata	11	28	15.71	0.40	2.55	1.41	2.24	3.58	7.23
Moringa oleifera	12	21	17.14	0.30	1.75	1.54	1.68	2.46	5.68
Morus alba	17	24	24.29	0.34	1.41	2.18	1.92	1.99	6.09
Phoenix sylvestris	14	23	20.00	0.33	1.64	1.80	1.84	2.31	5.95
Pithecellobium dulce	24	36	34.29	0.51	1.50	3.08	2.88	2.11	8.07
Pongamia pinnata	33	56	47.14	0.80	1.70	4.24	4.48	2.39	11.11
Prosopis cineraria	7	18	10.00	0.26	2.57	0.90	1.44	3.62	5.96
Prosopis juliflora	37	79	52.86	1.13	2.14	4.75	6.33	3.00	14.08
Salvadora persica	7	19	10.00	0.27	2.71	0.90	1.52	3.82	6.24
Sterculia urens	12	19	17.14	0.27	1.58	1.54	1.52	2.23	5.29
Syzygium cumini	31	42	44.29	0.60	1.35	3.98	3.36	1.91	9.25
Tamarindus indica	7	10	10.00	0.14	1.43	0.90	0.80	2.01	3.71
Terminalia bellirica	5	7	7.14	0.10	1.40	0.64	0.56	1.97	3.17
Terminalia arjuna	21	26	30.00	0.37	1.24	2.70	2.08	1.74	6.52
Wrightia tinctoria	34	61	48.57	0.87	1.79	4.36	4.88	2.52	11.77
Ziziphus mauritiana	28	35	40.00	0.50	1.25	3.59	2.80	1.76	8.15
		1249	**1112.86**	**17.843**	**71.10**	**100.00**	**100.00**	**100.00**	**300.00**

#: Total no of quadrate in which species occurred, @:Total No of individual, , F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Trees

Total of 51 tree species were recorded in the buffer zone of the study during the survey. Tree species commonly seen in buffer zone of the study area were *Butea monosperma*, *Prosopis juliflora*, *Cassia fistula, Diospyros melanoxylon, Pongamia pinnata, Lannea coromandelica.* The highest IVI for shrub at study area was recorded for *Prosopis juliflora* (14.08) and *Butea monosperma* (13.23),

followed by *Cassia fistula* (12.79), *Diospyros melanoxylon* (11.74) and *Lannea coromandelica* (10.82). Shannon-Wiener diversity index (H') for tree was 2.9.

Fig. 3.3: Northern Tropical dry deciduas forest, Northern dry mixed deciduous forest in the study area

Table 3.23: Tree Species Observed in the forest area of Buffer Zone

S. No.	Vernacular Name	Scientific Name	Family
1.	Kadami, Haldu	*Adina cordifolia or Haldina cordifolia*	Rubiaceae
2.	Kaim	*Mitragyna parvifolia*	Rubiaceae
3.	Kadamb	*Anthocephalus cadamba*	Rubiaceae
4.	Mahua	*Madhuca longifolia*	Sapotaceae
5.	Kulu, Gum Karaya	*Sterculia urens*	Malvaceae
6.	Dhura, Dhau	*Anogeissus latifolia*	Combretaceae
7.	Salar, Salai	*Boswellia serrata*	Burseraceae
8.	Tendu	*Diospyros melanoxylon*	Ebenaceae
9.	Khirni	*Manilkara hexandra*	Sapotaceae
10.	Karanj	*Pongamia pinnata*	Fabaceae
11.	Bahera	*Terminalia bellirica*	Combretaceae
12.	Harad	*Terminalia chebula*	Combretaceae
13.	Amla	*Phyllanthus emblica*	Phyllanthaceae

14.	Arjun	*Terminalia arjuna*	Combretaceae
15.	Jhingan, Mohin	*Lannea coromandelica*	Anacardiaceae

Faunal Diversity of the Study Area

Herpetofauna

Core Zone

Table 3.24 : Herpetofauna Reported from the Core Zone Area					
1	Oriental Garden Lizard	*Calotes versicolor*	Agamidae	-	LC
2	Bronze Grass Skink	*Eutropis macularia*	Scincidae	-	LRnt
3	Common Keeled Grass Skink	Mabuya carinata	Scincidae	-	LRnt

Buffer zone

Overall 7 species from 6 families were inventoried on the basis of direct and secondary sources. All species of turtles, one species of lizard and all snake species (Indian Star Tortoise) are included in the list based on the secondary sources (interviews of the local people). Details of the species reported from the study area are given below:-

Table 3.25 : Herpetofauna Reported from the Buffer Zone Area					
S. No. & Family	**Species Name**	**Common English Name**	**Conservation Status**		
			IUCN	**CITES**	**IWPA**
TOADS/ FROGS					
1 Bufonidae					
1	*Bufo melanostictus*	Common Indian Toad	VU	--	--
2. *Ranidae*					
2	*Hoplobatrachus tigerinus*	Indian Bull Frog	VU	App. II	Schedule-IV
TORTOISE / TURTLE					
3. *Testudinidae*					
3	*Geochelone elegans **	Indian Star Tortoise	VU	App. II	--
LIZARDS					
4. *Gekkonidae*					
4	*Hemidactylus brookii.*	Spotted Indian House Gecko	LRlc	--	--
5	*Hemidactylus flaviviridis*	Yellow Bellied House Gecko	LRlc	--	--
5. *Agamidae*					
6	*Calotes versicolor*	Indian Garden Lizard	LRlc	--	--
6. *Scincidae*					
7	*Mabuya carinata*	Common Keeled Grass Skink	LRnt	--	--

Avifauna

Core zone

Only some common bird species like Common crow, Red-vented bulbul, Common myna, Rock Pigeon and Indian robin were sighted from the core zone.

Buffer zone

Totally 67 species of the birds belonging to 36 families were recorded from the buffer zone of the study area. A Schedule I species, *Pavo cristatus* (Indian peafowl) was reported from the hills of Amba Rani Forest Block and other habitats located close vicinity of the human habitation / villages. For the same, conservation plan is given at the end of this chapter. All the bird species reported from the study area enlisted in the following table:-

Table 3.26 : Avifauna Reported from the Buffer Zone of the Study Area

Family S. No.	Species S. No.	Family & Species	Common English Name	MGS	IWPA Schedule
1	**Phasianidae**				
	1.	*Francolinus pondicerisnus*	Grey Francolin	R	IV
	2.	*Pavo cristatus*	Indian Peafowl	R	I
2	**Picidae**				
	3.	*Dinopium benghalense*	Common Flamebacked Woodpecker	R	IV
3	**Upupidae**				
	4.	*Upupa epops*	Common Hoopoe	WV	IV
4	**Coraciidae**				
	5.	*Coracias benghalensis*	Indian Roller	R	IV
5	**Alcedinidae**				
	6.	*Alcedo hercules*	Common Kingfisher	R	IV
6	**Dacelonidae**				
	7.	*Halcyon smyrnensis*	White-throated Kingfisher	R	IV
7	**Meropidae**				
	8.	*Merops orientalis*	Green Bee-eater	R	IV
8	**Cuculidae**				
	9.	*Cuculus micropterus*	Indian Cuckoo	SV	IV
	10.	*Surniculus lugubris*	Drongo Cuckoo	SV	IV
	11.	*Eudynamys scolopacea*	Asian Koel	R	IV
9	**Centropodidae**				
	12.	*Centropus sinensis*	Greater Coucal	R	IV

10	**Psittacidae**				
	13.	*Psittacula cyanocephala*	Plum-headed Parakeet	R	IV
	14.	*Psittacula eupatria*	Alexandrine Parakeet	R	IV
	15.	*Psittacula krameri*	Rose-ringed Parakeet	R	IV
11	**Caprimulgidae**				
	16.	*Caprimulgus asiaticus*	Indian Nightjar	R	IV
12	**Columbidae**				
	17.	*Columba livia*	Rock Pigeon	R	IV
	18.	*Streptopelia senegalensis*	Laughing Dove	R	IV
	19.	*Streptopelia tranquebarica*	Red-collared Dove	R	IV
	20.	*Streptopelia decaocto*	Eurasian Collared Dove	R	IV
13	**Rallidae**				
	21.	*Gallinula chloropus*	Common Moorhen	R	IV
	22.	*Fulica atra*	Common Coot	R	IV
14	**Scolopacidae**				
	23.	*Actitis hypoleucos*	Common Sandpiper	R	IV
15	**Burhinidae**				
	24.	*Burhinus oedicnemus*	Eurasian Thick-knee	R	IV
16	**Charadriidae**				
	25.	*Himantopus himantopus*	Blackwinged Stilt	R	IV
	26.	*Vanellus malabaricus*	Yellow-wattled Lapwing	R	IV
	27.	*Vanellus indicus*	Red-wattled Lapwing	R	IV
17	**Laridae**				
	28.	*Sterna aurantia*	River Tern	R	IV
18	**Accipitridae**				
	29.	*Elanus caeruleus*	Black-shouldered Kite	R	IV
	30.	*Haliastur indus*	Brahminy Kite	R	IV
19	**Podicipedidae**				
	31.	*Tachybaptus ruficollis*	Little Grebe	R	IV
20	**Phalacrocoracidae**				
	32.	*Phalacrocorax niger*	Little Cormorant	R	IV
21	**Ardeidae**				
	33.	*Egretta garzetta*	Little Egret	R	IV
	34.	*Bubulcus ibis*	Cattle Egret	R	IV
	35.	*Ardeola grayii*	Indian Pond Heron	R	IV
22	**Ciconidae**				
	36.	*Ciconia episcopus*	Wooly-necked Stork	R	IV

	37.	*Anastomus oscitans*	Asian Open-billed Stork	R	IV
23	**Laniidae**				
	38.	*Lanius meridionalis*	Southern Grey Shrike	R	IV
	39.	*Lanius schach*	Long-tailed Shrike	R	IV
	40.	*Lanius vittatus*	Bay-backed Shrike	R	IV
24	**Corvidae**				
	41.	*Dendrocitta vagabunda*	Rufous Treepie	R	IV
	42.	*Corvus splendens*	House Crow	R	IV
	43.	*Pericrocotus cinnamomeus*	Small Minivet	R	IV
	44.	*Dicrurus macrocercus*	Black Drongo	R	IV
	45.	*Tephrodornis pondicerianus*	Common Woodshrike	R	IV
25	**Muscicapidae**				
	46.	*Copsychus saularis*	Oriental Magpie Robin	R	IV
	47.	*Saxicoloides fulicata*	Indian Robin	R	IV
26	**Sturnidae**				
	48.	*Sturnus pagodarum*	Brahminy Starling	R	IV
	49.	*Acridotheres tristis*	Common Myna	R	IV
27	**Certhiidae**				
	50.	*Salpornis spilonotus*	Spotted Creeper	R	IV
28	**Hirundinidae**				
	51.	*Hirundo smithii*	Wire-tailed Swallow	R	IV
29	**Pycnonotidae**				
	52.	*Pycnonotus leucotis*	White-eared Bulbul	R	IV
	53.	*Pycnonotus cafer*	Red-vented Bulbul	R	IV
30	**Cisticolidae**				
	54.	*Prinia socialis*	Ashy Prinia	R	IV
	55.	*Prinia inornata*	Plain Prinia	R	IV
31	**Zosteropidae**				
	56.	*Zosterops palpebrosus*	Oriental White-eye	R	IV
32	**Sylviidae**				
	57.	*Turdoides striatus*	Jungle Babbler	R	IV
	58.	*Turdoides malcolmi*	Large Grey Babbler	R	IV
	59.	*Turdoides caudatus*	Common Babbler	R	IV
33	**Alaudidae**				
	60.	*Galerida cristata*	Crested Lark	R	IV
34	**Nectariniidae**				
	61.	*Nectarinia asiatica*	Purple Sunbird	R	IV

35	**Passeridae**				
	62.	*Anthus rufulus*	Paddyfield Pipit	R	IV
	63.	*Lonchura malabarica*	Indian Silverbill	R	IV
	64.	*Passer domesticus*	House Sparrow	R	IV
	65.	*Ploceus philippinus*	Baya Weaver	R	IV
36	**Fringillidae**				
	66.	*Emberiza striolata*	House Bunting	R	IV
	67.	*Melophus lathami*	Crested Bunting	R	IV
R-Resident, WV – Winter Visitor, MGS –Migratory Status, CS: Conservation Status : NT - Near Threatened					

Fig. 3.4: Birds Observed in the study area

Clock – wise 1. Rufous tree pie (*Dendrocitta vagabunda*), 2. Grey francolin (*Francolinus pondicerianus*), 3. Indian Roller (*Coracias benghalensis*) 4. Rose-Ringed Parakeet (*Psittacula krameri.*

Fig. 3.5: Birds Observed in the study area

Clock – wise 1. Red-wattled lapwing (*Vanellus indicus*), 2. Jungle babbler (*Turdoides striata*), 3. little cormorant (Microcarbo niger). 4. Green bee-eater (*Merops orientalis*).

Mammals

Core zone

Only two species, i.e. *Funambulus pennantii* (Five-Striped Palm squirrel) and *Tatera indica* (Indian Gerbill) were found in the core zone of the study area. This species is very common in the study area and usually uses wide variety of the habitats.

Buffer zone

Overall 13 species of the mammals belonging to 12 different families were recorded from the buffer zone of the study area. Some species like, Striped Hyena, Small Indian Civet, wild pig and Indian Porcupine are included in the list based on the secondary sources (interview of local people). All the mammals reported from the study area given in the following table:-

Table 3.27 :List of Mammals Recorded from the Buffer Zone of the Study Area

Family S. No.	Family/Genus/Species	Common Name	Conservation Status		
			IUCN	CITES	IWPA, 1972
1. **Cercopithecidae**					
1	*Semnopithecus entellus*	Common Langur	LRlc	App. I	Schedule-II
2. Bovidae					
2	*Boselaphus tragocamelus*	Nilgai	LRlc	--	Schedule-III
3. **Suidae**					
3	*Sus scrofa**	Wild Pig	LRlc	--	Schedule-III
4. **Canidae**					
4	*Canis aureus**	Jackal	LRlc	App. III	Schedule-II
5. **Hyaenidae**					
5	*Hyaena hyaena**	Striped Hyena	LRnt	--	Schedule-III
6. **Felidae**					
6	*Felis chaus**	Jungle Cat	LRnt	App. II	Schedule-II
7	*Panthera paradus fusca*	Leopard	VU	App. I	Schedule-I
7. **Herpestidae**					
8	*Herpestes edwardsii*	Grey Mongoose	LRlc	App. III	Schedule-IV
8. **Leporidae**					
9	*Lepus nigricollis*	Indian Hare	LRlc	--	Schedule-IV
9. **Hystricidae**					
10	*Hystrix indica**	Indian Porcupine	LRlc	--	Schedule IV
10. Sciuridae					
11	*Funambulus pennantii*	Five-Striped Palm squirrel	LRlc	--	Schedule IV
11. Muridae					
12	*Tatera indica*	Indian Gerbil	LRlc	--	Schedule V
12. Ursidae					
13	*Melursus ursinus*	Sloth Bear	VU	App. I	Schedule I

Note: * included in the list based on the secondary sources, LRlc – Lower Risk lest concern, LRnt-Lower Risk near threatened, VU-Vulnerable, App.- Appendix.

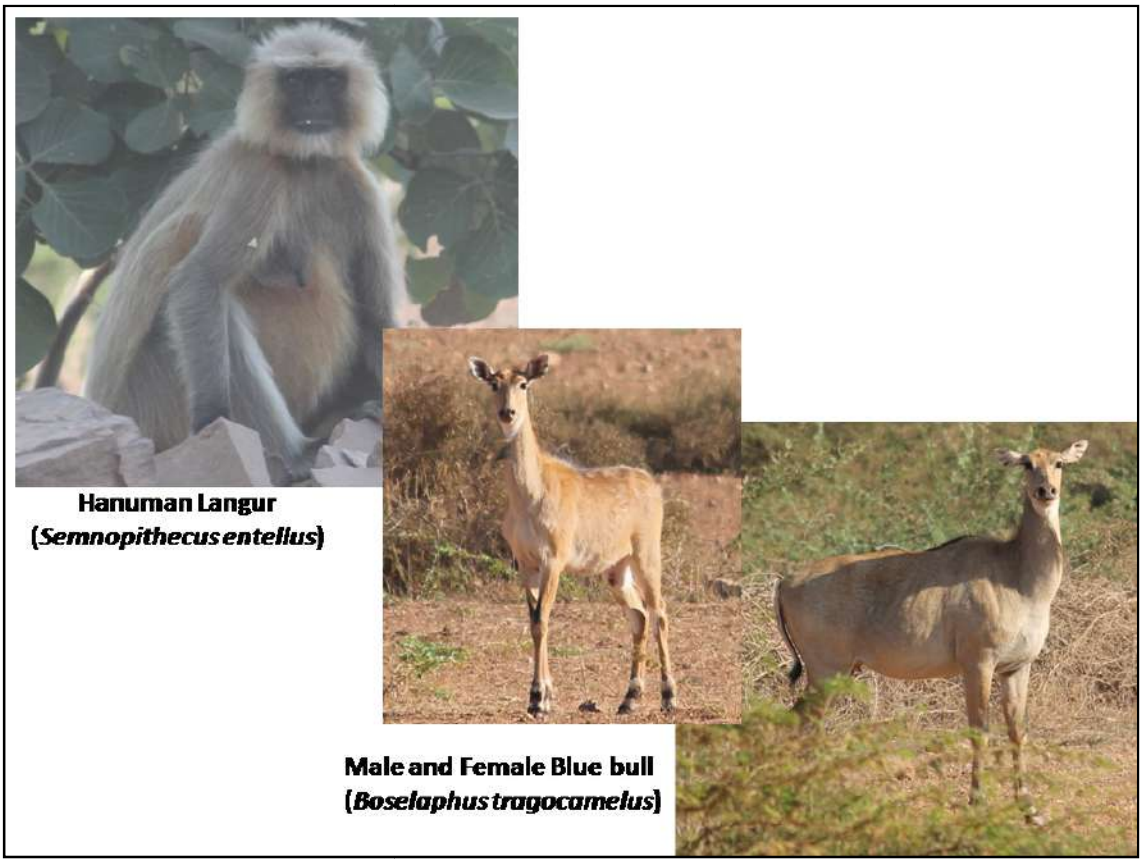


Fig. 3.6: Mammal Species reported from Buffer Zone

Endemic Fauna of the Study Area

None of the sighted animal species can be assigned endemic species category of the study area.

Migratory Birds & Winter Visitors in the Study Area

Maximum birds reported were resident. However, some common birds like Common Hoopoe is a winter visitor while Indian Cuckoo, Drongo Cuckoo and Plaintive Cuckoo are summer visitor. However, all these birds are locally migrant.

Status of the Forest, Their Category in the Study Area

Jawahar Sagar Wildlife Sanctuary/ Mukundra Tiger Reserve having common boundary is located at a distance of 1.0 Km of the existing mine lease area.

3.9 SOCIO-ECONOMIC ENVIRONMENT

3.9.1 OBJECTIVES

The broad objectives of the socio-economic impact assessment are:-

1. To study the socio-economic status of the people living in the study area.
2. To assess the impact on socio-economic environment due to the project concerned.
3. To evaluate the community development measures proposed to be taken up by the Project Proponent, if any.
4. To suggest community development measures that needs to be taken for the study area with stakeholder engagement.

The study area includes the 25 villages of Tehsil – Bundi, District Bundi within radius of 10 km from mine periphery.

3.9.2 DATA COLLECTION

The information analyzed for the project has been collected from various secondary sources, and has been supported by the extensive site visits and field observations.

Secondary: Review of secondary data (2011 census and latest available district statistical Hand Books) with respect to population and occupational structure. Various research papers of the concerned area.

Primary: A social survey for examination of the respective site and specific region in reference to its general character. A questionnaire developed to make it suitable to fulfill the objectives of the study. Primary data collected by discussions / door-to-door interviews etc. in sample villages and households. Extensive site visits and observations of the socio economic environment.

SAMPLING METHOD

The studies are conducted on a target sample; and inferences are drawn on the basis of survey.

A target sample of 15 people is interviewed selected on the basis of non probability sampling with access to the nearest habitation to the extent possible.

The proposed mine lease area is located in the Village - Dhaneshwar & Sutara, Tehsil – Bundi, District - Bundi (Raj). Bundi District has 5 Tehsils.

- Bundi
- Hindoli
- Nainwa
- Indragarh

- Keshoraipatan

Economy of Bundi

The Bundi economy has been primarily supported by agriculture, textile and tourism industry. Handicrafts industry has played a pivotal role in the economic prosperity of Bundi in Rajasthan. Bundi is a small city in the Hadoti region of Rajasthan famous for its beautiful forts, and step-well reservoirs (local name: baoris). The economy of Bundi is principally based on rapid growth of small scale industrial units and the real estate industry is also growing in the district. Agriculture contributes a major portion to the overall economic growth in Bundi. Major agricultural crops include pulses, wheat, gram, barley, cotton, tobacco and oil seeds. Important fruit trees in Bundi include orange, pomegranate, lemon, guava and mango.

Minerals

The major minerals found in the district Bundi are limestone and silica sand. The minor minerals quarried are sandstone, marble, bajri, masonary stone, morrum and China clay.

Production: 1999-00	(Tonnes)
Lime Stone	4,36,000
Masonry Stone	1,33,980
Silica Sand	14,981
Sand Stone	11,96,926
Marble	1,859
Granite	27

3.9.3 DEMOGRAPHIC PROFILE OF THE STUDY AREA

Habitation

There are 25 villages with 26,630 households in the periphery (10.0 km) of the study area. The urban part of the Bundi town is not in the radial distance of the study area. The average household size is approximately 5 members.

3.9.3.1 Population Profile

As per the Census of India 2011, the population of the study area is 42,074 comprising of scattered rural habitation. The gender distribution 51.94% are males and 48.05% are females. The gender ratio is 925 in the study area is slightly higher as compared to the districts' 922 (Bundi) and slightly lower than the states' (Rajasthan) 926 as per 2011.

Table 3.28: Population Profile

S. No.	Name	TRU	Households	Population	Males	Females
1	Amba	Rural	40	154	81	73
2	Balapura	Rural	95	457	235	222
3	Bhawanipura	Rural	255	1413	725	688
4	Bijari	Rural	238	1299	668	631

5	Biliya	Rural	331	1496	755	741
6	Chainpuriya	Rural	298	1380	703	677
7	Chhant Ka Khera	Rural	37	179	96	83
8	Dabi	Rural	1999	9818	5183	4635
9	Dasalya	Rural	223	1178	583	595
10	Dhaneshwar	Rural	992	5010	2637	2373
11	Ganeshpura	Rural	329	1643	836	807
12	Gudha	Rural	276	1330	711	619
13	Jagpura	Rural	166	793	398	395
14	Kanwarpura	Rural	342	1880	980	900
15	Karundiya	Rural	20	76	40	36
16	Kharolon Ki Jhunpariya	Rural	89	393	197	196
17	Lambakhoh	Rural	824	3910	1993	1917
18	Motipura	Rural	143	650	336	314
19	Naroli	Rural	41	279	140	139
20	Nasera	Rural	20	113	63	50
21	Peeplya	Rural	198	981	523	458
22	Rajpura	Rural	601	3077	523	1463
23	Ratanpura	Rural	26	146	523	69
24	Sootra	Rural	595	3117	1608	1509
25	Thari	Rural	215	1161	605	556
	Total		**8393**	**42074**	**21856**	**20218**

Sources: Census of India 2011

3.9.3.2 Gender Distribution in the Buffer Zone

The children population below 06 years is 18.11% of the total population. The gender ratio among children below 6 years is 921 lower to its district ratio of 922. There are 52.04% of boys child (below 06 years) among the total below 06 years population as compared to the 47.95% of total girl child population below 6 years.

Table 3.29: Gender Distribution

S. No.	Name	Total Population below 06 years	Boys Population below 06 years	Girls Population below 06 years
1	Amba	36	19	17
2	Balapura	82	44	38
3	Bhawanipura	157	76	81
4	Bijari	263	132	131

5	Biliya	258	134	124
6	Chainpuriya	190	102	88
7	Chhant Ka Khera	40	26	14
8	Dabi	1792	947	845
9	Dasalya	234	116	118
10	Dhaneshwar	937	503	434
11	Ganeshpura	317	170	147
12	Gudha	256	135	121
13	Jagpura	102	49	53
14	Kanwarpura	372	197	175
15	Karundiya	14	9	5
16	Kharolon Ki Jhunpariya	68	34	34
17	Lambakhoh	690	351	339
18	Motipura	106	53	53
19	Naroli	72	35	37
20	Nasera	36	20	16
21	Peeplya	142	79	63
22	Rajpura	596	294	302
23	Ratanpura	33	17	16
24	Sootra	568	292	276
25	Thari	259	132	127
	Total	**7620**	**3966**	**3654**

**Sources: Census of India 2011*

3.9.3.3 Literacy Profile in Buffer Zone

As per Census of India 2011, the average literacy rate is low with 38.94% of total population is literate. The literacy rate of males is below average 49.78% with respect to male population. The literacy rate of females is poor 27.19% with respect to female population in the study area. There is a wide literacy gap of 22.59% among the female literates from the male literate population.

Table 3.30: Literacy Profile

Name	Total	Males	Females
Amba	60	43	17
Balapura	206	134	72
Bhawanipura	921	572	349
Bijari	166	152	14
Biliya	708	460	248

Chainpuriya	566	385	181
Chhant Ka Khera	66	38	28
Dabi	4559	2896	1663
Dasalya	357	232	125
Dhaneshwar	1796	1209	587
Ganeshpura	438	350	88
Gudha	423	286	137
Jagpura	466	303	163
Kanwarpura	318	272	46
Karundiya	14	8	6
Kharolon Ki Jhunpariya	192	130	62
Lambakhoh	1778	1096	682
Motipura	267	180	87
Naroli	82	55	27
Nasera	6	5	1
Peeplya	504	340	164
Rajpura	1011	697	314
Ratanpura	32	29	3
Sootra	995	725	270
Thari	449	285	164
Total	**16380**	**10882**	**5498**

Sources: Census of India 2011

3.9.3.4 Occupational Structure in Buffer Zone

The work participation rate is 41.79% and the non working population constitutes of 58.20% in the study area as per the Census of India, 2011.

The main workers are only 35.51% largely comprises of men (26.37%). Women workers (9.14%) are low in the category of main workers.

The marginal workers are 6.28%. The working women are more (4.50%) in marginal category as compared to the male (1.782%) counterparts in this category.

The non working population among men (23.80%) and women (34.49%) is high.

Table 3.31: Occupational Structure

Name	Main Workers			Marginal Workers			Non- Workers		
	Total	Males	Fem.	Total	Males	Fem.	Total	Males	Fem.
Amba	43	37	6	0	0	0	111	44	67
Balapura	112	109	3	21	17	4	324	109	215
Bhawanipura	395	382	13	5	4	1	1013	339	674

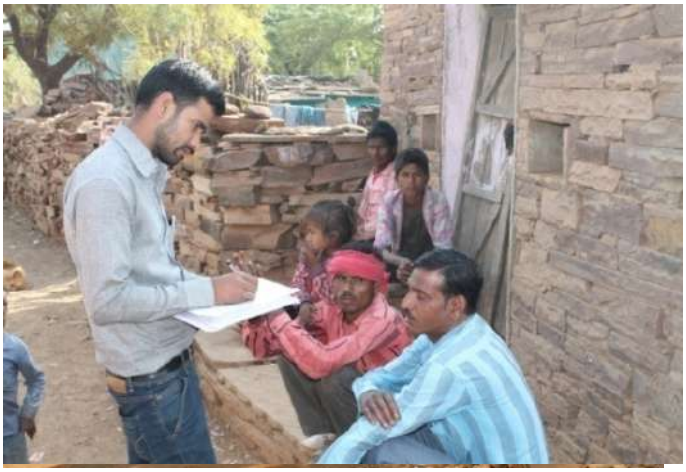
Bijari	407	332	75	107	18	89	785	318	467
Biliya	639	343	296	120	76	44	737	336	401
Chainpuriya	331	304	27	415	83	332	634	316	318
Chhant Ka Khera	62	47	15	6	4	2	111	45	66
Dabi	3313	2678	635	167	82	85	6338	2423	3915
Dasalya	422	316	106	116	26	90	640	241	399
Dhaneshwar	1843	1347	496	341	80	261	2826	1210	1616
Ganeshpura	566	404	162	294	67	227	783	365	418
Gudha	584	401	183	6	4	2	740	306	434
Jagpura	267	210	57	221	27	194	305	161	144
Kanwarpura	606	468	138	140	25	115	1134	487	647
Karundiya	41	21	20	2	1	1	33	18	15
Kharolon Ki Jhunpariya	221	112	109	12	6	6	160	79	81
Lambakhoh	1348	1048	300	132	59	73	2430	886	1544
Motipura	123	91	32	225	92	133	302	153	149
Naroli	125	66	59	10	5	5	144	69	75
Nasera	44	22	22	0	0	0	69	41	28
Peeplya	471	272	199	100	31	69	410	220	190
Rajpura	1185	882	303	54	8	46	1838	724	1114
Ratanpura	63	38	25	1	0	1	82	39	43
Sootra	1279	850	429	109	21	88	1729	737	992
Thari	402	279	123	28	12	16	731	314	417
Total	**14892**	**11059**	**3833**	**2632**	**748**	**1884**	**24409**	**9980**	**14429**

**Sources: Census of India 2011*

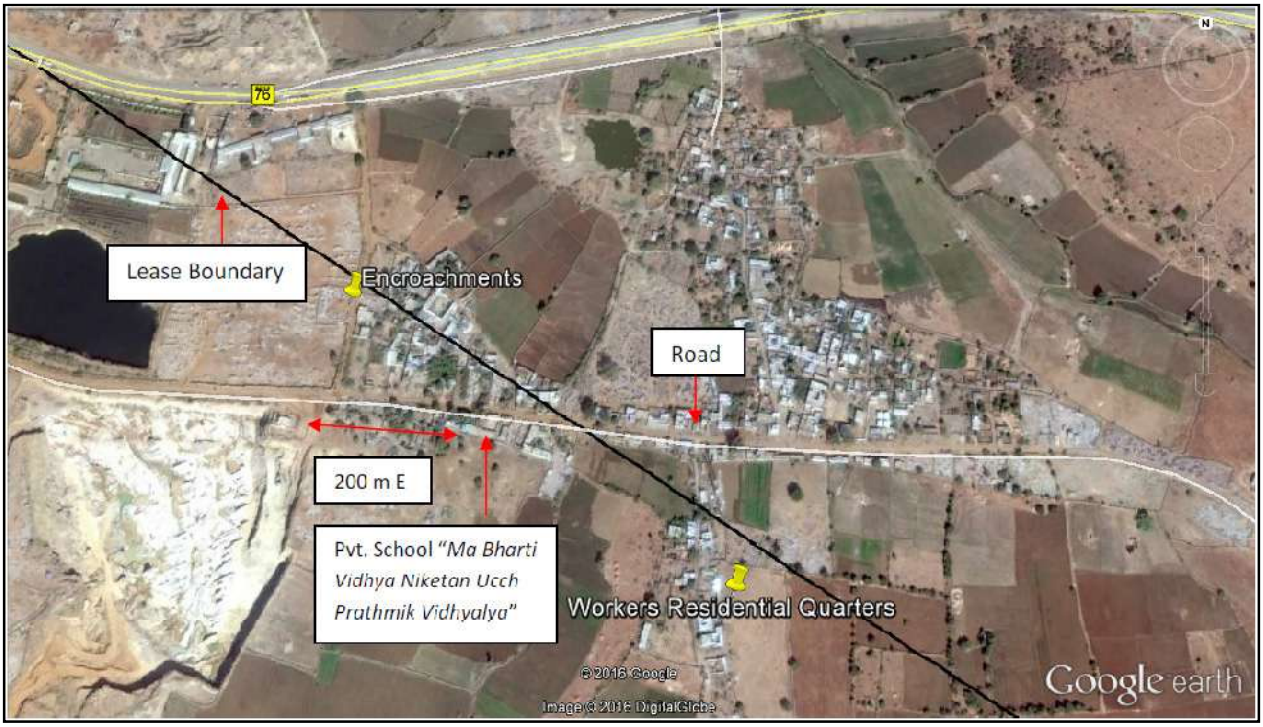
3.9.4 SOCIAL INFRASTRUCTURE

The nearest habitations from the lease are:-

- Habitation of Sutara is 1.48 km NW from the WNW Lease boundary.
- Habitation of Dasaliya is 1.36 km WSW from the W Lease boundary.
- Habitation of Gurha is 2.07 S km from the SW Lease boundary.



- Habitation of Dhaneshwar as per the toposheet (1976) and initially has been at a distance of 1.24 km NE from ENE Lease boundary. Overtime there were houses of village Dhaneshwar extension towards the ENE lease boundary. Owing to a road within the Lease Hold Boundary, there are few extended Dhaneshwar village houses and a private School, encroaching inside the ENE Lease boundary between the pillars A4 to A5. There shall be no mining activity required in the area occupied by the encroached houses in the lease boundary and there entry is restricted in the Mining region hence Rehabilitation & Resettlement is not required, however precautions will be taken as given in Section IV.



The School & few houses are in the lease hold area owing to the Road. There are Mine workers residential quarters & 150 Toilets & bathrooms also inside the lease hold area as marked above.

a) Educational Facilities

Nearly all villages have a Government Primary School in the study area.

Nearest School is situated at a distance of 1.342 km (ENE) Govt. Primary School, Dhaneshwar ;Govt. Primary School, Sutara 2.575 km NW. Private and Public schools are available in Dabi Town.

- Owing to a road layed within the Lease Hold Boundary, a private School "*Maa Bharti Vidhya Niketan Ucch Prathmik Vidhyalya*" has overtime also encroached within the ENE Lease Boundary.
- There are approx. 200 students in the School. The entrance faces North and hence the mining activities are towards the South (back side) of the school.
- The distance of the encroached private School from the nearest "*Bad Wala* Pit" is **200 m E** & from "*Tamatar Wala* Pit" is **2.38 km E** being at a safe distance of more than 45 meter as per the MMCR 1986 and its subsequent amendment 12/07/2013. Rehabilitation or resettlement will not be required as the entry towards the mining region is restricted for the students hence adequate precautions shall be taken as given in Section IV.
- Following are the pictures of "**Maa Bharti Vidhya Niketan Ucch Prathmik Vidhyalya**"

Entrance facing North towards the road.

Shops outside the School.

There are Four classrooms in the School. Picture showing West Boundary of the School

The School Timings are morning 7:00am to 1:00 pm

East Boundary of the School

Back side of the School (South Boundary) facing the Mine lease.

b) Medical Facilities

There are many PHC and CHC available in the study area. Govt. Hospital Dabi 5.093 km (NW), Govt. Dispensary, Dhaneshwar are situated 1.306 km. (ENE) from the core zone.

Communication and Post Office

Public telephone booths are available in most of the surrounding villages. Nearly every home has telephone and mobile facility. Head Post Office, Dabi is situated at a distance of 5.449 Km, WNW.

c) Others

Wells and hand pumps are dominant sources of drinking water and other domestic consumption. Kota Railway Station 28.674 km (ENE) is the nearest railway station and Kota Airport is 28.693 km (ENE) is the nearest airport from the core zone. Nearest town is Dabi 3.849 Km, NW and nearest Police Station is Dabi from the core zone of study area. Electrical supply is available in all nearby villages.

Name	Near Village	Distance and Direction (From Lease Boundary)
Medical Facility		
Govt. Hospital	Dabi	5.093 km, NW
Govt. Dispensary	Dhaneshwar	1.306 km, ENE
Govt. Dispensary	Sutra	2.502 km, NW
Temples		
Baba Ramdev Temple	Dhaneshwar	1.286 km, ENE
Shivalya Temple	Sutra	2.447 km, NW
Ambey Rani Mata Ka Mandir	Dhaneshwar	1.314 km, ENE
Schools		
Govt. School	Dhaneshwar	1.342 km, ENE
Ma Bharti Vidhya Niketan	Dhaneshwar	within ENE Lease Boundary
Govt. School	Sutra	2.575 km, NW

Table3.32: Socio-economic snapshot of Dhaneshwar Village

Field Survey	
Transportation was available in all the aspects :	Bus Govt. Roadways / Private - Tractors, Scooters, Motor Cycles, (Public transport available). Bus stop 470 m ENE
Roads were observed to be	Mix of *Kutcha*/ *Semi-Pucca* & *Pucca*, Painted & Cemented.
Electricity Supply has been	Irregular Non Renewable energy sources are not used in the study area.
Nearest dwellings	Nearest Habitations Dhaneshwar 1.24 km NE , & Kheda S lease Boundary and is a mixed of *Kutcha* / *Semi-Pucca* & *Pucca*
Main Food	Chapatti, Sabji, Dal
Potable Water	Tanker Supply

Festivals	Holi, Diwali, Gangore, Raksha Bandhan, Teej.

Source: Field survey and observations.

3.9.5 SOCIO-ECONOMIC SURVEY

Habitation at village Dhaneshwar is limited with households between 975-1000, and the houses were a mix of semi –permanent and permanent. A temporary hutment habitation was found in Kheda Gaanv (S of the South lease Boundary), the village has not been listed in the Census of India 2011 because of the few temporary hutments (approx 30).

Occupational structure

As told by the local residents Babulal 58 year old, (Carrier loader), "*employment is available for those willing to work. Pay scales are generally low as compared to the inflation in the area. The housewives don't work (and at times are not allowed) and like my sons, there are many more people who don't work by choice".*

Major occupations observed in the nearby areas were largely of Agriculture and the Farmer Jagdish earns upto Rs. 20,000/- per month from farming approximately. There are petty shop owners (*Parchoone ki Dukan).* There are jobs in Bundi Industrial area and institutions. Mining also provides large number of employment to the villagers of Sutara, Dhaneshwar.

The proposed mine provides employment opportunities to local workers from the study area, and the remuneration and compensation are as per the Mines Act, 1952 (Amendment 1983), The Mines Rules, 1955 (Amendment 1986 & 1989), with adequate reference from Minimum wages act and compensation act & rules. The workers at the proposed mine are happy with the long lasting relationship with the mine holder. Smt. Kiran says she likes the weekend off of Sunday and there are 2 shifts of working as per 8 hours job.

Protecting the human rights through Cultural adequacy and religious rites.	Ambey Rani Mata Ka Madir ,Dhaneshwar, 1.314 km ENE

There are temples in every village indicating a high social capital with common folkways. The rainy season is very special with the Kajli Teej Festival.

Education

The standards of education were low. For higher education (Degree college) village students commute to Bundi. Road connectivity was found through Dhaneshwar bus stand. Illiteracy among girl child was found to be a grave issue in the village.

Due to low awareness on cleanliness, personal hygiene in village Kheda & Dhaneshwar requires attention.

Focus group discussions:-

Date : 17/11/2015 Time : Afternoon	
Participants Village women and Shubhangi (FAE-SE), Puran Singh (AFAE - SE)	
Gopal	Jagdish
Santosh	Durga Lal
Ratan	Kirtan
Madhup	Harish
Nandu	Pankaj
Koka	Nikhil

The village men have many stories to them about their living. Santosh (35) has 3 boys and when asked why he did a third child after 2 babies he replied he wanted to have girl.

When asked about the safety and security in the villages, the group of men replied that the village areas are safe for women.

Cattle breeding are also a major activity undertaken of largely Cows and Buffaloes.

Village women do not operate mobiles and public booth facility is widely available. They mainly earn between Rs. 5000-10,000 per month. Women are aware in the nearby villages but strengthening them with income generation programmes would result into empowerment.

Health

As per Raju (30) year old health services are at a distance of 1.0 km, Govt. Hospital Dhaneshwar. Rajesh Kumar (40) exclaimed that the *Aanaganbadis'* are in Dasaliya and Sutara villages. He is an auto-driver and commutes in Bundi town. Last demise in his family was due to a paralysis attack.

Nasruddin (58) believes that the health facilities should be both good quality and affordable. He believes an Ambulance in the villages would make emergency cases faster to the City Hospital. Ambulance 108 is available in the area.


Status of households



In village Kheda , Bathrooms were found to be outside the houses in the Pucca Houses whereas in the Semi pucca houses the open facilities were used for toilets and bathing. More than 3 rooms are available in each house. The flooring is cemented and potable water is taken from the nearest Well. Major fossil fuel for Cooking is largely bio-gas through the household *Chulha* among women residents.

Average income in the villages of the study area is between 10000 – 20000 per member, where-in both husbands and wives earn together it goes upto 30,000 per month. Electricity supply is above irregular.

Radio fm are popular and internet is not medium of mass communication.

5000- 6000 Monthly expenditure is on food & groceries as one sack of wheat costs Rs. 1200/- exclaimed by Durg lalji.

Clothing is second and medicines form major expenses, hence no savings can be done. Suresh (19), believes that there should be employment opportunities in villages for 10th pass, as per Suresh even B.A. pass don't get jobs.

Major bottlenecks observed in the villages Dhaneshwar and Sutara :-

- Higher education for Girl child.
- Lack of personal hygiene and awareness on cleanliness.
- Health Facilities Development
- Job opportunities

The survey revealed that people appreciated the contribution of the proposed mine, directly in the form of employment and also for various social welfare activities funded through the Gram Panchayat. (Details as given in Section VII) A high percentage of people recognized the social contribution of Dhaneshwar mine.

Public Water Facility by M/s Kanhaiya Lal Rameshwar Das, Dhaneshwar.

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SECTION - IV

INDEX

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4.0 ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

4.1 GENERAL

Depending on the nature of activities and baseline environment status, the impacts were assessed. The following parameters are of significance in the Environmental Impact Assessment and are being discussed in detail:-

1. Land Environment;
2. Water Environment;
3. Air Environment;
4. Noise Environment;
5. Biological Environment;
6. Socio-Economic Environment.

4.2 LAND ENVIRONMENT

Mining and its subsequent activities have been found to degrade the land to a significant extent. Overburden removal from the mine area results in a very significant loss of top soil and decides the viability of project also.

4.2.1 SOURCE

The ratio of overburden excavated to the amount of mineral removed is called the stripping ratio.

Impact of mining on land environment gets reflected in land use pattern of the respective area because the more land gets exposed to erosion by losing its green cover or by getting disturbed otherwise due to mining (excavation, overburden, dumping etc.) and related activities, its water resources gets damaged, soil gets contaminated, part of flora and fauna gets lost, air and water gets polluted and the cumulative effects push the land towards degradation. The process works through a cycle known as land degradation cycle.

The magnitude and significance of impact on environment due to mining varies from mineral to mineral and also on the potential of the surrounding environment to absorb the negative effect of mining.

Out of the total area of mining lease (490.5509 ha.), active mining operations are confined in the area of 219.196 ha. due to extraction of mineral and waste generation. Greenery bears a pivotal role in protecting the quality of all aspects of environment.

4.2.2 IMPACT PREDICTION & MITIGATION MEASURES

Impact	Mitigation Measures
Land Reclaimation Method	Out of the total excavated area 219.196 ha., backfilling will be done in 83.296 ha. which will be later on planted to bring get back to the position before the mining activities were commenced and partly will be used as a water reservoir (135.90 ha.) which will help in recharging the ground water level.

4.3 WATER ENVIRONMENT

4.3.1 SOURCE

- Open - Cast Mining;
- No intersection of water table;
- No discharge in the river.

4.3.2 IMPACT PREDICTION & MITIGATION MEASURES

Ground Water	
Possible Impact	**Management**
Quantitative:-	
Mine workings may intersect ground water table.	➢ The lowest elevation of the surface is 460 MSL. The level of ground water table is around 60 meter below from the general level i.e. 400 MSL. It fluctuates around 75 - 80 meters in pre-monsoon and post-monsoon season. Thus, the level of ground water table will fluctuate between 400 MSL to 405 MSL. The ultimate pit limit will be 430 MSL. Hence, ground water table will not be encountered during mine working.
Abstraction of water for daily use may lead to depletion of water table.	➢ Daily water demand is only 30.0 KLD which will be met through tanker supply and existing water reservoir pits. Since, this quantity is very low, no significant impact is envisaged.
Qualitative:-	
The sewage from soak pit may percolate to the ground water table and contaminate it.	➢ Daily sewage generation is to the tune of only 2.5 KLD. Ground water table is at a depth of 75 - 80 m from ground. Hence, contamination is not expected due to percolation.
Mining may generate effluent which could contaminate ground water.	➢ The minerals being mined are relatively insoluble in water. Hence, no such ground water contamination is envisaged.
Surface Water	
Possible Impact	**Management**
Surface water bodies may be affected due to mining in terms of quality and quantity.	➢ There is no perennial stream, Nallah etc. passing through the lease area.

	➢ There is no water reservoir in the form of pond or lake in lease area.
Surface drainage may be affected due to mining.	➢ Natural drainage will not be affected in any way due to mining; rain water will follow the natural topography of the lease area.

4.4 AIR ENVIRONMENT

4.4.1 AIR QUALITY IMPACT PREDICTIONS (AQIP)

The major sources of air pollution due to the proposed mine is dust generation due to excavation, loading and transportation of mineral, wind erosion of exposed material. In this present study, United States Environmental Protection Agency (USEPA – 42 series) approved mathematical equations have been used to predict concentrations for different operations in mining including the mineral transportation.

4.4.2 DETAILS OF EMISSIONS

The sources of pollutants were identified. Mineral excavation was identified as area source emission, loading and unloading of mineral as appoint source and transportation routes were identified as line source. Appropriate mathematical equations will be used to calculate the emission rates for the various mining operations. Due to low sulphur content in diesel and patrol, the SO_2 emission due to vehicular movements was not considered.

A. Area source emission – Mineral/ Waste Excavation

Particulars	SPM	PM_{10}	$PM_{2.5}$
Quantity, TPA	9,10,000 (2,50,000 + 6,60,000)		
Operational Hours per year	3000		
Activity rate, t/hr	304		
USEPA Emission Equation in lb/hr	$78.4\ (s)^{1.2} / (M)^{1.3}$	$0.75[18.6\ (s)^{1.5} / (M)^{1.4}]$	$0.022[78.4\ (s)^{1.2} / (M)^{1.3}]$
Emission of dust, g/sec	7.845	2.2117	0.17259
Uncontrolled Emission rate, g/s/m²	0.0007845	0.00022117	0.00001726
Controlled Emission rate, g/s/m²	0.0003138	0.0000885	0.0000069

B. Loading of Mineral/ Waste

Particulars	SPM	PM_{10}	$PM_{2.5}$
Quantity, TPA	9,10,000 (2,50,000 + 6,60,000)		
Operational Hours per year	3000		
Activity rate, t/hr	304		
USEPA Emission Equation in lb/ ton	$1.16 / (M)^{1.2}$	$0.75[0.119/ (M)^{0.9}]$	$0.019[1.16/ (M)^{1.2}]$

Emission of dust, g/sec	2.80	0.430	0.0533
Uncontrolled Emission rate, g/s/m²	0.0028	0.00043	0.0000533
Controlled Emission rate, g/s/m²	0.00056	0.000086	0.0000107

C. Haulage Emissions (unpaved) – Transport of Ore & OB- Working Pit to Mining lease boundary/ dumping.

Particulars	PM_{10}	$PM_{2.5}$
Quantity, TPA	9,10,000 (2,50,000 + 6,60,000)	
Operational hours per day	10	
Capacity of each truck	20 T	
Total number of trips per day	152	
Lead length per trip, km	3 (two way)	3 (two way)
USEPA Emission Equation, lb/VMT	[(k) x [(*s*/12)^0.9] x [(W/3)^0.45]]((365-p)/365))	
Emission, kg/ VKmT	1.176	0.511
Uncontrolled Emission rate, g/sec/m	0.00392	0.0017
Controlled emission rate, g/sec/m	0.0049	0.002

D. Haulage Emissions (Paved) – Transport of Ore - Mining lease boundary to end use

Particulars	PM_{10}	$PM_{2.5}$
Quantity, TPA	2,50,000	
Operational hours per day	10	
Capacity of each truck	20 T	
Total number of trips per day	42	
Length per trip, km	10	10
USEPA Emission Equation, lb/VMT	[[(k) x [(sL/2)^0.65] x [(W/3)^1.5]] - C]((1- (p/1460))	
Emission, kg/VKmT	0.0552	0.0138
Emission rate, g/sec/m	0.000062	0.000015

Note: Emission factor computed based on silt content of 10% and moisture content of 10%.

4.4.3 AIR QUALITY MODELLING

In order to predict the particulate and gaseous emissions, AERMOD View Version 7.1.0 was used to predict changes in air quality i.e., maximum ground level concentration (GLC's) of PM_{10}, $PM_{2.5}$, NO_x and CO due to the proposed mining activity. The inputs required for the model is:-

- Hourly meteorological data
- Source data

- Receptor data
- Programme control parameters

The GLC's were predicted for the scenario, with EMP in the mine.

4.4.3.1 Results and Conclusions

The ground level concentrations are computed for 24-hr average. The maximum ground level concentrations of PM_{10}, $PM_{2.5}$, NOx and CO from the different mining activities for study period with EMP are given in table 4.1 and were observed to be 15.6 µg/m³, 6.3 µg/m³, 5.9 µg/m³ and 9.8 µg/m³ respectively. The maximum GLC's were falling within the pit area/lease area for the given meteorological and topographical conditions.

Table 4.1: Predicted 24-Hourly Short Term Incremental Concentrations

Pollutant	Maximum Incremental GLC's, µg/m³
PM_{10}	15.6
$PM_{2.5}$	6.3
NOx	5.9
CO	9.8

The combined impact on ambient air quality at different locations within the study area due to the proposed mining based on the model output for PM_{10} & $PM_{2.5}$, NOx and CO for the study period is given in table 4.2 below. The isopleths of the same are given in Figures 4.1 to 4.4 respectively.

Table 4.2: Total expected ground level concentrations at different locations in the study area for study period (winter season)

Location	Ground Level Concentrations of PM_{10} in µg/m³			
	Predicted	Background (Max.)	Total Expected	CPCB Standard
Project Site	15.6	43.1	58.7	100
Gudha	1.7	50.2	51.9	100
Chainpuriya	0.8	38.4	39.2	100
Dhaneshwar	0.8	56.3	57.1	100
Tapur Ki Khan	0	35.6	35.6	100
Dasoliya	1.7	31.5	33.2	100
Sutara	0.8	29.6	30.4	100
Location	**Ground Level Concentrations of $PM_{2.5}$ in µg/m³**			
	Predicted	**Background (Max.)**	**Total Expected**	**CPCB Standard**
Project Site	6.3	22.4	28.7	60
Gudha	0.7	28.4	29.1	60
Chainpuriya	0.4	20.9	21.3	60

Dhaneshwar	0.4	31	31.4	60
Tapur Ki Khan	0	19.6	19.6	60
Dasoliya	0.7	17.7	18.4	60
Sutara	0.4	15.7	16.1	60
Location	**Ground Level Concentrations of NOx in µg/m³**			
	Predicted	**Background (Max.)**	**Total Expected**	**CPCB Standard**
Project Site	5.9	23.5	29.4	80
Gudha	0.3	19.9	20.2	80
Chainpuriya	0.2	17.3	17.5	80
Dhaneshwar	0.2	23.8	24	80
Tapur Ki Khan	0	14.3	14.3	80
Dasoliya	0.3	14.6	14.9	80
Sutara	0.2	15.9	16.1	80
Location	**Ground Level Concentrations of CO in µg/m³**			
	Predicted	**Background (Max.)**	**Total Expected**	**CPCB Standard**
Project Site	9.8	1124	1134	2000
Gudha	1.1	1360	1361	2000
Chainpuriya	0.6	942	943	2000
Dhaneshwar	0.6	1422	1423	2000
Tapur Ki Khan	0	965	965	2000
Dasoliya	1.1	960	961	2000
Sutara	0.6	845	846	2000

It is seen from the above table, the GLC's obtained at various locations for the study period are well within the CPCB standards (dated 18th November, 2009).

From the above, it could be clearly seen that due effective implementation of various control measures as discussed in the proposed mine, there will not be any significant impact on the ambient air quality in the region.

Figure 4.1: Isopleths Showing Predicted Incremental GLC's of PM_{10}

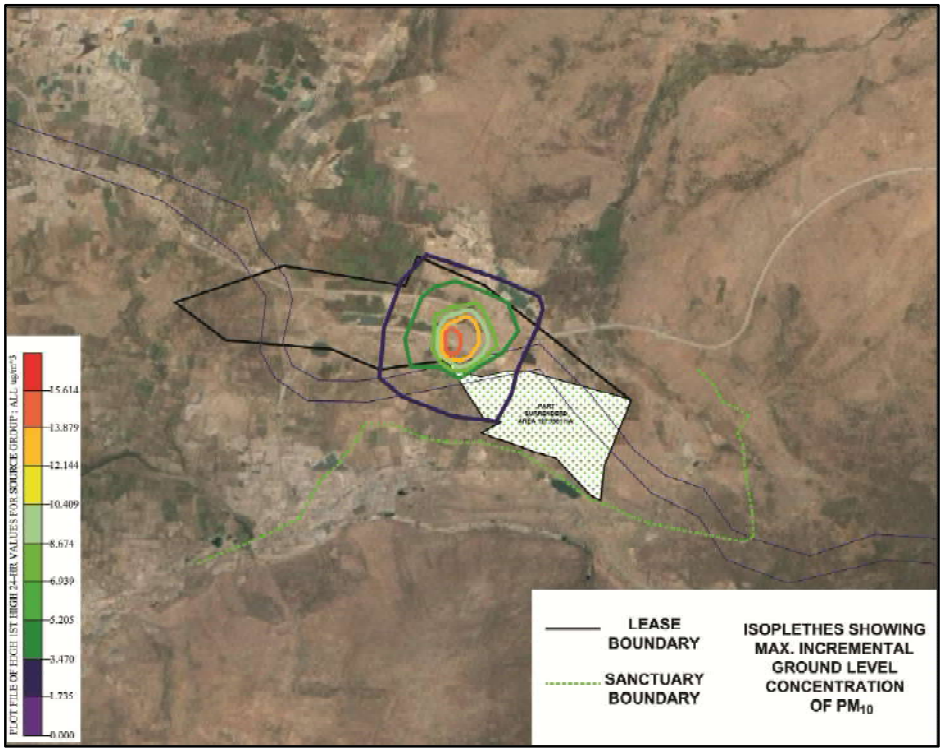


Figure 4.2: Isopleths Showing Predicted Incremental GLC's of $PM_{2.5}$

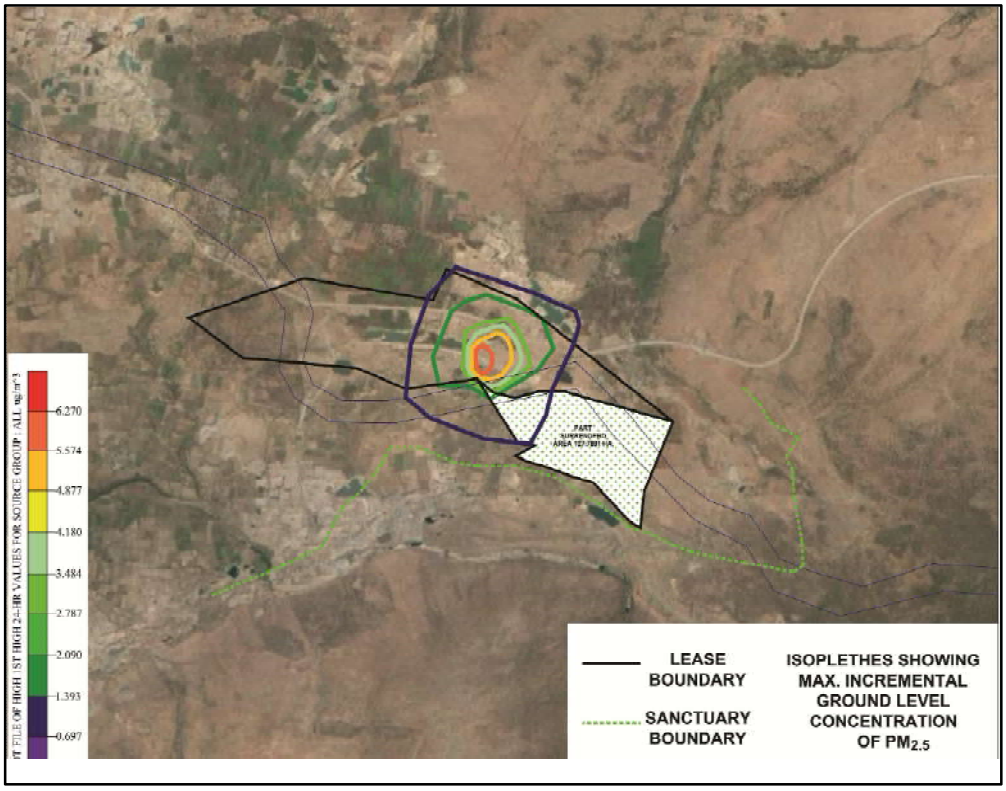


Figure 4.3: Isopleths Showing Predicted Incremental GLC's of NOx

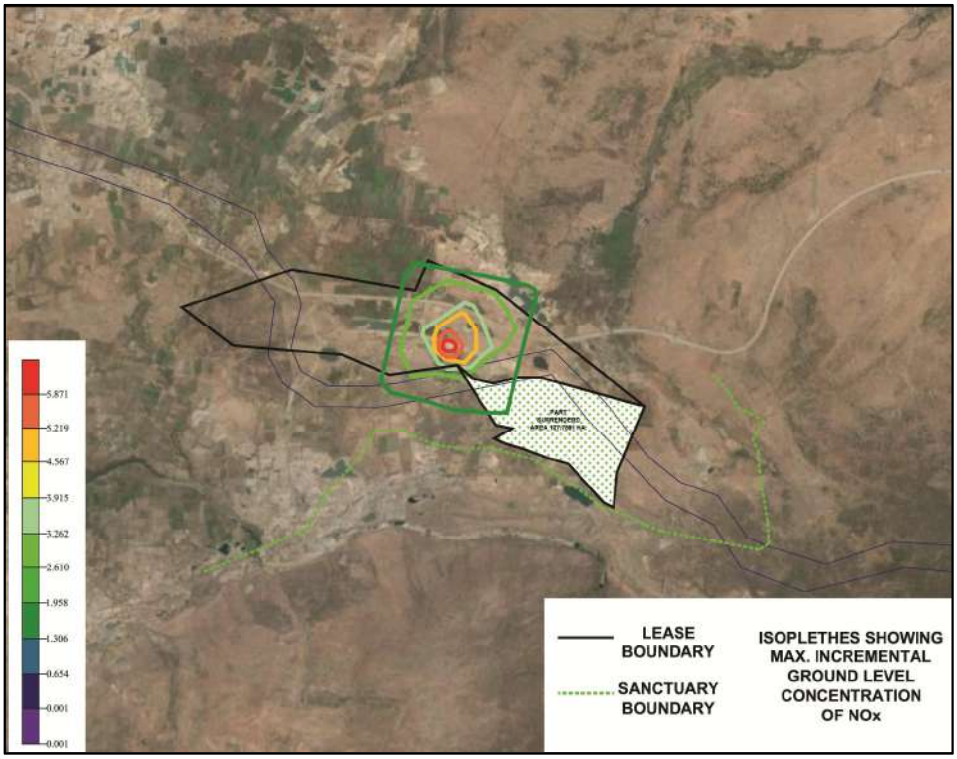
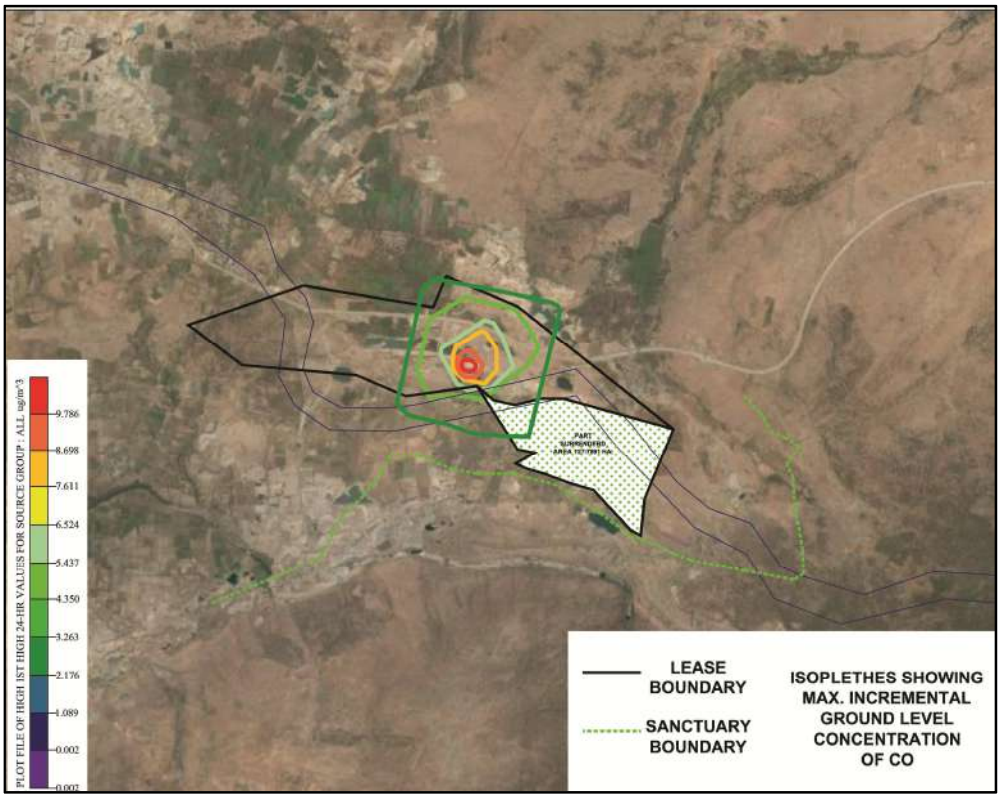


Figure 4.4: Isopleths Showing Predicted Incremental GLC's of CO



4.5 NOISE ENVIRONMENT

4.5.1 SOURCE

The noise generating sources are operation of mining equipments and movements of vehicles. Transportation activities are the main sources of noise production.

4.5.2 IMPACT ON NOISE

To understand the combined effect of these noise levels on the nearby community, Custic 3.2 (Lakes Environmental – USEPA approved) scientific model has been used to estimate the noise levels at different distances from the proposed activity. All the major noise generating machineries like Excavator, tippers/trucks, etc., are considered in this model. The noise level at various locations due to different sources is calculated based on the following formula:

$$Lp_2 = Lp_1 - 20 \log (r_2 / r_1) - Ae_{1,2}$$

where, Lp_1 and Lp_2 are sound levels at points located at distance r_1 / r_2 from the source and $Ae_{1,2}$ is the excess attenuation due to environmental conditions. Combined effects from different sources at various locations are then computed by the following equation:

$$Lp\ (total) = 10 \log (10\ Lpx_{/10} + 10\ Lpy_{/10} + 10\ Lpz_{/10})$$

Where Lpx, Lpy, Lpz are noise pressure levels at a point due to different sources.

The predicted noise levels based on the above analysis in the nearby villages, considering that there is no attenuation on account of barriers or green belt/ plantation will be as follows:-

Location	Max. Existing Leq (day)	Predicted	Resultant Max.	CPCB Standard, Leq(day)
Project Site	52	62	62.4	75
Gudha	53.5	36.9	53.6	55
Chainpuriya	52	39.7	52.2	55
Dhaneshwar	50.6	39.7	50.9	55
Tapur Ki Khan	52	28	52	55
Dasoliya	53.5	39.1	53.7	55
Sutara	52.6	37.9	52.7	55

All values are in db (A).

From the above, it is clearly seen that there will be no significant impact on the surrounding community due to noise from the proposed activity.

Further due to natural attenuation effects, by proper green belt development, design/ maintenance of vehicles, provision of PPE's to workers, etc., the impact on noise levels will be minimal.

4.5.3 MITIGATION MEASURES

Impact	Mitigation Masures
➢ Noise impact due to mining activities. ➢ Noise impact due to vehicular movement. ➢ Auditory impact.	➢ The noise levels from all those sources are periodical and restrict to particular operation. ➢ The noise measurement data indicated that present noise levels in the study area is within the permissible limits of National Ambient Noise Quality Standards. ➢ Periodical monitoring of noise will be done. ➢ No other equipments accept the transportation vehicles and excavator for loading will be allowed. ➢ Noise generated by these equipments will be intermitted and does not cause much adverse impact. ➢ Proper maintenance of all equipments/ machines will be carried out which help in reducing noise during operations. ➢ Plantation will be taken up along the approach roads and vicinity of river bank. The plantation minimizes propagation of noise and also arrests dust. ➢ Ear muffs will be provided while working on mining equipments. ➢ Regular health checkup will be conducted for any such health implications.

4.6 BIOLOGICAL ENVIRONMENT

4.6.1 IMPACTS, EVALUATION AND MITIGATIONS

Potential or likely impacts due to the proposed mining may be, Loss of adjacent forest habitats and biodiversity, Loss of vegetation cover and biodiversity, Loss of aquatic ecosystem and biodiversity, Effects of heavy transportation on habitats and faunal groups, Impact on water and land components, Changes in ambient air quality and degradation of vegetation, Impact of Noise on faunal groups, Accidental mortality of faunal groups, Impact to threatened floral species, Impact to threatened faunal species, Impact on Animal movement. Keeping all this in mind the following mitigations have been suggested under environmental management plan.

With the above understanding of the role of plant species as bio-filter to control air pollution, appropriate plant species (mainly tree species) have been suggested conceding the area/site requirements and needed performance of specific species.

Impact	Evaluation	Mitigation
Loss of adjacent forest habitats and biodiversity	The expansion is coming up in the same lease area. The increase in the production capacity may affect the surrounding habitats & biodiversity.	As the expansion is coming in the same mine lease area (core zone) is not consists of any critical/ unique habitat or designated forest land vulnerable to the fragmentation or isolation. Therefore the proposed expansion project activities will not have any impacts like loss of true forest habitat, floral species and associated faunal diversity. However 33% area of the existing mine site is already covered under the green belt. Further impacts due to the expansion activities can be mitigated through effective and additional plantation with variety of species in the existing site and in the surrounding villages

Impact	Evaluation	Mitigation
Loss of vegetation cover and biodiversity (core zone).	The expansion is coming up in the same lease area. So there will no impact on as associated biodiversity of the core zone area.	There is no any clearing of existing sparse vegetation within the lease area so no major impact on floral composition and associated faunal species at local level. Now it was suggested that approx 800 trees (Local trees species like: *Cassia fistula, Delbergia sissoo, Delonix regia, Polyalthia longifolia etc*) will be planted in the mine area and nearby villages, to reduce the impact of expansion activities in the surroundings of the existing mine site.

List of plant species suggested to plant and improve green belt in and around the existing mine

S. No.	Species Name	Local Name	Species Characters
1.	*Acacia nilotica*	Desi Babul	*WT, ST*
2.	*Albizzia lebbek*	Shiris	*WT*
3.	*Annona squamosa*.	Sitafal	*CT, FT, ST*
4.	*Azadirachta indica*	Neem	*CT, MT*
5.	*Dalbergia sissoo*	Sisam	*WT, ST*
6.	*Pongamia pinnata*	Karanj	*MT, CT*
7.	*Emblica officinalis*	Ambla	*CT, ST, FT*
8.	*Ficus bengalensis*	Bad or Vad	*CT, LT, FT*
9.	*Ficus religiosa*	Piplal	*CT, LT, FT*
10.	*Holoptelea integrifolia*	Churel	*WT, LT*

11.	*Lawsonia inermis*	Mehndhi	*Sh*
12.	*Mangifera indica*	Aam	*CT, LT, FT*
13.	*Pithecellobium dulce*	Jungal Jalebi	*CT, MT*
14.	*Syzygium cumini*	Jamun	*WT, FT*
15.	*Tamarindus indica*	Emli	*CT,MT, FT*
16.	*Terminalia arjuna*	Arjun	*WT, LT*
Species Characters: SH=Shrub; WT sp= Wild Tree species; CT sp= Common Tree species; FT = Fruit Tree; ST = Small Tree; LT = Large Tree and MT = Medium Tree.			

1. Overall 16 plants species have been suggested to grow in and around the mine lease area.

Impact	Evaluation	Mitigation
Changes in ambient air quality (dust & gases) and degradation of vegetation	Due to the proposed mining project transportation of material with the movement vehicles will increase by two folds of its existing in the lease area surroundings. Dust concentration is expected to increase because of Heavy vehicle movements in the area.	Greenbelt development program with specific plant species which can act as bio-filters can further reduce the level of pollutant concentration and also will improve the overall ambient air quality in and around the project environment. Provision of spraying water can help to reduce dust emission on roads. Moreover, the following tabulated plant species suggested includes few shrubs and trees species of wild, common and species of ornamental values for effective dust control. The level of dust control efficiency of these species ranges from minimum of 6.12% by *Acacia nilotica* to maximum of 35.39% by *Holoptelea integrifolia*. The area of plantation suggested mainly focused along the road side where the vehicle pressure is likely to increase during the mining activities especially during sand transportation. In each location, a wider range plant species are suggested to maintain the floral diversity and improve the survival rate. Therefore, the species list includes predominately wild and few common tree species with high rate of dust control efficiency *(Cassia fistula-23.03%, Butea monosperma- 24.44%, Azadirachta indica -25.54. Polyalthia longifolia- 29.84%, Terminalia arjuna-30.54% and Holoptelea integrifolia 35.39%).* The location 2 includes the stretches of all the roads passing through the village area which are under the influences of project related activities mainly vehicle pressure due to transporting sand. A list of 11 species has been recommended to develop avenue plantation along the road sides. This list

		includes mainly common species of aesthetic values with colorful flowers and also fruit trees to attracts birds *Annona squamosa*, *Magifera indica*, *Ficus religiosa*, *Syzygium cumini*, are some of the fruit trees while *Delonix regia* (red), *Cassia fistula* (yellow) and *Butea monosperma* (bright orange) produce different colors of flowers in different seasons which can attracts lots of birds and insects in addition to increase the aesthetic value of the areas. These species are also control dust particulate matters effectively. Though *Peltophorum pterocarpum* and *Cassia siamea* are the addition two ornamental species not given in the list suggested to plant along the road sides of village area and mine lease area. These species will also increase the aesthetic value due bearing of colorful flowers and commonly used in avenue plantation.

List of Plant Species to Control Dust (Particulate matter) in and around the mine area

S. No.	Scientific Name	Common & Local Name	% of DC	Location		
				1	2	3
1.	*Annona squamosa*	Sitafal	12.09	*	*	
2.	*Magifera indica*	Aam	12.25			*
3.	*Thevetia peruviana (sh)*	Peeli Kaner	12.56	*	*	*
4.	*Ipomea carnea (sh)*	Beshram/Behaya	14.87	*	*	*
5.	*Hibiscus rosa- sinensis(Sh)*	Gurhal, Jasund,	21.09	*	*	
6.	*Bougainvilliea glavra(St)*	--	21.35			
7.	*Ficus religiosa*	Peepal	12.94	*	*	*
8.	*Syzygium cumini*	Jamun	14.39			*
9.	*Citrus limon*	Nimboo	15.96			
10.	*Delbergia sissoo*	Shesham	17.02	*	*	
11.	*Delonix regia*	Gulmohar	18.05			*
12.	*Moringa olieifera*	Sahajan	18.79			*
13.	*Aegle marmelos*	Bel	18.9	*	*	
14.	*Pithecolobium dule*	Jungle Jalebi	19.21	*	*	
15.	*Cassia fistula*	Amaltas	23.03	*	*	*
16.	*Butea monosperma*	Palas, Dhak	24.44	*	*	*
17.	*Azardirachta indica*	Neem	25.54	*	*	*
18.	*Polyalthia longifolia*	Ashoka	29.84	*	*	*
19.	*Terminalia catappa*	Desi Badam	30.12			*

20.	*Terminalia arjuna*	Arjun	30.54	*	*	
Locations: 1- both sides of the mining area, 2- Roads connecting mine lease, 3- Roads passing through nearest villages. Sh- shrub, St – Straggler. %DC – Percent of Dust Control efficiency.						

Impact	Evaluation	Mitigation
Impact of Noise on faunal groups: Increase in noise level in the project area may affect the faunal groups in term of their normal behaviors like; feeding, resting and breeding/nesting (especially avifauna).	The main sources of noise in the mining activities will be of mining equipment and vehicular movement associated. The standard prescribed by the Occupational Safety and Health Administration (OSHA) is 90 db not more than 8 hrs. Exposures for the worker However, no such conditions and any standard limitations have been available for any animal group. However, intensive afforestation program with appropriate plant species can take care of this localized and short term disturbance in the long run.	1. Some of the plants species listed in above different table also perform vital role in control noise pollution due to their thick and fleshy leaves and vibrating nature (Sexena 1991). A total of seven species were identified as species which are able to absorb So_2 emission also. 2. Therefore those species listed below are suggested to grow in and around the villages and other public places like schools, hospitals, health Centre and temples of nearby villages. 3. In addition, following the afforestation programs suggested above in different locations in and around the mining sites, road sides, village and other area in different phases will further minimize the noise level and also provide habitat for many avifauna & other faunal groups and improve the overall faunal diversity of the surrounding area.

List of plant species to control Noise pollution and absorb gas (SO_2 emission)

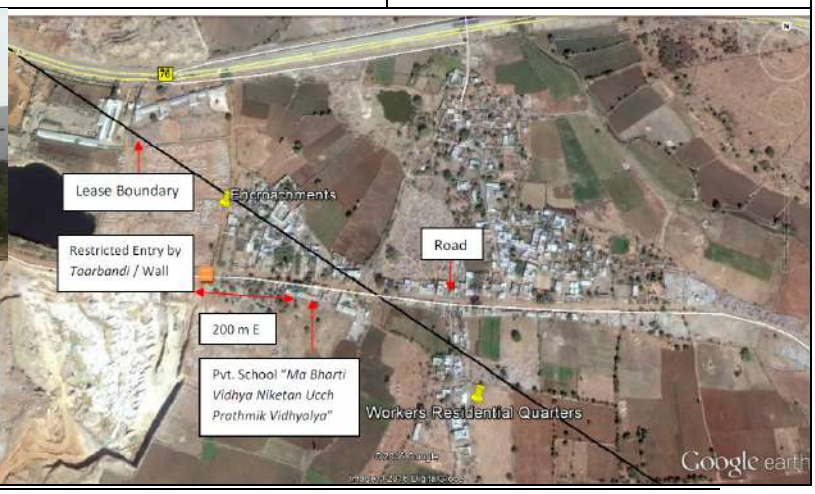
S. No.	Scientific Name	Common & Local Name	Performance		Location	
			CN	OGE	1	2
1.	*Aegle marmelos*	Bel	*			*
2.	*Azardirachta indica*	Neem	*	+	*+	*+
3.	*Diospyros melanoxylon*	Tendu	*		*	
4.	*Ficus bengalensis*	Banyan, Vad	*		*	*
5.	*Ficus religiosa*	Peepal	*	+	*+	*+
6.	*Polyalthia longifolia*	Ashoka	*	+	+	*+
7.	*Terminalia catappa*	Desi Badam	*		*	*
8.	*Terminalia arjuna*	Arjun	*	+	*+	+

* CN –Control Noise level, OGE – Absorb Gas emission (+ So_2), Locations: 1- roads crossing villages, 2 – Public places (schools, hospitals, health centre and temples)

Impact	Evaluation	Mitigation
Accidental mortality of faunal groups	One of the likely impacts that would affect the animal species is road mortality due to vehicle movements/ transportation. Low abundance status of mainly amphibians and mammals, the expected impact in the form of road kill on these faunal groups may not be very high.	Faunal survey in the study area reported low abundance and species richness of all faunal groups, therefore increasing vehicle movements due to proposed expansion and transportation of materials may not have high impact. However the following implication will further reduce possibility of this type of impacts:- 1. It is suggested to dugout 1m width and depth of trenches on either side of the roads which are under intensive use and these trenches can be connected with culverts at regular intervals (at 0.5 km distance) to facilitate lesser vertebrates to cross the road without any accidental kill. 2. The rain water stagnated in the trenches will also retain moisture level for longer period to support the road side plantation to gain faster growth rate. 3. Further it is suggested to put sign boards and provide strict instructions to the drivers to maintain speed limits of the vehicles which will reduce the road mortality rate as well as spillage of material.
Impact to threatened/ Vulnerable Faunal species.	Among faunal species, present survey reported from buffer zone of the project recorded 4species (Indian Peafowl, Gray Mongoose, Sloth Bear and Leopard) area. These species may be affected due to habitat degradation and fragmentation which will ultimately have impact on population status.	1. Conservation Plan for same is prepared separately. However, peacock is very common and usually uses wide variety of habitat types like agriculture areas, grasslands and open fallow land including urban human dominated areas which are widely available in the study area and beyond it. 2. Water holes (4+2=6) will be constructing and same will be filling by water for Sloth Bear and panther. Conservation plan with the budget is enclosed with EIA report.

4.7 SOCIO-ECONOMIC IMPACT

4.7.1 IMPACT ON COMMUNITY DEMOGRAPHICS

S. No.	Existing variables/ situations of Socio-economic Issues:	Predict (adverse/ favorable) impacts (reasons for variations & bias of representative data).	Mitigation measures. In numbers.
1	The nearest habitations include Dhaneshwar from 1.24 km to ENE Lease Boundary & Kheda South Boundary. Owing to a road within the Lease hold boundary, there are few extended Dhaneshwar village houses and a private School, encroaching inside the ENE Lease boundary between the pillars A4 to A5.	The distance of the encroached private School from the nearest "*Bad Wala* Pit" is 200 m, E & from "*Tamatar Wala* Pit" is 2.38 Km, E keeping a safe distance of more than 45 meter will be left as per the MMCR 1986 and its subsequent amendment 12.07.2013. There shall be no mining activity required towards South Boundary or in the area occupied by the encroached houses or School in the ENE lease boundary and there entry in the Mining region is restricted. Rehabilitation & Resettlement is not required, however the associated Preventive measures & Socio economic Management is given below :-	All necessary measures will be taken to ensure the safety of the persons: ➢ Keeping a safety zone of more than 50 m and an adequate boundary wall of 12 ft height has been built. ➢ The time period for (low intensity) blasting will be scheduled in post school hours. ➢ Loud signals will be blown before the time of blasting (low intensity). ➢ A security guard will be posted around the School boundary to ensure that everyone is in the safe position. The charge per delay will be implemented for only 13.5 kg hence the impact will be limited
	 Back side of the School (South Boundary approx. 12 ft height) facing the Mine lease. The entrance faces North (road) and hence the		

mining activities are towards the South (back side) of the school.

Public Health & Safety Plan

Impact Assessment	Preventive Measures & Integrated Management plan	Capital Cost (*In Thousands)
Restricted Entry through Taar Bandi/ Boundary wall on the road.	Passing of the local public & School though the mining region is restricted though *Taarbandi*/ Boundary wall construction. Erection of such obstructions shall restrict passersby entering the mining region only. Bullet in Orange Showing the Restricted entry above.	30.0
Warnings Display Boards	The time of the controlled blasting (low intensity) will be done post school hours, with all precautions between 3:00 to 4:00 p.m. The Warning Display Boards will be displayed at following locations : ➢ Gram Panchayat Dhaneshwar & Sutara ➢ Marketplaces of Dhaneshwar ➢ Outside *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar ➢ Bus Stand *Dhaneshwar and various other Social & religious places where the local public can be awarded.*	10.0
Siren Blowing	Loud signals will be blown before the time of blasting (low intensity).	-
Ambulance	An Ambulance for the local public has been contributed to the SP office, Bundi by the Project.	-
Safety Zone for Kheda	Habitation of Kheda towards South boundary, a safety zone of 50 m, and an adequate *Taarbandi* of 6.0 ft height shall be built to divide the safety zone.	10.0
	Total	**50.0**

School Safety & Preventive Management Plan

Impact Assessment	Preventive measures & Integrated Management Plan	Capital Cost (*In Thousands)

	Restricted Entry through Taar Bandi/ Boundary wall on the road	Passing of the School students though the mining region will be restricted though *Taarbandi/* Boundary wall construction. Erection of such obstructions shall restrict passersby entering the mining region only. Bullet in Orange Showing the Restricted entry above.	30.0
	Safety Zone	A safety zone of 200 m (E) will be left from the School boundary, and an adequate boundary wall of 12 feet height has been built towards South of the School Boundary wall , dividing the safety zone. Loud signals are and will be blown before the time of blasting (low intensity). A security guard will be posted around the School boundary to ensure that everything is in the safe position.	-
	Impact of blast on school students	The time of the low intensity blasting are and will be scheduled after the school hours. The school hours is as follows:- Summers: 7: 00 – 1:00; Winters: 8:00 – 2:00. Hence, The time of the controlled blasting (low intensity) is and will be done post school hours, with all precautions between 3:00 to 4:00 P.M.	-
	Prohibited Student/ Teachers entry in the lease hold area/ active mine area.	There is built up area towards East & West boundary of the School & the South Boundary is 12 feet height. The four sided school boundary wall with a height of 6 feet will be confirmed to prevent the school children to enter in proposed lease hold area during active mining hours.	-
	Medical facilities	Despite all preventive measures, conveyance arrangements to hospitals or dispensaries from the mine site will be readily made.	-
	Educational Benefits	Teachers will be employed in the school for subjects of English and Math. The Tuition fees of the teachers will be funded by the PP and the respective allocations are proposed in the CSR table.	28.80
		A desktop computer will be installed in the *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar for students of all classes to get introduced to the new technology.	25.0
		Prize distribution for the Inter school competition through the National Green Core Bharat Scout and guide Eco-Club,	10.0

			Dhaneshwar will be organized among the following schools:- *Rajkiya Prathmik Vidhyalya*, Dhaneshwar *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar *Rajkiya Prathmik Vidhyalya*, Sutara Suggested Activities for the Eco-club will be:- ➢ Organize popular talks on environmental issues in the school ➢ Awareness programme on personal hygiene.	
		Total		**93.8**
2		<u>Habitation in the Buffer Zone</u>: - The villagers in area have a high ecological integrity and support human life by giving direct or indirect benefits and services. The region is rich with social capital and interpersonal ways of meeting and interacting with each other are harmonious.	There will not be influx of population due to the proposed project as local workers will be put on roll. Hence, will not impact the existing folkways of interaction in the society.	Periodic maintenance and emission check of vehicles shall be ensured. Materials shall be covered with tarpaulin sheets during transport. Regular health camps (mainly in habitation of Kheda, Dasaliya Dhaneshwar & Sutara) to trace the developments and control any ill-consequences
3		<u>Immigration/ Emigration of workers</u>. Large number of population commutes from Bundi in search of work. Labour migration (mainly Males) from smaller villagers to urban / developing areas in search of work is a general problem.	The labour migration in Bundi needs to be checked through creating employment opportunities in the district. The proposed project aims to control emigration of **120*** workers at least.	The probable non - emigrating population, due to the proposed project, contribute in the regional growth.

<u>*Probability analysis of non – emigrating population</u>

Hypothesis based on field study:-

Migration chances are more among male workers as compared to women workers. Migrartion among *the women workers is dependent on the job shifts of their male counterparts.*

- *Emigration of the illiterate population : With a likely occurence of 4 in every 10 illiterate men migrate in search of skilled / semi skilled work.*

The proposed project willl provide opportunities to 300 local people. Hence in an experiment*, to calculate the likely occurence of Illiterate people not leaving the study area in search of work due to the opportunities provided by the proposed project = 120.*

4.7.2 IMPACT ON EMPLOYMENT

S. No.	Existing variables/situations of Socio-economic Issues.	Predict (adverse/ favorable) impacts (reasons for variations & bias of representative data).	Mitigation measures. In numbers.
4	**Direct, (Local), long term, large scale Employment generation to 300 employees.** Magnitude of impact is moderate. A direct positive impact due to -better jobs & business activity. Residents of the local region and tehsil will be put on roll for the proposed activity.	Therefore a minimum of approx. Rs. **2.30# Cr.** of direct money incomes could be generated by the local people in the region through the operation of the mining process. This would impact the income–expenditure and also affect micro investments-savings patterns of the region.	➢ Non workers and unskilled workers (local within 10.0 Km) will be trained to work in mines. ➢ A proper direction given to the villagers would help route the savings for growth.
5	**Indirect Employment** A permanent addition through mining to the warehousing activities and logistics analysis of value chain will lead to commercial sales for industrial and household use. This would create Indigenous technologies for sustainable development. The transportation of the mineral will be carried out by using 21 trucks a day, thus creating the employment opportunity for the truck drivers and their helpers.	New patterns of Indirect employment/ income:- **Logistics:** Approx. 21 truckers per day. **CSR:** Construction of permanent infrastructures. (Approx. 12-15 people will get employment.) A total of **approx. 100 people** will find indirect employment/ income opportunities in the region.	Ensure the optimum use of the excavated mineral.

*#: Proposed manpower [300] * [271] (Calculated at the minimum wage rate per day of Highly skilled, Raj as the latest updated Minimum Wages Act, 1948.) 80,100 * 300 (approx. working days) = Rs. 2,43,90,000/-*

4.7.3 IMPACT ON ECONOMIC DIVERSITY AND VITALITY

S. No.	Existing variables/ situations of Socio-economic Issues :	Predict (adverse/ favorable) impacts (reasons for variations & bias of representative data).	Mitigation measures.
6.	Existing economic Issues of the study	The proposed project will	A minor contribution in the

	area: Bundi is one of less developed districts in Rajasthan due to low employability and of organized industrial and institutions like in Kota.	contribute in regional economic growth through mining activity. Building social utility permanent structures, in the study area will contribute in regional upgradation.	upgradation of less developed areas of distrcit Bundi.
7.	Gross State Domestic Product Mining is a major revenue generating sector of the region, to state and central Government. The mining and associated activities in the mineral bearing areas bring about gains in gross state domestic product.	The proposed project will continue contributing, though in a small measures, in bridging the gap between the supply and the demand of mineral in the region and the state. Minor gains in GSDP.	Optimum utilization of natural resources will be maintained.

4.7.4 IMPACT THROUGH MINING ACTIVITY

S. No.	Variables/ situations of Socio-economic Issues.	Predict (adverse/ favorable) impacts (reasons for variations & bias of representative data).	Mitigation measures.
8	Overexploitation of any natural resource, land or labour.	Over a period of several decades: There will be optimum utilization of mineral, for local market. The backfilled land will be developed for green belt after the life of the mine.	Labour employed will be constantly under health surveillance and remuneration with all concerned benefits and other policies will be as applicable to mine worker.
9	Noticeable Good will for the following parameters. ➢ Management of Sub-grade minerals ➢ Noise and vibration control ➢ Water pollution control ➢ Waste dump management ➢ Afforestation/ Plantation ➢ Overall performance ➢ Air pollution control	An exemplary positive impact in the coming years.	The proposed project will continue to do the good work with public faith.

10	Permanent Social Infrastructures through Corporate Social Responsibility	Hence, many permanent structures with local people involvement are estimated to come. Revisable benefits for desirable positive impacts in the region and on the people.	Applicant will cooperate with the local govt. for various developments of basic amenities in the nearby area.
11	Loss/gain of self esteem In the areas of Dhaneshwar and nearby villages the villagers were found to be of low self esteem due to low rate of economic growth in the region. But there is remakably a high self esteem due to higher degree of self satisfation and contentment.	The continuation of mine work would instill a sense of growth and opportunity. Commercial activity and power to women decision making, were felt needs in the study area.	Women empowerment Financial assistance, training and marketing of SHG, know how will be given for the first year. This would impact the decision making ability of local women in the area.
12	Loss/ gain of culture and religion: It is clearly stated in as per the Human Rights, that the obligation of States is to promote universal respect for, and observance of, culture & religion.	The proposed project is a PSU and will follow universal respect for, and observance and protection of, human rights and fundamental freedoms for all.	The proposed project expansion will promote neither selective, nor relative, but universal respect through contribution in various festivities, equal observance and protection among employees and societies at large in all CSR activities.

4.7.5 SOCIAL IMPACT

- The PP is committed towards Social development.
- Approx 300 local workers will employment opportunties alongwith periodical training to generate local skills.
- New patterns of indirect employment/ income through value chain involving warehousing, logistics, and CSR.
- Permanent structures for employment creation with local people involvement through establishment of income generating activities.

4.7.6 SOCIO ECONOMIC PARAMETER IMPORTANCE IMPACT UNIT PROFILE

SPIU Matrix

Socio Economic Components	Parameter	Degree of Importance			Magnitude of Impact		
		High (3)	Medium (2)	Low(1)	High (+3)	Medium (+2)	Low(+1)
No loss of habitation	30	3	-	-	-	-	+1
No impact to nearest Habitation in the Buffer Zone with respect to Wind flow direction	11	-	2	-	-	-	+1
Direct & Indirect Employment opportunities	26	3	-	-	+3	-	-
Other Local Commercial Opportunities	13	3	-	-	-	-	+1
Local, Regional Growth and Development	13	3	-	-	-	-	+1
No impact Archeological or protected monuments in 10.0 km	11	-	2	-	-	-	+1
Contribute to meet the rising mineral demand.	13	-	2	-	-	-	+1
No Loss of culture and religion. No Mixing up of Religious & Cultures Project not inviting Immigration of ethnic groups	7	3	-	-	+3	-	-
Project not delineating Emigration of ethnic groups	11	3	-	-	+3	-	-
Gain of self esteem of locals	11	-	-	1	-	-	+1
Project in Oneness with society/ Isolation/ Solitude of people/ Social Interactions amongst human settlement	7	-	2	-	-	+2	-
CSR done	7	3	-	-	+3	-	-

Brand Equity with Locals Noticeable Good			
Commitment towards Proposed CSR & Public hearing Action Plan	11	3 - -	+3 - -
Total	**171**	**+ 54.25 Parameter Importance Impact Unit**	

<u>Inference of Socio Economic Parameter Importance Impact Unit profile</u>: - As there is zero (0) socio-economic threat and no negative impact assesses the proposed project is not harmful. As per the analysis of SIU profile, proposed expansion project has a moderate positive impact with an average (+) 54.25 SE PIIU. The project expansion has a social importance, for the society and local commerce, and will moderately (& positively) impact the socio- economic aspects.

Reference

SIU	Inference
-75 to -100	High Negative Impact, Harmful for society at large.
-50 to -75	Moderately Negative Impact
-25 to -50	Low Negative Moderate Impact
-(0) to -25	Low Negative Impact
0	Neither Negative nor Positive
+(0) to +25	Low positive Impact
+25 to +50	Low positive Moderate Impact
+50 to +75	Moderately positive Impact
+75 to +100	High Positive Impact, Beneficial for society at large.

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5.0 ENVIRONMENTAL MONITORING PROGRAMME

5.1 INTRODUCTION

Regular monitoring of environmental parameters is of immense importance to assess the status of environment during project operation. The knowledge of baseline conditions, the monitoring programme will serve as an indicator for any deterotriation in environmental conditions due to operation of the project, to enable taking up suitable mitigatory steps in time to safeguard the environment. Monitoring is an important as that of control of pollution since the efficiency of control measures can only be determined by monitoring.

An impact assessment study is carried over short period of time and the data cannot bring out all variations induced by the natural or human activities. Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environmental quality.

5.2 ENVIRONMENTAL MONITORING AND REPORTING PROCEDURE

Monitoring will conform that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amount and concentrations of discharges. The objectives of the monitoring are:-

- Very effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Conform statutory and corporate compliance; and
- Identify unexpected changes.

5.3 ENVIRONMENTAL MONITORING CELL

A centralized Environmental Monitoring Cell will be established for monitoring of important and crucial environmental parameters which are of immense importance to assess the status of environment during mine operation. With the knowledge of initial parameters, deviations in environmental conditions due to operation of the mine will be assessed and suitable mitigation steps will be taken to safeguard the environment. The routine monitoring program will be implemented under the project monitoring as per CPCB guidelines.

The core responsibilities of the Environmental Monitoring Cell will be:-

- The organization and interpretation of the environmental monitoring data to establish a record of change associated with the implementation of a project or the operation of an organization.

- The process of verification that all or selected parameters measured by Environmental Monitoring Programme are in compliance with regulatory requirements, internal policies and standards, and established environmental quality performance limits.
- The comparison of project impact predictions with actual impacts for the purpose of assessing the accuracy of predictions.
- The assessment of the effectiveness of the environmental management system, practices and procedures.
- The environmental monitoring and audit work will be carried out by qualified personnel.
- A summary of non-compliance of the environmental quality performance limits.
- To implement and monitor the control and protective measures based on the EMP.
- To coordinate the environment related activities to the top management within as well as with outside concerned agencies.
- To provide of health check up of workers and the people living in nearby villages.
- To develop greenbelt in the nearby villages, schools, Govt. offices and transportation routes.

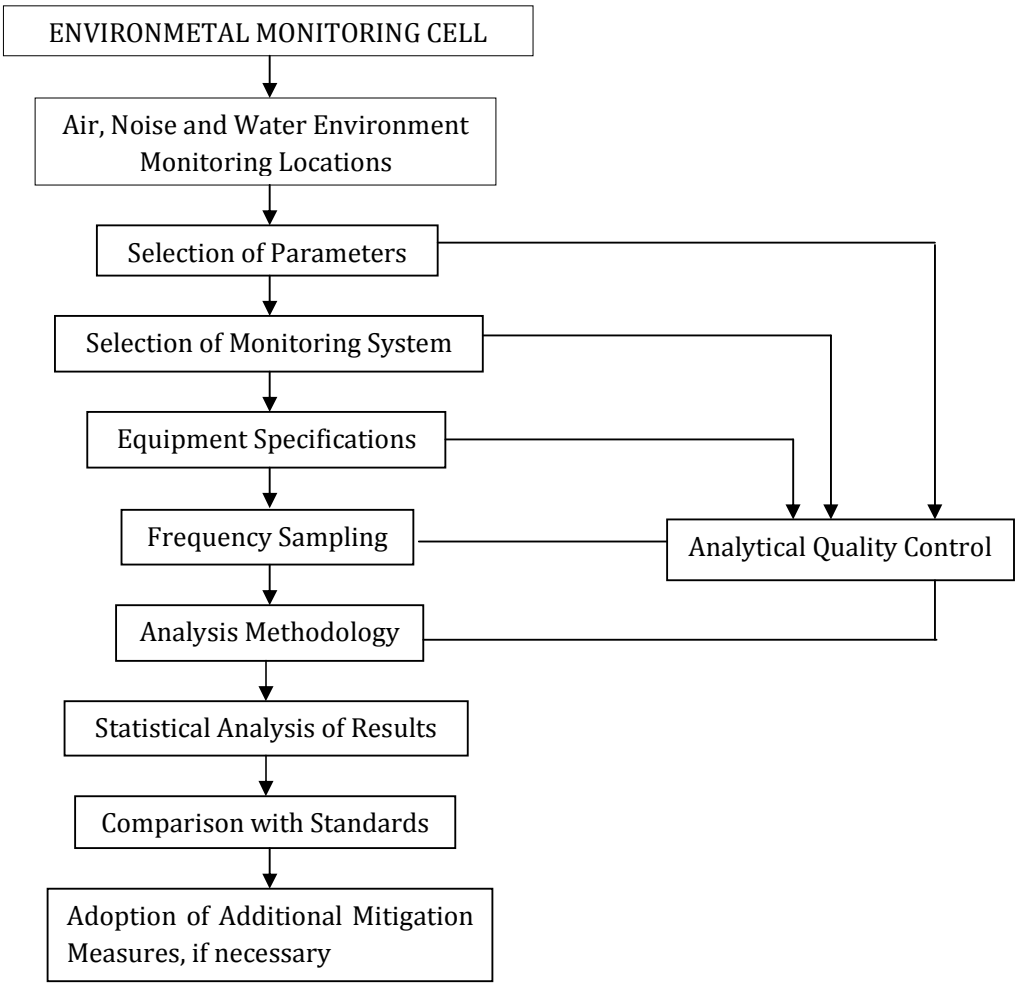

Figure 5.0: Environmental Monitoring Cell

5.4 ENVIRONMENTAL MONITORING SCHEDULE

Environmental monitoring schedules will be prepared covering various phases of project advancement, such as constructional and regular operational phase.

Table 5.0: Environmental Monitoring Programme

S. No.	Potential Impact	Parameters for Monitoring	Frequency of Monitoring	Location
1.	Air Emission	PM_{10}, $PM_{2.5}$, SO_2, NO_X and CO.	As per CPCB/ RSPCB requirement i.e. 24 hourly monitoring for one month in each season except monsoon season.	One location inside and four outside
2.	Noise	Spot Noise level recording Leq (day), Leq (night), Leq (dn)	Periodic/ as per RSPCB norms i.e. quarterly	One location inside and four outside
3.	Water	As per drinking water	Four times in a Year	One location inside

	Quality	standards		and four outside
4.	Health	Total health parameters	Initial Medical Examination (IME) and Periodic Medical Examination – Once in a five year as per Mines Rules, 1955.	All employees

5.4.1 MONITORING SCHEDULE DURING CONSTRUCTION PHASE

The existing project has an office, rest room, toilets, septic tank, etc.

5.4.2 MONITORING SCHEDULE DURING OPERATIONAL PHASE

During operational phase, dust will be the main pollutant which arises from different mining activities.

The major attributes which merit regular monitoring based on the environmental setting and nature of project activities are listed below:-

- Source emission and ambient air quality;
- Ground water levels and ground water quality;
- Water and waste water quality;
- Soil quality;
- Noise levels (equipment and machinery noise levels, occupational exposures and ambient noise levels); and
- Ecological preservation and afforestation.

5.5 MONITORING METHODS

5.5.1 AMBIENT AIR QUALITY MONITORING

5.5.1.1 Workspace Monitoring

The concentration of air borne pollutants in the workspace/ work zone environment will be monitored periodically. If concentrations higher than threshold limit values will be observed, the source of fugitive emissions will be identified and necessary measures will be taken as detailed in EMP.

5.5.1.2 Ambient Air Quality Monitoring

The ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO in the ambient air will be monitored at regular intervals. Any abnormal rise will be investigated to identify the causes and appropriate actions will be initiated. Greenbelt will be developed for minimizing dust propagation.

5.5.2 MONITORING OF WATER QUALITY

5.5.2.1 Monitoring of Ground Water

The monitoring of groundwater is the most important tool to find out the depletion/ increase in level of water table. Water table will be monitored at regular interval to check the behavior pattern of the water table. It is suggested to collect water samples and analyze. Records of analysis will be maintained.

5.5.2.2 Water and Wastewater Quality Monitoring

To ensure a strict control over the water consumption, flow meters installed for all major inlets. All leakages and excess will be identified and rectified. In addition, periodic water audits will be conducted to explore further possibilities for water conservation.

5.5.3 MONITORING NOISE LEVELS

Noise levels in the work zone environment will be monitored. The frequency will be once in three months in the work zone. Similarly, ambient noise levels near habitations will also be monitored once in three months. Audiometric tests will be conducted periodically for the employees working close to the high noise sources.

5.6 REPORTING SCHEDULES OF THE REPORTING DATA

It is proposed that voluntary reporting of environmental performance with reference to the EMP will be undertaken.

The Environmental Monitoring Cell will co-ordinate all monitoring programmes at site and data thus generated will be regularly furnished to the State regulatory agencies.

The frequency of reporting will be on six monthly basis to the local state PCB officials and to the Regional Office of MoEF&CC. The Environmental Audit reports will be prepared for the entire year of operations and will be regularly submitted to regulatory authorities.

5.7 CONCLUSION

Post Environmental monitoring is an essential step in the EIA process, if the predicted impacts, the efficiency of mitigation measures and the shortcomings of prediction methods, measures and even regulations are to be verified and EIA practice improved. Environmental indicators could contribute to designing and evaluating monitoring programs, thus improving establishment of the cause effect relationship and the reporting and communication of environmental data.

The Environmental Monitoring Cell will co-ordinate all monitoring programmes at site and data thus generated will be furnished as per statutory requirements. The frequency of reporting will be on half yearly basis to the RSPCB and to Regional Office of MoEF&CC, Lucknow. The Environmental audit reports will be prepared for the entire year of operations and will be regularly submitted to regulatory authorities.

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6.0 ADDITIONAL STUDIES

6.1 PUBLIC CONSULTATION

Public hearing was conducted on 11.05.2016, 11:00 AM at Atal Seva Kendra, Gram Panchayat Office, Dhaneshwar, Panchayat Samiti - Talera, District – Bundi (Raj.). This meeting was conducted for the Sandstone Mine (ML No. 47/ 94) by Regional Officer, Kota Sh. Amit Sharma and Presided by Additional District Collector, Bundi Sh. Ramjeevan Meena. Notice for the Public Hearing was published in "Dainik Bhaskar" & "Rajasthan Patrika" on dated 05.04.2016. Public Hearing was conducted as per EIA notification dated 14.09.2006 of MoE&F, Govt. of India.

At the inception of the public hearing, Sh. Amit Sharma, Regional Officer, RSPCB, Kota, explained on the provisions, objectives, & importance of public hearing and briefly informed about the proposed mine project.

On behalf of the proposed expansion project, Kanhaiya Lal Rameshwar Das, Sh. Vikrant Mahendran (Enkay Enviro Services Pvt. Ltd.) explained about the proposed expansion mine in detail. Mining will be based on the approved Mining Plan by DMG.

During the public hearing, about 59 people were present. Following issues were raised:-

S. No.	Name & Address	Objection/ Quarry	Answer to the Objection/ Quarry
1.	Shri Ramswaroop Meena, Resident Village Dhaneshwar	There are problems of blasting as they damage the houses, as the major problem is of untimely blasting timings.	The mine has adopted controlled blasting; technique and blasting are being carried out in overburden removal only. Blasting operations are carried only during specific timing with prior siren intimation. The specific time of blasting is and shall further be displayed at more locations around the approach road and also in the habitation areas to make locals aware of the specific duration of blast timings viz 3:00 to 4:00 PM.
2.	Shri Sahab Singh, Former Panchayat Member	Explained the contribution of development in the region by the mine project and the need to continue mining activities for regional development. He advised Mine owners in the region to do increased	The continual social development and forestry along with promotion of education among the employee's children will be adapted and action plan accordingly has been specified.

		plantation & contribute towards the education for the children of the mine employee families'.	
3.	Shri Naresh Resident Dhaneshwar	It is requested to the mine company to generate more & more employment opportunities.	More and more of local villagers will be given employment on the basis of their eligibility. Training to local villagers will be given in skill development.
4.	Shri Mukesh Suvalka, Resident Dhaneshwar.	Have objections on the firm Bundi Silica Company and has submitted a written application and the original copy is being submitted in this regard. The objections raised were pertinent to blasting, employment, and education.	The issue is in relation to "Bundi Silica Company" is unrelated to the public hearing of Kanhaiya Lal Rameshwar Das project (Sandstone Mine), Dhaneshwar. Despite this, the action plan proposed has included all the above concern.
5.	Shri Suresh Suvalka, Resident Dhaneshwar	Regarding the blasting causing cracks in the houses and probability of accident of school children. He told that there is school near the mine region operating 200 children. There is scope of accident to the school children from the mining activates & blasting. The timings of the blasting are not fixed, thereby becoming a major problem.	The blasting followed is controlled and muffled technology only in overburden and as the mineral Sandstone needs to be excavated in the shape of slabs. So nominal blasting is being undertaken. Sirens are blown as a part of regular practice and will be continued every time before the blast. The specific time of blasting is fixed and shall further be displayed for awareness at more locations around the approach road and also in the habitation areas to make locals aware of the specific duration of blast timings viz 3:00 to 4:00 PM. The school is beyond 45m from the existing working pit area. A School safety & preventive management plan is given below:-

School Safety & Preventive Management Plan

Impact Assessment	**Preventive measures & Integrated Management plan**	**Capital Cost (****In Thousands***)**
Restricted Entry through Taar Bandi/ Boundary	Passing of the School students though the mining region will be restricted though *Taarbandi*/ Boundary wall construction. Erection of such obstructions shall restrict passersby entering the mining region only.	30.0

wall on the road	Bullet in Orange Showing the Restricted entry in the map given in Section IV.	
Safety Zone	A safety zone of 200 m (E) will be left from the School boundary, and an adequate boundary wall of 12 feet height has been built towards South of the School Boundary wall , dividing the safety zone. Loud signals are and will be blown before the time of blasting (low intensity). A security guard will be posted around the School boundary to ensure that everything is in the safe position.	-
Impact of blast on school students	The time of the low intensity blasting are and will be scheduled after the school hours. The school hours is as follows : Summers : 7: 00 – 1:00; Winters : 8:00 – 2:00 Hence, The time of the controlled blasting (low intensity) is and will be done post school hours, with all precautions between 3:00 to 4:00 p.m.	-
Prohibited Student/ Teachers entry in the lease hold area/active mine area.	There is built up area towards East & West boundary of the School & the South Boundary is 12 feet height. The four sided school boundary wall with a height of 6 feet will be confirmed to prevent the school children to enter in proposed lease hold area during active mining hours.	-
Medical facilities for students and teachers.	Despite all preventive measures, conveyance arrangements to hospitals or dispensaries from the mine site will be readily made.	-
Educational Benefits	Teachers will be employed in the school for subjects of English and Math. The Tuition fees of the teachers will be funded by the PP and the respective allocations are proposed in the CSR table.	28.80
	A desktop computer will be installed in the *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar for students of all classes to get introduced to the new technology.	25.0
	Prize distribution for the Inter school competition through the National Green Core Bharat Scout and guide Eco-Club, Dhaneshwar will be organized among the following schools:- • *Rajkiya Prathmik Vidhyalya*, Dhaneshwar. • *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar • *Rajkiya Prathmik Vidhyalya*, Sutara Suggested Activities for the Eco-club will be:- • Organize popular talks on environmental issues in the school • Awareness programme on personal hygiene.	10.0
Total		**93.8**

6.	Sh. Mukesh Kumar	There has been Socio –	The lessee consented that there will be continuous

	Meena, Resident Dhaneshwar	Economic development due to the mining in the Dhaneshwar-Sutara region. There is need for further scope of Socio Economic development in the mining region through the mine –owners.	socio – economic development in the region.

TIME BOUND ACTION PLAN OF PUBLIC HEARING

S. No.	Activities	Action undertaken	Fund Allocation (Rs. In Lac)		Time schedule
			Capital Cost	Recurring Cost	
1.	Blowing of siren before blasting. Display boards at various locations around the villages & approach roads displaying specific duration of (low intensity) blast timings viz 1: 0 to 2:00 PM.	The Warning Display Boards will be displayed more at minimum five locations in the lease and three locations outside the lease area near habituations. ➢ Gram Panchayat Dhaneshwar & Sutara ➢ Outside Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya, Dhaneshwar. ➢ Confluence of kuccha road and NH – 76.	0.10	-	The Sirens shall be blown 15 min. early to the blasting time. The display boards shall be installed at various locations.
2.	Sustainable Employment self income – generating opportunities.	Formation of a Self Help Group of women from the villages Kheda, Dasaliya, Dhaneshwar and Sutara for the Sanitation program in Dhaneshwar Habitation. Financial Assistance for the Women Self Help Groups for maintaining Sanitation & cleanliness of the Roads/ Nalas and Public Facilities. Provision for Kachra Collection Carts/ Cleaning Implements/ Drums etc. for the first year.	3.0	0.5	From the (Q2) first quarter of the mine till the life of the mine (43 years).

3.	Employment generation to local people of Dhaneshwar for mine workers.	Local villagers will be given employment on the basis of their eligibility in the proposed expansion mine. However, a training camp shall be provided when new recruitment is done to enable local villager's applicability.	0.75	0.75	From the (Q1) first quarter of the mine till the life of the mine (43 years). On the basis of knowledge, expertise, and criticality of skill, the local villagers will be trained. The trainings will be given, with the initiation of the mining and regular training and up gradation of local manpower skills will be done every year.
4.	Education Fund	Contribution for education for the children of the mine employee familie's (scholarship).	3.0	0.25	From the (Q2) first quarter of the mine till the life of the mine (43 years).
5.	School Development	An **integrated** School preventive and Management plan	0.938	0.288	From Q2 School Restarts after Final Examination.
	Total		**7.788**	**1.78**	

6.2 RISK ANALYSIS AND DISASTER MANAGEMENT PLAN

Mining basically is a hazardous profession requiring stringent safety measures to avoid incidences involving life and damage to machineries. It may cause extensive damage to property and serious disruption in work inside and outside the premises. Such situations need positioning of emergency response plans which can be executed without the loss of time. Time factor is the essence in dealing emergencies to minimize the loss of human life and disruption of work.

Any accident may develop into a major emergency even with the best safety measures and programmes in mining. Hence, an emergency preparedness plan will be planned properly and documented for ease of implementation at the time of need without losing time and avoiding and delays.

6.2.1 OBJECTIVES OF DISASTER MANAGEMENT PLAN

The objectives of DMP is to describe the company's emergency preparedness, organization, the resource availability and response actions applicable to deal with various types of situations that can occur at mines in shortest possible time.

Thus, the overall objectives of the emergency plan are summarized as:-

- Rapid control and containment of Hazardous situation.
- Minimizing the risk and impact of event/ accident.
- Effective prevention of damage to property.

In order to achieve effectively the objectives of emergency planning, the critical elements that form the backbone of Disaster Management Plan (DMP) are:-

- Reliable and early detection of an emergency and immediate careful planning.
- The command, co-ordination and response organization structure along with availability of efficient trained personnel.
- The availability of resources for handling emergencies.
- Appropriate emergency response action.
- Effective notification and communication facilities.
- Regular review and updating DMP.
- Training of the concerned personnel.

Steps taken for minimizing the effects may include rescue operations, first aid, evacuation, rehabilitation and communicating promptly to people living nearby.

6.2.2 IDENTIFICATION OF HAZARDS AND MITIGATION MEASURES

The following types of hazards are identified and precautions to be taken against them are enumerated below:-

6.2.2.1 FALL OF SIDES & ROOF

- Flatter slope angles are adopted where occurrences of loose earth are encountered.
- Unmanageable heights are not created.
- Loose rocks are properly dressed.
- Nature and structure of the rocks are properly studied for their slips.
- Bench height will be kept with respect to the digging depth of excavating equipment. In case of semi-mechanized open cast mine it will not be normally more than 6.0m. The width of the bench will not be less than the height.
- No overhang/ under cutting will be allowed to be created in benches by the excavating equipments.
- Overloading of dumpers will not be allowed. Large size of material will not be loaded at the top of the dumpers to prevent its falling and causing injury to persons.

6.2.2.2 STORAGE AND USE OF EXPLOSIVES

- Safe practices will be adopted while using explosives.
- Explosive will be kept and stored in magazine, duly licensed.
- Transportation of explosive to the site will be made by duly licensed explosive van.
- DGMS qualified blaster will be appointed for carrying out blasting operations
- All precautions will be taken before blasting like removal of persons, equipments from the place of blasting to the safe distance.
- Proper record of receipt, storage and use of explosives/ fuel will be kept and maintained by properly authorized persons.
- Explosives will be used as per the requirement. No overcharging/ undercharging of holes will be allowed.
- All entries to the blasting area will be blocked and guarded to prevent inadvertent entry of persons.
- Alert through hoisting red flag will be given for cautioning/ warning to persons nearby before blasting.
- No blasting/ charging will be carried out in case of thunderstorm/ lighting etc.
- Caution board will be placed in the roads/ passages leading to blasting zone.

6.2.2.3 STORAGE OF OIL AND FUEL

- Due care will be taken to avoid oil spillage.
- Oil collecting bins will be placed before taking out oil from drums/ barrels to prevent spillage on the ground. Storage will not be allowed beyond necessity.
- Sand will be spread on floor. It will be regularly scrapped and removed.
- Sand baskets will be provided within the easy reach of persons near the area of fuel/ lubricant storage.
- Sufficient no. of foam type fire extinguishers will be provided.
- All equipments deployed in the mine will be provided with fire extinguishers CO_2 type to deal with electrical fires.
- Fire hydrant will be provided with long hose pipe near the mine.

6.2.2.4 WATER

- Proper drainage will be maintained to eliminate inundation of working pits during rains from run-off water.
- Garland drains will be provided to prevent outside water entering the mine pit.

- Sumps with adequate capacity will be developed inside the mine.
- Adequate pumping capacity will be developed to deal with accumulated water.
- Dumping area will be benched and sloped at the top towards the low altitude side.
- Parapet wall of 1m x 1m will be provided on the low altitude side of the dumps.
- Siltation ponds (3m x 3m x 2m) will be provided to arrest silt coming with runoff water/ garland drains.

6.3 OCCUPATIONAL HEALTH HAZARDS

Open cast method involves dust generation by excavation, loading and transportation of mineral. At site, during excavation and loading activity, dust is main pollutant which affects the health of workers whereas environmental and climatic conditions also generate the health problems.

Addressing the occupational health hazard means gaining an understanding of the source (its location and magnitude or concentration), identifying an exposure pathway (e.g. a means to get it in contact with someone), and determination of likely a receptor (someone receiving the stuff that is migrating).

Occupational hazard due to open cast mining mainly comes under the physical hazards. Possible physical hazards are as below mention:-

6.3.1 PHYSICAL HAZRADS DUE TO MINING OPERATIONS

Following health related hazards were indentified in open cast mining operations to the workers:-

1. **Light: -** The workers may be exposed to the risk of poor illumination or excessive brightness. The effects are eye strain, headache, eye pain and lachrymation, congestion around the cornea and eye fatigue.
2. **Heat and Humidity: -** The most common physical hazard is heat. The direct effects of heat exposure are burns, heat exhaustion, heat stroke and heat cramps; the indirect effects are decreased efficiency, increased fatigue and enhanced accident rates. Heat and humidity are encountered in hot and humid condition when temperatures and air temperatures increase in summer time up to 48^0C or above in the river bed mining area.
3. **Eye Irritation: -** During the high windy days in summer the dust could be the problems for eyes like itching and watering of eyes.

4. **Respiratory Problems: -** Large amounts of dust in air can be a health hazard, exacerbating respiratory disorders such as asthma and irritating the lungs and bronchial passages.
5. **Noise Induced Hearing Loss: -** Machinery is the main source of noise pollution at the mine site.

6.3.2 MANAGEMENT

Particulars	Control Measures
Heat & Light	➢ The mine site will have adequate drinking water supply so that workers do not get dehydration. ➢ Lightweight and loose fitting clothes having light colors will be preferred to wear. ➢ Rigorous exercise and more physical activities will be avoided in hot weather.
Noise	➢ Noise exposure measurements will be taken to determine the need for noise control strategies. ➢ The personal protective equipment will be provided for each mine workers. ➢ Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment. ➢ At noisy working activity, exposure time will be minimized. ➢ Machineries will be labeled with noise levels.
Respiratory	➢ PPE's like face mask etc. will be provided during mining activity. ➢ Periodic medical examinations will be provided for all workers. ➢ Awareness program will be organized for workers.

Functional Area	No. of Persons	Activities	Measures
Supervisory	2	Statutory personnel's Supervisors	➢ Regular Management Training, VTC, updating in safety measures, Equipment deployment, Safety and Risk Management.
Transportation	30	Drivers/ operators	➢ All drivers/ operators to have HMV license; ➢ Good roads to prevent body vibrations while in operation. ➢ Enclosed cabin to protect from noise and dusty atmosphere; ➢ Regular water sprinkling on haul roads. ➢ Provision of dust mask, safety shoes after every six months interval and helmets after every three years. ➢ Audiometric testing to be carried out during periodical medical check-ups.

Mining operations & Maintenance	150	Excavation	➢ Safety shoes, helmets and face mask will be provided; ➢ To protect from heat, shelters will be provided; ➢ Arrangement of drinking water near the working place.
General	118	Cleaning, Sanitation, Medical, Plantation, Office etc.	➢ IME and PME at regular intervals; ➢ Display of poster's and directions for safe and unsafe practices and Do's and Don't's while at work; ➢ Telephone numbers along with name of key personnel's will be displayed at conspicuous places on notice boards for emergencies; ➢ First aid facilities and provision of ambulance at the Office.
Total	**300**		

6.3.3 MEDICAL EXAMINATION SCHEDULE

To minimize the health impacts PPE's like dust masks, ear plugs/ muffs and other equipments will be provided for use by the work personnel. All workers will be subjected to Initial Medical Examination as per Mines Rule 1955 at the time of appointment. Periodical Medical Examination will be conducted at least once in five years. Medical camps will be organized. The detail of health check up and periodical medical examination schedule is given below in Table 6.1.

Table 6.1: Medical Examination Schedule

S. No.	Activities	1st Year	2nd Year	3rd Year	4th Year	5th Year
1.	**Initial Medical Examination (Mine Workers)**					
a.	Physical Check - up		--	--	--	--
b.	Psychological Test		--	--	--	--
c.	Audiometric Test		--	--	--	--
d.	Respiratory Test					
2.	**Periodical Medical Examination (Mine Workers)**					
a.	Physical Check - up	--				
b.	Audiometric Test	--				
c.	Eye Check - up	--				
d.	Respiratory Test					
3.	**Medical Camp (Mine Workers & Nearby Villagers)**	--				
4.	**Training (Mine Workers)**					

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	**PME as per Mines Rules' 1955**	**Special Examination**
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies
Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.		

6.4 CORPORATE SOCIAL RESPONSIBILITY (CSR)

The total capital cost involved in CSR activities will be Rs. 15.00 lacs and Rs. 1.638 lacs as recurring cost. The CSR will be done as per the applicability with The Companies Act, 2013. As a corporate responsibility following measures along with budget provision (Table 6.2) is proposed for the project area:-

Table 6.2: CSR Activities

(INR# In Lacs)

S. No.	CSR Activities as per the Section VII of the Companies Act 2013	Capital Cost#	Recurring Cost
1.	Adoption of Medical facilities and health checkup facilities in Dhaneshwar, Govt. Dispensary 1.306 km ENE. ➢ Requiring Doctors/ Nurses/ ANM ➢ Room / Building Renovation ➢ Green Cover in Centre ➢ Electrical / Cooler installation ➢ Toilets Renovation and Water Tanks installation ➢ Health Camps ➢ Camp by an Orthopedic doctor for checkup of musculoskeletal movement (for bones, joints, tendons, ligaments, muscles, nerves) ➢ Rain Water Storage structures	7.0	0.50
2.	Formation of a Self Help Group of women from the villages Kheda, Dasaliya, Dhaneshwar and Sutara for the following. ➢ Sanitation program in Dhaneshwar Habitation. ➢ Financial Assistance for the Women Self Help Groups for maintaining Sanitation & cleanliness of the Roads / Nalas and Public Facilities. ➢ Provision for Kachra Collection Carts / Cleaning Implements/ Drums etc. for the first year. The details are given below.	7.0	0.50

3.	Development activites for School *Ma Bharti Vidhya Niketan Ucch Prathmik Vidhyalya, Dhaneshwar.* Teachers will be employed in the school for subjects of English and Math. The Tuition fees of the teachers will be funded by the PP and the respective allocations are proposed. — 28.80 A desktop computer will be installed for students of all classes to get introduced to the new technology. — 25.0 Prize distribution for the Inter school competition through the National Green Core Bharat Scout and guide Eco-Club, Dhaneshwar will be organized among the following schools : *Rajkiya Prathmik Vidhyalya*, Dhaneshwar *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar *Rajkiya Prathmik Vidhyalya*, Sutara Suggested Activities for the Eco-club will be : ➢ Organize popular talks on environmental issues in the school ➢ Awareness programme on personal hygiene. — 10.0	1.0	0.638
	Total	**15.0**	**1.638**

Capital Cost: Rs. 15.0 Lacs

Recurring Cost: Rs. 1.638 Lacs till the life of the mine

Activity II	Details Desired	Remark (INR)
Formation and sustainable functioning of a Self help Group for household garbage collection on female education and for hygiene by training them through the importance of collective earning by local area.	Area : Cleanliness of Dhaneshwar Total Beneficiary: 14 Local Women three Years. Broom & other equipments Collection drum : 900/- One Cycle Cart :10,600/- Initial One Year's salary of one member: 46,700/-	*The Dumping ground as prescribed by the Gram Panchayat, Dhaneshwar for compost formation.

 One Cycle Cart: INR 10600/- for Transportation.	 Collection drum and others @ 900/- INR	 Cleaning Broom	

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7.0 PROJECT BENEFITS

7.1 GENERAL

The sandstone extracted will be utilized as a building stone in infrastructural development. Sandstone is resistant to saline air, which make it perfect for exterior cladding in sea-shore buildings. They are also acid and alkali resistant. So, they are used in chemical industry for flooring, wall-covering. Sandstone honed tiles and dressed stones became popular for exterior applications. The main advantage of using these stones has been negligible maintenance.

A total of 300 people will be employed through the project and thus will create long term (Life of the mine = 42.80 Years) and stable employment for local population. Applicant will pay royalty for the sandstone to be produced from the mine, sales tax and other applicable taxes, thereby contributing to the regional revenue. The public revenue will further be put in public expenditure. As mentioned by the Rajasthan State Industrial Development and Investment Corporation. Ltd., the Rajasthan natural stone industry alone employs about half a million workers in the region. The mining and associated activities in the mineral bearing areas bring about gains in gross domestic product. India is considered a hub for sandstone supplies and exports with low profit margins.

This will also generate much needed employment to the local people. Economy of the area will get a boost and there will be overall growth of the region in terms of education, health, training, transport, automobile, industry. The standard of living accordingly will also get an upliftment on the positive side.

7.2 EMPLOYEMENT

7.2.1 DIRECT EMPLOYMENT

During the operational phase, about 300 people will be employed directly. Considering that some of the skilled personnel to be employed for the project will be from outside the area and unskilled/ semiskilled personnel will be from within the study area, the project will add to the well being of the area. In addition to the workforce the indirect employment will also be generated for local persons. It will help in bringing prosperity to the area.

7.2.2 INDIRECT EMPLOYMENT

The project will also provide some indirect employment to the people of nearby area of mine site. Some people will get engaged in some pet shops like tea shop, vehicle repair

centre etc. It will also provide some need based opportunity to the local public. The project will provide following indirect employment to the local people:-

- The sandstone available will provide agency employment in the value chain analysis, for place utility and retail.
- Transportation and warehousing in the region required to transfer the mineral will eventually be needed and therefore trucks and jobs in logistical activities will come up.
- There will be development of externalities for the mine workers petty shops (tea, repair stations for trucks etc.) as supporting services.
- As there would be vocational training camps and Technical Training of mining to the regional people, hence there will be potential manpower available for the proposed and surrounding mines of the Tehsil.
- This would create Indigenous Technologies for sustainable development.

7.3 IMPROVEMENTS IN PHYSICAL AND SOCIAL INFRASTRUCTURE

The existing project will enhance the socio-economic activities in the adjoining areas. This will result in following benefits:-

- Improvements in physical infrastructure.
- Improvements in social Infrastructure.
- Increase in employment potential.
- Contribution to the exchequer.
- Prevention of illegal mining which will help in sustaining the river and its aesthetic value.
- Post-mining enhancement of green cover.

7.3.1 IMPROVEMENTS IN PHYSICAL INFRASTRUCTURE

It is an existing project. It will give numerous positive impacts on society such as growth in schools, hospitals, hotels, transport etc. It will also attract other entrepreneur to establish their venture in the region.

The project will improve the physical infrastructure of the adjoining areas. This will include the following:-

- Improved road communication;
- Strengthening of existing community facilities through the Community Development Programme;
- Rain water reservoir to augment the water availability for irrigation and plantation;

- Skill development & capacity building like vocational training to persons for income generation.
- Awareness program and community activities, like health camps, family welfare programs, immunization camp, plantation etc.

7.3.2 IMPROVEMENTS IN SOCIAL INFRASTRUCTURE

There will be some obvious changes in various environmental parameters due to mining activity. Increase socio-economic activities, creation of new employment opportunities, infra-structural development, better educational and health facilities.

Following are the benefits in specific area of social domain:-

Socio-Economic:- There will be positive impact in socio-economic area due to increased economic activities, creation of new employment opportunities, infrastructural development and better educational and health facilities.

Health Care Facilities: - Company will undertake awareness program and community activities like health camps, family welfare camps etc. Company will allocate total Rs. 7.0 lacs on health care adoption.

Employment Potential: - There is a possibility of creation of direct and indirect employment opportunities due to working of this mine.

The mine will contribute to the Exchequer of State and Central Government as per norms.

7.4 HEALTH

Periodic medical checkups as per Mines Act/ Rules and other social development and promotional activities will be undertaken. All this will assist to lift the general health status of the residents of the area around mines.

7.5 OTHER BENEFITS

The other tangible benefits includes metrics and improvements demonstrating process and system cost savings, compliant inspections and customer audits, faster product approvals and manufacturing throughput, less rejected material, reduced nonconformance issues, and more efficient continuous improvement and project implementation. Intangible benefits include improved staff morale, quick, more accurate and transparent decision making, increased staff accountability and an enhanced culture of quality throughout the organization.

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8.0 ENVIRONMENTAL MANAGEMENT PLAN

8.1 INTRODUCTION

A project specific Environmental Management Plan has been formulated subsequent to an EIA study as per the requisite Terms of Reference to ensure that the appropriate environmental management practices are followed in compliance with the environmental legislation.

It has been evaluated that the study area has not been affected adversely with the proposed activity and likely to get new economical fillip, not only for the study area but also for the region as a whole.

Environmental Management for the mining activity is discussed for environmental impact pertains to the operational phase. Even though is reversible in nature all the impacts will be visible only during operational phase. The EMP will therefore be initiated during operational phase.

8.2 CRITICAL ACTIVITIES FOR EMP IMPLEMENTATION

1. Training and Environmental Awareness;
2. Documentation and record keeping;
3. Reporting Procedures;
4. Stakeholder/ Project Proponent engagement;
5. Auditing;
6. Responding to Non-compliance.

8.3 ENVIRONMENTAL MANAGEMENT PLAN

S. No.	Particular	Management Plan
1.	Land Environment	➢ At the end of life of mine, excavated area will be 219.196 ha., will be partly backfilled and reclaimed & rehabilitated by plantation (83.296 ha.) and partly will be used as a water reservoir (135.90 ha.). ➢ In the lease area, top soil thickness is 0.5 – 3.0m. Soil will be stored separately and will be spread over the dumps before plantation. **Solid Waste Management** ➢ About 13.17 Million m^3 waste will be backfilled in an area of 14.363 ha. upto 17.0m height and reclaimed by plantation.
2.	Water Environment	Based on baseline data, preventive measures will be taken. ➢ Measurement of water level fluctuations to assess impact of mining activity

		on the water table depletion in close proximity of dug wells and bore wells. ➢ Rainwater harvesting (percolation tank) has been proposed for augmenting ground water resources and for arresting/ reversing the declining trends of ground water levels. ➢ Regular monitoring and analysis of water samples at strategic locations will be carried out to monitor the water quality of the area. ➢ The generated waste water will be channelized into septic tanks followed by soak pit.
3.	Air Environment	**Unpaved Roads** ➢ Water sprinkling will be done for dust suppression. ➢ Leveling of roads will be done to maintain the uniform speed of the trucks/ tippers. **Paved Roads** ➢ The roads will be maintained. ➢ Regular cleaning will be done to reduce the chances of road dust to become airborne. ➢ Adequate transportation routes will be decided to transport the mineral and will be maintained properly. ➢ Speed breakers will be constructed to restrict the speed of transporting vehicles. However, limiting of vehicular speed will be adopted. **Transportation** ➢ The vehicles will be maintained to control the air emissions. ➢ The speed of the vehicles will be maintained uniform. ➢ PUC certified vehicles will be used. ➢ The loaded vehicles will be covered with tarpaulin. ➢ Over loading will be avoided. **Other Measures** ➢ Personal Protective Equipments like dust mask, ear plugs, ear muffs etc. will be provided to the persons/ workers. ➢ Regular monitoring and analysis will be carried out through collection of air samples from strategic monitoring sites. If the parameters go beyond the permissible tolerance limits, corrective regulation measure will be taken.
4.	Noise Environment	➢ Noisy activities will be scheduled at normal working hours (daytime hours) to the extent possible when the environment is least sensitive to noise impact. ➢ Regular inspection and maintenance of vehicles and equipment will be performed to ensure efficiency and worn parts will be replaced. ➢ Limited numbers of equipments will be used on-site.

		➢ The vehicles will be maintained in good condition and overloading will be avoided. ➢ Speed limits will be enforced in relation to road conditions and on-route communities. ➢ Road surfaces will be maintained in good condition to reduce tyre noise and to assure continuous traffic flow to avoid prolonged idling. ➢ Noise monitoring will be conducted on a regular basis to determine compliance with noise criteria. ➢ Personal protective devices i.e., earmuffs and earplugs will be provided to workers, working in high noise areas. ➢ Periodical medical checkup will be organized for all workers to check any noise related health problems.
5.	Occupational Health and Safety	**Heat & Light** ➢ The mine site will have adequate drinking water supply so that workers do not get dehydrated. ➢ Lightweight and loose fitting clothes having light colors will be preferred to wear. ➢ Rigorous exercise and more physical activities will be avoided in hot weather. **Noise** ➢ Noise exposure measurements will be taken to determine the need for noise control strategies. ➢ The personal protective equipment will be provided for mine workers. ➢ Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment. ➢ At noisy working activity, exposure time will be minimized. ➢ Machineries will be labeled with noise levels. **Dust Control** ➢ Dust generating sources will be identified and proper control measure will be adopted. ➢ Face mask will be provided during mining activity. ➢ Periodic medical examinations will be provided for all workers. ➢ Awareness program will be organized for workers.
6.	Biological Environment	To mitigate adverse impact on the biodiversity and to improve habitat status of the study area:- ➢ Plantation/ greenbelt development programme will be carried out in the operational as well as conceptual phase. ➢ Greenbelt development will be carried out by using 1,94,036 plant species

which includes wild tree species, fruit trees and shrub species.

- Backfilled area (83.296 ha.) and dump area (36.3 ha.) will also planted with suitable species including grass species.
- Along with other areas, forest facing plantation will also carried out during first five years.
- Additionally some species are also suggested to grow along road side plantation to mitigate air, gas and noise pollution.
- Remaining area of mining pit (after backfilling) will act as a water reservoir (135.90 ha.), which will improve aquatic avifaunal diversity of the study area.

Ecology: Stage Wise Cumulative Plantation
REQUIREMENTS FOR PLANTS FOR AFFORESTATION AND RECLAMATION

Year	Un-worked Area		Waste Dump (Outside)		Inside Dump (Reclaimed Area)		Top Soil Dumps		Total	
	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees	Area (Ha.)	No. of Trees
Existing	37.69	37,690	--	--	--	--	--	--	37.69	37,690
I	2.85	2,850	--	--	--	--	--	--	2.85	2,850
II	2.85	2,850	--	--	--	--	--	--	2.85	2,850
III	2.85	2,850	--	--	--	--	--	--	2.85	2,850
IV	2.85	2,850	--	--	--	--	--	--	2.85	2,850
V	2.85	2,850	--	--	--	--	--	--	2.85	2,850
VIth Year Onwards	22.5	22,500	36.3	36,300	83.296	83,296	--	--	142.096	1,42,096
Total	**74.44**	**74,440**	**36.3**	**36,300**	**83.296**	**83,296**	**--**	**--**	**194.036 (38%)**	**1,94,036**

7. Socio-Economic Aspect

- Direct employment to the local people which help to sustain their livelihood. Training will be provided to the local persons.
- During the operational phase by the implementation of certain CSR activities indirect employment will also generate.
- Improved livelihood.
- Public health & safety plan is given below:-

Impact Assessment	Preventive Measures & Integrated Management Plan	Capital Cost (*In Thousands*)
Restricted Entry through Taar Bandi/ Boundary wall on the road connecting Dhaneshwar	Passing of the local public & School though the mining region is restricted though *Taarbandi*/ Boundary wall construction. Erection of such obstructions shall restrict	30.0

	& Mine Lease Boundary.	passersby entering the mining region only.	
	Warnings Display Boards	The time of the controlled blasting (low intensity) will be done post school hours, with all precautions between 3:00 to 4:00 p.m. The Warning Display Boards will be displayed at more locations:- ➢ Gram Panchayat Dhaneshwar & Sutara ➢ Marketplaces of Dhaneshwar ➢ Outside *Ma Bhari Vidhya Niketan Ucch Prathmik Vidhyalya*, Dhaneshwar ➢ Bus Stand *Dhaneshwar and various other Social & religious places where the local public can be awarded.*	10.0
	Siren Blowing	Loud signals will be blown before the time of blasting (low intensity).	-
	Ambulance	An Ambulance for the local public has been contributed to the SP office, Bundi by the Project.	-
	Safety Zone for Kheda:	Habitation of Kheda towards South boundary, a safety zone of 50 m, and an adequate Taarbandi of 6 ft height shall be built to divide the safety zone.	10.0
		Total	**50.0**

8.4 ENVIRONMENTAL ACTION PROGRAMME

The Project Proponent (Kanhaiya Lal Rameshwar Das) is quite conscious of its responsibility for maintaining clean and a healthy environment. The management is also keen to modify and make more efficient measures towards suppression of pollution sources. Adequate fund for Pollution Control Measures are provided as a part of overall project financing to ensure the availability of proper treatment facilities. The overall investment in the project is assumed to be Rs 11.0 Lacs. This cost will be spending phase wise along with the growth of project. The breakup of the proposed cost for Environment Management Programme is given as under:-

Table 8.1: Provision for Environmental Protection Measures

S. No.	Description	Recurring Cost (Rs. In Lacs)
1.	Environmental Monitoring (Air, Water, Noise)	3.0
2.	Dust Suppression (Water Sprinkling)	4.0
3.	Occupational Health and Safety (Health camps, Training etc.)	2.0
4.	Green Belt	1.0
5.	Environmental Awareness Programme	1.0
Total		**11.0**

The protection measures will be dynamic and subject to periodic review so that measures remain effective and appropriate.

8.5 CONCLUSION

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

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9.0 SUMMARY AND CONCLUSION

9.1 INTRODUCTION

The existing mining lease is situated near Village(s) - Dhaneshwar and Sutara, Tehsil - Bundi, District - Bundi, Rajasthan. The Mining Lease has been transferred in favour of M/s Kanhaiya Lal Rameshwar Das vide order dated 1st July' 2002 and rider agreement for transfer was made on July 18, 2002. The validity of lease period is 30 Years (i.e. 14.09.1994 to 14.09.2024).

9.1.1 LOCATION OF LEASE AREA

Villages	Dhaneshwar & Sutara
Tehsil HQ	Bundi
District HQ	Bundi

9.1.2 DETAIL OF MINING LEASE

S. No.	Particulars	Details
1.	Name of Project	Sandstone Mine
2.	Location	Village(s) - Dhaneshwar and Sutara, Tehsil & Bundi, Rajasthan.
3.	Lease Area	490.5509 ha.
4.	Land Type	Govt. land (161.2109 ha), Private Khatedari land (150.0 ha), Diversified forest land (104.34 ha) and Grazing/ Pasture land (75.0 ha).
5.	Latitude & Longitude	25°02'53.10" to 25°04'40.78" N; 75°32'29.21" to 75°36'01.12" E
6.	Toposheet No.	45 O/12
7.	Seismic Zone	Zone – II as per IS – 1893 (Part-1) - 2002

9.2 PROJECT DESCRIPTION

The Sandstone Mine is proposed to enhance the capacity from 80,000 TPA to 2,50,000 TPA by open cast semi-mechanized method. The lease area is 490.5509 ha. having Govt. land (161.2109 ha), Private Khatedari land (150.0 ha), Diversified forest land (104.34 ha) and Grazing/ Pasture land (75.0 ha). The total mineable reserves available are 10.70 MMT of Sandstone. The expected life of mine is 42.80 years. Total topsoil and OB generation during the first five years of the mine will be 15,500 m^3 and 6,14,400 m^3 and during the life of mine 13.17 million m^3 will be generated. ANFO (80%) and Slurry Explosive (20%) will be used in blasting for the production of 833 TPD, presuming powder factor of 8.0 kg daily requirement of explosive will be 132.0 kg. Two licensed magazines each of 2,000 kg and 500 kg capacity exist at site. At the conceptual stage, the total excavated area will be 219.196 ha.

out of which 83.296 ha. will be backfilled and rehabilitated & reclaimed by plantation and remaining 135.90 ha. will be used as a water reservoir. Water reservoirs will ultimately help in recharging the water table and also help in cultivation and irrigation. Green belt will be created by plantation. It will be carried out in 70.0 ha. of undisturbed land, nursery and office etc.

9.2.1 GEOLOGY

9.2.1.1 Local Geology

The rocks of the area belong to the Vindhyan group. Main rock type in the lease area is lower Bhander Sandstone (Bundi Hill Sandstone). In the area sandstone is overlain in the alluvial soil, murram and weathered sandstone. Lithographic sequence observed in the area is as given below:-

Table 9.1: Geological Succession

Alluvium Soil	0.5 – 3.0m
Murram and Weathered Sandstone	1.0 – 3.0m
Hard and Compact Sandstone	4.0 – 20.0m
Spittable Sandstone	1.0 – 10.0m

(Source: - Geology Survey of India, Jaipur)

9.2.1.2 Physiography

The lease area is flat and at some places undulated. Highest elevation is 490.0 MSL western sides and lowest elevation is 460.0 MSL eastern sides. The climate of the area is semi-arid type. The drainage of the mine is towards S. A perennial river Eru, as a surface water source, flows at a distance of 2.786 km towards south from the lease area.

9.2.2 GEOLOGICAL AND MINEABLE RESERVES

Geological Reserve : 1,76,90,361.25 T
Mineable Reserve : 1,07,02,391.25 T
Production : 2,50,000 TPA
Life of Mine : 42.80 Years

9.2.3 MINING

The mining activities have been carried out by open – cast semi-mechanized method.

The salient features of mode of working as per approved Modified Mining Plan are:-

- The mining will be carried out by open cast semi - mechanized method.

- The height and width of the bench will be maintained at 6.0 m.
- Top soil of 0.5 – 3.0m is scraped through excavator and stacked at designated places.
- Overburden is handled by excavator – dumper combination.
- Mining of sandstone starts with separating the layer from natural bondage by chisel and hammering along cleavage plane/ weaker zone.
- Line drilling of hole is also used to split massive sandstone rocks.
- Mineral will be transported to the processing plant. It will be cut into sizes as per market demand and packed and transported outside the end user's.

9.2.4 PRODUCTION DETAILS

The year wise development of mines for five year will progress as per the table below:-

Table 9.2: Production Details

Year	Production (Tonnes)	Production (m^3)	O.B/ Waste (m^3)	OB : Mineral ratio (M^3 : Tonne)
2015 - 2016	1,50,000	60,120	1,48,800	1.03:1
2016 - 2017	2,50,000	1,00,200	2,64,000	
Total	**4,00,000**	**1,60,320**	**4,12,800**	

9.2.5 LAND USE PATTERN

The land use for mining and allied purposes is given in Table 9.3.

Table 9.3: Land Use Pattern

S. No.	Particulars	Present Land Use (ha.)	At the End of 5th year (ha.)	At the End of Life of Mine (ha.)
1.	Pit area	83.46	85.86	83.296 ha. (Reclaimed & Rehabilitated by Plantation) 135.90 ha. Water Reservoir
2.	Dump Area	36.3	36.3	36.3 (Rehabilitated by Plantation)
3.	Road	15.24	16.2	14.7 (Public Use)
4.	Infrastructure	7.60	8.0	8.50 (Public Use)
5.	Mineral Storage	3.28	4.50	7.50 (Plantation)
6.	Plantation	37.69	51.94	66.94
7.	Un-worked	306.9809	287.7509	137.4149
Total		**490.5509**	**490.5509**	**490.5509**
Above mentioned land use figures may change after sanction of partial surrendered lease area.				

9.3 DESCRIPTION OF THE ENVIRONMENT

For monitoring the environmental parameters like meteorology, air, water, soil and noise quality, the monitoring stations have been established at seven locations in the study area. Additionally two stations were selected for surface water sampling. The baseline data has been collected in the post – monsoon season (October to December' 2015). The detail of the sampling locations is given in below:-

Table 9.4: Sampling Location

Sampling Location	Distance (Km)	Direction	Components	Remarks
Mine Site	--	--	Air, Water, Noise, Soil	--
Gudha	1.5	SSW	Air, Water, Noise, Soil	Downwind
Chainpuriya	1.3	NNW	Air, Water, Noise, Soil	Upwind
Dhaneshwar	1.1	NE	Air, Water, Noise, Soil	Upwind
Tapura Ki Khan	4.2	SE	Air, Water, Noise, Soil	Crosswind
Dasoliya	1.4	SW	Air, Water, Noise, Soil	Downwind
Sutara	1.6	NW	Air, Water, Noise, Soil	Major Habitation
Eru Nadi	1.0	S	Surface Water	--
Dhaneswar Thalab	2.1	NNE	Surface Water	--

9.3.1 LAND ENVIRONMENT

9.3.1.1 Land Use

The land use pattern of the study area based on the latest satellite imagery is given below:-

Table 9.5: LULC

S. No.	LULC Class	Area (Ha.)	Area (%)
1	Lease Area	490.5509	1.28
2	Built-up-Residential	288.64	0.72
3	Built-up-Transportation-Road	192.03	0.48
4	Other Mining Area	2356.91	5.90
5	Agriculture Land	5034.32	12.61
6	Fallow Land	5098.08	12.77
7	Plantation	8.95	0.02
8	Forest-Reserved Forest	22780.44	57.05
9	Forest Land	2414.15	6.05
10	Barren Land/ Hilly	146.2136	0.352
11	Water body-Pond	156.58	0.39
12	Water body-River	939.46	2.35
	Total	**39928.89**	**100.00**

9.3.1.2 Soil Quality

Soil samples were collected from seven representative sampling locations. The soil analysis results are given below:-

Color of Soil	: Brown Color
pH	: 7.01 – 8.06
Total Organic Carbon	: 2.92 - 4.39 (%)
Nitrogen as N	: 212 - 368 mg/ 100 g
Phosphorus as P	: 52- 97 mg/ 100 g
Potassium as K	: 116 - 187 mg/ 100 g
Boron as B	: 0.068 – 0.33 mg/ kg
Copper as Cu	: 0.11 - 0.41 mg/ kg.
Iron as Fe	: 0.11 - 0.28mg/ kg
Zinc as Zn	: 2.44 - 5.89 mg/ kg

9.3.2 WATER ENVIRONMENT

Seven ground water samples have been considered in the study area. The analysis results are presented below:-

Table 9.6: Ground Water Quality

S. No.	Parameter	Units	Drinking Water Standard IS:10500 (2012)		Mine Site	Gudha	Chainpuriya	Dhaneshwar	Tapura Ki Khan	Dasoliya	Sutara
			Requirement (Desirable Limits)	Permissible Limits in the Absence of Alternate Source							
	Date of Sampling										
1	pH	-	6.5 – 8.5	NR	7.04	6.85	7.26	6.84	6.79	7.06	7.24
2	Color	Hazen	< 5	< 25	<01	<01	<01	<01	<01	<01	<01
3	Taste	-	Agreeable	Agreeable	Agreeable						
4	Odor	-	Unobjectionable	-	Unobjectionable						
5	Conductivity	µS/cm	--	--	872	356	1426	692	436	818	898
6	Turbidity	NTU	< 5	< 10	1.1	1.3	1.2	1.1	1.0	1.1	1.1
7	Total Dissolve Solids	Mg/ l	< 500	< 2000	554	228	917	438	279	524	572
8	TH as $CaCO_3$	Mg/ l	< 300	< 600	220	120	540	210	150	260	340
9	Total Alkalinity	Mg/ l	< 200	< 600	290	70	290	200	100	180	270
10	Calcium as Ca	Mg/ l	< 75	< 200	48.0	24.0	120.0	48.0	36.0	64.0	92.0
11	Magnesium as Mg	Mg/ l	< 30	< 100	24.0	14.4	57.6	21.6	14.4	24.0	26.4
12	Residual Chlorine	Mg/ l	< 0.2	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
13	Boron	Mg/ l	< 1	< 5	0.028	0.021	0.028	0.029	0.015	0.021	0.062
14	Chloride as Cl	Mg/ l	< 250	< 1000	60.0	35.0	190.1	55.0	40.0	90.0	65.0
15	Sulphate as SO_4	Mg/ l	< 200	< 400	40.8	44.8	130.8	50.4	45.7	80.8	65.7
16	Fluorides as F-	Mg/ l	< 1.0	< 1.5	0.7	0.3	0.2	0.5	0.3	0.6	0.3
17	Nitrates as NO_3	Mg/ l	< 45	< 100	4.2	6.9	11.3	9.4	8.1	10.7	11.2
18	Phenolic Compounds	Mg/ l	< 0.001	< 0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Cyanide as CN	Mg/ l	< 0.05	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Anionic Detergents	Mg/ l	< 0.2	< 1.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Mineral Oil	Mg/ l	< 0.01	< 0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cadmium as Cd	Mg/ l	< 0.01	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Arsenic as As	Mg/ l	< 0.01	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Copper as Cu	Mg/ l	< 0.05	< 1.5	0.043	0.025	0.035	0.049	0.029	0.037	0.025

25	Lead as Pb	Mg/ l	< 0.05	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
26	Manganese as Mn	Mg/ l	< 0.1	< 0.3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
27	Iron as Fe	Mg/ l	< 0.3	< 1.0	0.16	0.18	0.24	0.25	0.12	0.13	0.14
28	Chromium as Cr^{6+}	Mg/ l	< 0.05	NR	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
29	Zinc as Zn	Mg/ l	< 5	< 15	0.069	0.046	0.072	0.059	0.025	0.029	0.036
30	Aluminum as Al	Mg/ l	< 0.03	< 0.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
31	Mercury as Hg	Mg/ l	< 0.001	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
32	Selenium as Se	Mg/ l	< 0.01	NR	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
33	E. coli	No./100ml	Absent	-	Not detected						
34	Coliform Organisms	MPN/100 ml	<10	--	Not detected						

9.3.3 AIR ENVIRONMENT

To assess the baseline status of the air quality in the study area systematic ambient air quality monitoring has been carried out for criteria pollutants (PM_{10}, $PM_{2.5}$, NO_X, SO_2, CO) at seven representative ambient air quality monitoring stations.

9.3.3.1 Meteorology

The recorded meteorological data for the study period at mine site is given below:-

Table 9.7: Summary of Meteorological Parameters

Month	Temperature (˚C)		Relative Humidity (%)		Rainfall (mm)		Wind Speed (mile/h)	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
October' 15	41.4	15.7	81.4	7.7	0	0	10	<1.0
November' 15	32.6	13.4	69.5	6.8	0	0	9	<1.0
December' 15	36.4	8.6	87.6	6.8	0	0	8	< 1.0

9.3.3.2 Ambient Air Quality

Ambient air quality monitoring has been carried out with a frequency of two days a week at seven locations covering one complete season i.e. October - December' 2015. The summary of these results for all the locations is given below. These are compared with the standards prescribed by Central Pollution Control Board (CPCB) for rural and residential zone.

Table 9.8: Ambient Air Quality Status

S. No.	Criteria Pollutant	Locations	Arithmetic Mean	Minimum	Maximum	Standard Deviation	98th percentile	CPCB Standards
1	PM_{10}	Mine Site	36.7	18.6	30.9	3.4	42.8	100
		Gudha	44.3	50.2	37.9	3.8	50.0	
		Chainpuriya	33.7	38.4	29.9	2.5	37.7	
		Dhaneshwar	50.7	56.3	42.6	3.6	56.1	
		Tapura Ki Khan	28.9	35.6	21.6	3.2	34.3	
		Dasoliya	26.2	31.5	22.0	2.6	31.4	
		Sutara	25.4	29.6	20.9	2.1	29.0	
2	$PM_{2.5}$	Mine Site	18.6	22.4	15.0	2.1	22.4	60
		Gudha	24.1	28.4	20.1	2.3	28.4	
		Chainpuriya	18.3	20.9	15.6	1.6	20.7	
		Dhaneshwar	27.6	31.0	22.0	2.5	31.0	
		Tapura Ki Khan	15.8	19.6	11.4	2.0	19.0	
		Dasoliya	14.2	17.7	11.9	1.6	17.7	
		Sutara	13.8	15.7	11.6	1.3	15.7	

3	SO_2	Mine Site	5.6	6.4	4.6	0.5	6.4	80
		Gudha	5.0	5.8	4.3	0.4	5.8	
		Chainpuriya	4.7	5.4	4.1	0.4	5.4	
		Dhaneshwar	5.8	6.9	4.6	0.5	6.8	
		Tapura Ki Khan	4.7	5.2	4.1	0.3	5.2	
		Dasoliya	4.5	5.0	4.1	0.3	5.0	
		Sutara	4.6	5.1	4.1	0.3	5.0	
4	NO_X	Mine Site	19.2	23.5	14.5	2.2	23.2	80
		Gudha	16.9	19.9	13.1	1.9	19.7	
		Chainpuriya	14.0	17.3	11.6	1.7	17.1	
		Dhaneshwar	19.7	23.8	14.6	2.0	23.6	
		Tapura Ki Khan	12.5	14.3	10.5	1.1	14.3	
		Dasoliya	12.7	14.6	10.9	1.0	14.4	
		Sutara	12.4	15.9	10.5	1.3	15.4	
5	CO	Mine Site	882.3	1124	468	167.2	1121	2000
		Gudha	945.1	1360	649	187.9	1333	
		Chainpuriya	674.8	942	468	146.7	914.0	
		Dhaneshwar	1242.5	1422	1056	108.7	1421.0	
		Tapura Ki Khan	682.2	965	522	135.9	947.0	
		Dasoliya	685.7	960	536	152.7	953.0	
		Sutara	687.6	845	497	88.7	835.5	

9.3.4 NOISE ENVIRONMENT

The noise monitoring has been conducted for determination of noise levels at seven locations in the study area. The noise levels at each location were recorded for 24 hrs. The results obtained were compared with the national standards and were found to be within the standards. The collected data are:-

Table 9.9: Ambient Noise Level Status

Station Name	Mine Site	Gudha	Chainpuriya	Dhaneshwar	Tapura Ki Khan	Dasoliya	Sutara
Sampling Date	20.10.2015	26.10.2015	05.11.2015	09.11.2015	15.11.2015	23.11.2015	26.11.2015
Day Time							
7.00	41.6	46.2	39.9	37.5	37.9	39.9	40.8
8.00	42.9	48.5	43.2	39.6	40.6	41.5	41.9
9.00	45.6	50.2	47.9	42.9	42.5	42.6	45.6
10.00	49.9	53.5	49.9	45.8	46.6	47.9	48.9
11.00	51.6	52.3	50.2	48.5	49.6	49.9	50.6

12 Noon	52.0	51.0	51.6	49.6	48.7	50.9	51.8
13.00	50.3	50.0	52.0	50.3	50.9	52.6	52.6
14.00	50.6	51.6	51.2	50.0	52.0	51.4	51.5
15.00	49.6	48.9	50.9	48.2	50.8	50.6	49.9
16.00	48.3	46.8	50.3	47.5	49.6	49.9	48.7
17.00	46.7	50.2	49.9	46.4	48.7	50.6	47.6
18.00	49.9	51.6	50.6	45.1	47.3	49.7	50.6
19.00	50.6	46.4	51.3	48.2	49.8	50.6	48.1
20.00	51.3	45.5	52.0	49.5	50.5	52.3	46.2
21.00	50.1	44.3	51.2	50.6	51.6	53.5	43.2
Night Time							
22.00	48.7	42.9	48.6	49.2	50.0	51.5	41.0
23.00	47.6	40.3	46.5	48.5	48.9	49.4	38.6
24.00	44.3	38.9	44.3	44.6	46.4	46.5	35.0
1.00	40.2	36.9	42.1	41.2	44.1	44.7	35.0
2.00	39.8	35.2	40.3	38.8	38.6	40.5	35.0
3.00	38.1	36.4	38.7	36.5	37.2	37.2	36.5
4.00	36.3	38.9	37.2	35.6	36.4	36.2	38.7
5.00	38.9	40.5	35.6	35.2	35.2	35.1	36.7
6.00	40.1	42.3	37.9	35.0	37.3	37.7	39.9
Leq day dB(A)	**49.5**	**49.9**	**50.3**	**47.8**	**49.1**	**50.2**	**49.0**
Leq Night dB(A)	**43.6**	**39.8**	**43.3**	**43.8**	**44.8**	**45.7**	**37.9**
LDay equivalent	**48.2**	**48.4**	**48.9**	**46.8**	**48.1**	**49.0**	**49.7**

Standards (Leq)	**Day Time (6.00 AM to 10.00 PM)**	**Night Time (10.00 PM to 6.00 AM**
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

9.3.5 SOCIO-ECONOMIC ENVIRONMENT

The study area includes the 25 villages of Tehsil & District - Bundi within 10 km of area from mine periphery.

Table 9.10: Demography Profile of the Study Area

S. No.	Particulars		Details
1.	No. of Villages		25
2.	Total Population		42,074
	a.	Male	21,856

	b.	Female	20,218
3.	No. of Households		8,393
4.	No. of Literates		16,380
	a.	Male	10,882
	b.	Female	5,498
5.	Main Workers		14,892
	a.	Male	11,059
	b.	Female	3,833
6.	Marginal Workers		2,632
	a.	Male	748
	b.	Female	1,884
7.	Non-workers		24,409
	a.	Male	9,980
	b.	Female	14,429

Source: Census of India, 2011

9.3.6 BIOLOGICAL ENVIRONMENT

Flora	
Core Zone	**Buffer Zone**
Herb - 12 Species	Herbs - 27 Species
Grass - 3 Species	Grass - 12 Species
Shrubs - 5 Species	Shrubs - 26 Species
Tree - 9 Species	Tree - 51 Species

Fauna	
Core Zone	**Buffer Zone**
Herpetofauna – 3 Species	Herpetofauna – 7 Species
Avifauna - 5 Species	Avifauna - 67 Species One Schedule I species reported i.e. Indian peafowl *(Pavo cristatus).*
Mammals - 2 Species	Mammals - 13 Species Three Schedule I & II species reported i.e. Leopard, Gray Mongoose and Sloth Bear

9.4 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

The summary of anticipated adverse environmental impacts due to the proposed expansion and mitigation measures are given below:-

Impact	Mitigation Measures
Land Environment	
Land will be degraded due to mining and dumping of waste	➢ The excavated pit will be partly used as a water reservoir (135.90 ha.) and partly will be backfilled and reclaimed & rehabilitated by plantation (94.94 ha.). ➢ Soil will be used for plantation. ➢ Dumping area (36.3 ha.) will be reclaimed and rehabilitated by plantation.
Water Environment	
Discharge of effluents water from the mine. Intersection of ground water table during mining operations.	There will be no discharge of effluent from the mine. Mine sump will act as reservoir of water and also allow settlement of sediments, if any, so that clear water is available for dust suppression and plantation and other activities like washing etc. As per the approved Modified Mining Plan ultimate pit level (430 MSL) will be above the ground water table and hence it will not be intersected.
Air Environment	
➢ Dust will be generated mainly during excavation, loading & unloading activities. ➢ Gaseous pollutants will by generated mostly by the traffic.	➢ It will be ensured that all the vehicles plying in the working zone are properly tuned and maintained to keep emissions within the permissible limits. ➢ At loading & unloading points and transportation routes, arrangement for water sprinkling will be made to minimize dust generation. ➢ In order to predict changes in the air quality, AERMOD version 7.1.0 model was used. The maximum incremental ground level concentrations of particulate matter PM_{10} & $PM_{2.5}$, and gaseous pollutants NO_X & CO from the different mining activities for the study period (post-monsoon) with EMP were observed to be 15.6 µg/m^3, 6.3 µg/m^3, 5.9 µg/m^3 and 9.8 µg/m^3 respectively. ➢ The resultant will remain within the National Ambient Air Quality Standards for industrial/ residential areas.
Noise Environment	
➢ Noise due to mining activities. ➢ Noise due to vehicular movement.	➢ The noise levels from all these sources are periodical and restricted to particular operation. ➢ The noise measurement data indicated that present noise levels in the study area is within the permissible limits of National Ambient Noise Quality Standards. ➢ Thus, due to natural attenuation effects by proper green belt/ maintenance of machines etc., the impact of noise levels will be minimal.
Socio-Economic Environment	
➢ Employment generation	➢ The mining activity puts negligible change in the socio economic profile.

➢ Health impacts ➢ Education Facilities	➢ No displacement (0) is required due to Sandstone mine expansion. ➢ Approx. 300 local workers will get employment opportunities along with periodical training to generate local skills. ➢ New patterns of indirect employment/ income will generate. ➢ Regular health Check up camp. ➢ Assistance to schools and Eco club activities for children will be provided.
Biological Environment	
➢ Impact on biodiversity ➢ Impact on threatened species	➢ The core zone does not encompass any threatened flora or fauna species. However, from buffer zone, Leopard, Sloth Bear, Peacock & Mongoose – Schedule – I & II species was reported, for which conservation plan has been prepared. ➢ Only some common herbs, shrubs and grass will be cleared. So there will be no impact on the biodiversity. ➢ About 1,94,036 local and native species will be planted every year. ➢ Green belt development with suitable species will enhance the biodiversity of the project area. ➢ Implementation of conservation plan for Peacock will help to improve population status of that species. ➢ Implementation of conservation plan for Leopard, Grey Mongoose and Sloth Bear will help to Human-Animal conflict

9.5 ENVIRONMENTAL MONITORING PROGRAMME

9.5.1 AIR

Air quality monitoring will be carried out as per norms of RSPCB and CPCB.

9.5.2 WATER

Regular monitoring of ground water quality will be carried out at suitable locations. Water samples will be collected four times in a year i.e. Pre - Monsoon, Monsoon, Post - Monsoon and winter.

9.5.3 NOISE

Noise level will be recorded periodically at mine site near operating machines during day and night time.

9.5.4 HEALTH AND SANITATION

Periodical medical checkup of workers is being done and medical facility provided. Toilets and urinals are provided 150 in numbers in the mine lease hold. Drinking water will be made available to the workers.

9.6 ADDITIONAL STUDIES

9.6.1 PUBLIC HEARING

Public hearing has been carried out as per the EIA Notification 14th September' 2006 and guidelines on dated 11.05.2016.

9.6.2 RISK ASSESSMENT & MANAGEMENT

Risk analysis is the systematic study of uncertainties and risks encountered in various areas. Risk analysts seek to identify the risks involved in mining operations, to understand how and when they arise, and estimate the impact (financial or otherwise) of adverse outcomes. It also defines and analyzes the dangers to individuals, businesses and government agencies posed by potential natural and human-caused adverse events.

However, there are various factors, which can create unsafe working conditions/ hazards in mining of Sandstone (minor minerals). The following types of hazards are identified during the Sandstone mining operations:-

1. Accident during mineral loading, transportation and dumping
2. Accident due to vehicular movement
3. Inundation/ Flooding

Following procedure will be followed for effective management of any disaster in the mine.

Step 1: Identification of Disaster risk.

Step 2: Identification of persons at risk

Step 3: Removal of Hazard

Step 4: Evaluation of the risk

Step 5: Control measures to be taken

Step 6: Maintain Assessment records

Step 7: Review

9.7 PROJECT BENEFITS

The demand of Sandstone has been rising in the state as a result of rising in construction activities and development of the existing project aims to fulfill the supply of Sandstone. The capacity of mine is 2,50,000 TPA, aiming to fill the demand – supply gap.

This sandstone mining will generate direct and indirect employment. Economy of the area will get a boost and there will be overall growth of the region in terms of education, health, training, awareness, transport, automobile, industry, and infrastructure. The standard of living accordingly will also get an upliftment on the positive side. Plantation will be carried out as social forestry programme in villages, school and the areas allocated by the Panchayat/ State authorities to improve environment of its surrounding area.

9.8 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan (EMP) aims at the reservation of ecological system by considering in – built pollution abatement facilities at the mine site. Some of the major criteria governing the environmental measures will be adopted.

9.8.1 LAND USE MANAGEMENT

The following reclamation plan will be adopted in this mine.

1) At the end of life of mine, total excavated area will be of 219.196 ha.
2) Plantation is proposed over an area of 66.94 ha. on un-worked area, backfilled pit and dumping area.

9.8.2 WATER POLLUTION MANAGEMENT

Some of the control measures adopted for controlling water pollution are as follows:-

- Based on results from monitoring corrective regulatory measures will be taken.
- Measurement of water level fluctuations to assess impact of mining activity on the water table depletion in close proximity of dug wells and bore wells.
- Rainwater harvesting has been proposed which has been accepted world wide as cost-effective methods for augmenting ground water resources and for arresting/reversing the declining trends of ground water levels.
- Regular monitoring and analysis of water samples at strategic locations will be carried out to monitor the water quality.
- Domestic waste water will be channelized into septic tank followed by soak pit.

9.8.3 AIR POLLUTION MANAGEMENT

Following mitigation measures are envisaged:-

- The speed of the vehicles will be maintained uniform.
- Regular pollution checks and certification of vehicles will be done.

- Limited number of mine-related vehicle will be maintained on the public roadways to reduce the traffic to minimize impacts on local people.
- The loaded vehicles will be covered with tarpaulin.
- Over loading will be avoided and free board will be left in the loaded trucks to prevent spillage.
- The roads will be maintained.
- Regular cleaning will be done to reduce the chances of road dust to become airborne.
- Water sprinkling will be done on a fixed stretch of paved road.
- Natural barriers will be developed along the roadside to control the dispersion of dust particles.
- Speed breakers will be constructed to restrict the speed of transporting vehicles. However, limiting of vehicular speed will be adopted.
- Regular monitoring and analysis will be carried out through collection of air samples from strategic monitoring sites. If the parameters go beyond the permissible tolerance limits, corrective regulation measure will be taken.

9.8.4 NOISE POLLUTION MANAGEMENT

The following control measures are to be undertaken to bring down the noise levels:-

- Noise barriers will be constructed to control the noise pollution.
- Noisy activities will be scheduled at normal working hours (daytime hours) to the extent possible when the environment is least sensitive to noise impact.
- Regular inspection and maintenance of vehicles and equipment will be performed to ensure efficiency and worn parts will be replaced.
- The vehicles will be maintained in good condition and overloading will not be done.
- Speed limits will be enforced in relation to road conditions and on-route communities.
- Noise monitoring will be conducted on a regular basis to determine compliance with noise criteria.
- Personal Protective Equipments i.e., earmuffs and earplugs will be provided to workers, working in high noise areas.
- Periodical medical checkup will be organized for all workers to check any noise related health problems.
- Operational noise level status will be displayed on machines to identify the extent of noise level and to control the exposure times at which worker are exposed to higher noise levels.

9.8.5 OCCUPATIONAL HEALTH AND SAFETY

- To avoid any adverse effect on the health of the workers due to dust, noise etc. extensive measures has to be adapted related to safety aspect.
- Regular maintenance and testing all the tools & equipments as per manufacturer's guidelines.
- Provision of personal protective equipment to the workers working in the mine.
- Periodical Medical Examination of all workers by medical specialists will be conducted.
- Awareness program will be organized for workers.

9.8.6 SOCIO-ECONOMIC MANAGEMENT

- Environmental officer will be responsible to manage the performance of mine on environmental issues.
- Approx. 300 local workers will be directly and about 10 will be indirectly employed.
- Employment opportunities along with periodical training to generate local skills.
- Local employment will be ensured. On the job training to local people will be given and periodically upgraded.
- Regular health camps to trace the developments and control any ill-consequences due to any mining will be done under CSR.
- As a part of Corporate Social Responsibility, it is proposed to spent cost of Rs 15.00 Lacs as capital cost with recurring amount of Rs. 1.638 Lacs on annual basis for local development activities of the concerned issues observed in the villages.

9.8.7 BIOLOGICAL MANAGEMENT

No adverse impact & no genetic diversity loss are anticipated from the mining activity. However due care & extensive plantation activity will be undertaken to reduce impact from the activity. Conservation plan for Schedule – I & II animal i.e. "Peacock", "Grey Mongoose" "Leopard" and "Sloth Bear" will be implemented.

9.9 CONCLUSION

EIA study was performed as per the approved TOR. Various environmental attributes were studied relating with aspects of mining activities. The related impacts were identified and evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and accordingly fund was allocated. The EMP has been dynamic, flexible and subject to periodic review. CSR activities were identified and for its time bound implementation, fund has been allocated.

The project will increase the revenue of the State Govt. as well as it will help in the social upliftment of the local people. The greenbelt development programme will help in increasing the green cover in the nearby areas. Thus, the existing project is not likely to affect the environment or adjacent ecosystem adversely. The Senior Management will be responsible for the project review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

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SECTION – X

INDEX

10.0 DISCLOSURE OF CONSULTANTS ENGAGED

Declaration by Experts contributing to the EIA of Sandstone Mine.

I hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

EIA Coordinator		**Signature & Date**
Name	K. N. Sudershan Rao	
EIA Coordinator	Neha Bhargava	
Period of Involvement	10.04.2012 – 15.05.2017.	
Contact Information	0141-2354997, 2353996	

Functional Area Experts: -

S. No.	Functional Areas	Name of the Expert/s	Involvement (Period & Task**)	Signature & Date
1	AP	K. N. Sudershan Rao Prabhakar Sharma (TM)	➢ Relevant inventorization ➢ Prediction of air pollution and its management.	
2	WP	Sunita Mantri Aakansha Rampuria (AFAE)	➢ Relevant inventorization ➢ Prediction of water pollution and its management. ➢ Water balance.	
3	SHW	Sunita Mantri Neha Bhargava (TM) Prabhakar Sharma (TM)	➢ Identification of nature of waste, categorization, and quantity of generated OB/ waste. ➢ Prediction of waste pollution and its management.	
4	SE	Shubhangi Tibra Puran Singh Gurjar (AFAE)	➢ Secondary data: Census of India, 2011 ➢ Socio-Economic Survey ➢ Socio Economic Impact Assessment ➢ SE Parametric Impact Unit ➢ Public hearing Action Plan	
5	EB	Dr. Yati Kachhawa Dinesh Bohra (Revalidate the data)	➢ Ecological and biodiversity survey ➢ Identification of species (flora and fauna). ➢ Conservation Plan for fauna of schedule-I species.	Left the organization.

6	HG	Vikrant Mahendran	➢ Hydrogeological survey for assessing aquifer distribution of the area ➢ Water resource evaluation of the area. ➢ Pre-monsoon & Post-monsoon collection of water level & quality data.	
7	GS	Vikrant Mahendran	➢ Field Survey for assessing the regional and local geology of the area.	
8	AQ	K. N. Sudershan Rao Neha Bhargava Prabhakar Sharma (TM)	➢ Study of primary data ➢ Air Quality Modelling and its interpretation.	
9	NV	K. N. Sudershan Rao	➢ Prediction of Noise pollution. ➢ Mitigation measures	
10	LU	Vikrant Mahendran	➢ Satellite imaginary. ➢ Inference	
11	RH	K. N. Sudershan Rao Divyesh Giri Goswami (AFAE)	➢ Assessment of risk involved, if any. ➢ Management plan for safety.	
12	SC	Vikrant Mahendran	➢ Study of Soil type. ➢ Identification of Impact. ➢ Suggest Mitigation Measures.	

Declaration by the Head of the Accredited Consultant Organization

I, Sunita Mantri, hereby, confirm that the above mentioned experts prepared the EIA of Sandstone Mine (Minor Mineral). I also confirm that I shall be fully accountable for any misleading information mentioned in this statement.

Signature	
Name	Sunita Mantri
Designation	CMD
Name of the EIA Consultant Organization	Enkay Enviro Services Pvt. Ltd., Jaipur
NABET Certificate No. & Issue Date	At S. No. 42 as per List of Accredited EIA Consultant Organizations.

****

ANNEXURE

ANNEXURE - I

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159600,5159695Fax: 0141-5159697

Registered

File No **F(Mines)/Bundi(Bundi)/2(1)/2009-2010/363-369**

Order No 2016-2017/Mines/6995 **Date: 18/04/2(**

Unit Id : 8,246

M/s Kanahiya Lal Rameshwar Das

B-72, Vallabh Nagar, Kota

District : Kota- 324 007.

E-Mail : arorasunder@yahoo.com

Sub: Grant of Consent to Operate under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981 for your **Minor Mineral** Mine at near Village-**Dhaneshwar**, Tehsil-**Bundi**, District- **Bundi (M.L.No-47/94)**.

Ref: (i) Your application dated 29/09/2015
(ii) Received on 30/09/2015

Sir,

In view of the details submitted vide your above referred application/ documents, the **Consent to Operate** under section 21(4) of Air (Prevention & Control of Pollution) Act,1981 is hereby granted for carrying mining activities. This consent is subject to the following stipulations:-

1 That this consent is being granted in favour of **M/s. Kanahiya Lal Rameshwar Das,** a Mine of **Minor Mineral** having **M.L.No-47/94 in an area measuring 618.3400 Hectares** at/near Village-**Dhaneshwar** ,Tehsil-**Bundi**,District-**Bundi**.

2 That this consent is valid for a period from **18/04/2016** to **31/03/2019**

3 That this consent is valid for following mining activities :-

Mineral	Permitted Mining Capacity
1 SAND STONE	80000.0000 TON/ANNUM

4 That you shall achieve following standards in ambient air in mine area / mining activities.

Pollutant	Standards for Ambient Air	Standards for mining activity
SPM	500 µg/M^3	SPM = 600 µg/M^3 (To be measured between 3 to 10 meters from mining activity)
SO_2	120 µg/M^3	
NO_x	120 µg/M^3	
CO	5000 µg/M^3	

215

Signature valid

Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159600,5159695Fax: 0141-5159697

Registered

File No **F(Mines)/Bundi(Bundi)/2(1)/2009-2010/363-369**

Order No 2016-2017/Mines/6995 **Date: 18/04/2016**

Unit Id : 8,246

5 That your mining will not intersect the Ground Water Table during the consent period and the permission from the Central Ground Water Authority shall be obtained for intersection of Ground Water Table/ abstraction of ground water, if any and submit a copy of the same to the Board.

6 That this **Consent to Operate** is for mining / processing / beneficiation of product as mentioned above in **M.L.No.-47/94** and a separate **Consent to Operate** is required to be obtained for any other Mineral mining/ processing/ beneficiation Plant/process if any and for any addition/ modification/ alteration or change in process.

7 **That this consent to operate is subject to the order of the Hon'ble National Green Tribunal in the matter of Himmat Singh Shekhawat Vs. State of Rajasthan & Ors. and other related matters.**

8 **That all other clearances/ permissions including Wildlife Clearance from the Standing Committee of the National Board for Wildlife shall be obtained, as may be required under the Wildlife (Protection) Act, 1972 or any other act/ rules/ notifications and/ or any orders of the Hon'ble NGT/ court.**

9 **That mining shall be carried out strictly according to the Approved Mining Plan revised on 14.10.2015 and mining shall not be carried out within 1 km of the boundary of the Jawahar Sagar Wildlife Sanctuary.**

10 **That monitoring of ambient air quality shall be carried out within one month of commencing production through a laboratory notified by the Ministry of Environment, Forest & Climate Change (MoEF&CC) and the monitoring report shall be submitted to the Board within 15 days thereafter.**

11 **That plantation shall be developed so as to cover at least 33% of the total land use for mining and allied activities as given in Approved Mining Plan and shall be maintained at all the time to maintain ambient air quality around the mine.**

12 **That ground water shall not be abstracted without prior approval of the Central Ground Water Authority (CGWA).**

13 **That the mining operations shall be restricted to above ground water table and should not intersect ground water table. In case of working below the ground water table, prior approval of the CGWA shall be obtained.**

14 **That adequate measures shall be taken for control of fugitive emissions from the areas prone to air pollution.**

15 **That haul roads should be regularly graded and compacted. Regular water sprinkling should be carried out on haul roads to minimise dust generations.**

Signature valid
Digitally signed by NIRAJ MA[illegible]R
Date: 20[illegible].18
13:0[illegible]5:30

Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159600,5159695Fax: 0141-5159697

Registered

File No **F(Mines)/Bundi(Bundi)/2(1)/2009-2010/363-369**

Order No 2016-2017/Mines/6995 **Date: 18/04/2016**

Unit Id : 8,246

16 **That the standards with respect to ambient air quality, as prescribed vide MoEF&CC Notification no. GSR (E) dated 16.11.2009 shall be complied.**

17 That all other general conditions enclosed as **Annexure** shall be strictly complied with.

18 That this Consent is subject to the conditions as stated above and general conditions as stated in **Annexure**. Further, the mining unit will comply with the provisions of the Air (Prevention & Control of Pollution) Act, 1981 and any such conditions as may be specified from time to time by the State Board under the provisions of the aforesaid Act.

19 That the grant of this **Consent to Operate** is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/ unit/ project proponent.

20 That the grant of this **Consent to Operate** shall not, in any way, adversely affect or jeopardize the legal proceedings, if any, instituted in the past or that could be instituted against you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

This bears approval of the competent authority.

Encl: As Above

Yours sincerely

Group Incharge-Mines

217

Signature valid

Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159600,5159695Fax: 0141-5159697

Registered

File No **F(Mines)/Bundi(Bundi)/2(1)/2009-2010/363-369**

Order No 2016-2017/Mines/6995 **Date: 18/04/2016**

Unit Id : 8,246

Copy To:-

1 Mining Engineer, Department of Mines & Geology, Government of Rajasthan, Bundi - That this consent to operate is subject to the order of the Honble National Green Tribunal in the matter of Himmat Singh Shekhawat Vs State Of Rajasthan & Ors and other related matters.

2 Director, Department of Mines & Geology, Shastri Circle, Udaipur -That this consent to operate is subject to the order of the Honble National Green Tribunal in the matter of Himmat Singh Shekhawat Vs State Of Rajasthan & Ors and other related matters..

3 Chief Wild Life Warden,Rajasthan,Forest Department,Aranya Bhawan,Jhalana Doongri,Jaipur,Please ensure the compliance /applicability of the wildlife and forest clearances.

4 Regional Officer, Regional Office, Rajasthan State Pollution Control Board, Kota - Please carry out air monitoring through the laboratory of the Board after the mine resumes operations

5 Divisional Forest Officer, Department of Forest, Government of Rajasthan, Bundi - Please ensure the compliance /applicability of the wildlife and forest clearances..

6 Master File .

Group Incharge-Mines

Signature valid

ANNEXURE - II

कार्यालय अति० प्रधान मुख्य वन संरक्षक एवं मुख्य वन्य जीव प्रतिपालक, राजस्थान, जयपुर

क्रमांक : एफ 4(ट) विविध/मुवजीप्र/2016/3457 दिनांक : 10/3/2017

निमित :–

निदेशक (एस),
वन, पर्यावरण एवं जलवायु परिवर्तन मंत्रालय,
इन्दिरा पर्यावरण भवन, वायु विंग, तृतीय तल,
जोरबाग रोड, अलीगंज , नई दिल्ली।

विषय :– Mining of Mineral Sandstone (Minor Mineral) with enhancement of production capacity from 80,000 TPA to 2,50,000 TPA(ROM) by M/s Kanhaiyalal Rameshwar Das, located at village (S)- Dhaneshwar & Sutara of Tehsil and District- Bundi, Rajasthan (MLA: 618.34 ha) – Information/Clarification regarding.

प्रसंग :– आपका पत्र संख्या J-11015/154/2015-IA .II (M)

महोदय,

उपरोक्त विषयान्तर्गत आपके संदर्भित पत्र द्वारा M/s Kanhaiyalal Rameshwar Das की Mining of Mineral Sandstone, located at village (S) – Dhaneshwar & Sutara of Tehsil and District- Bundi की खनन लीज की लोकेशन उप वन संरक्षक, वन्यजीव, मुकन्दरा राष्ट्रीय उद्यान, कोटा से प्रमाणित करवाई गई हैं। उप वन संरक्षक, वन्यजीव, मुकन्दरा राष्ट्रीय उद्यान, कोटा के अनुसार खनन क्षेत्र के संबंध में आवेदक द्वारा प्रस्तुत जी.टी शीट 45 0/12 पर जवाहर सागर अभयारण्य/मुकन्दरा हिल्स टाईगर रिजर्व की सीमा से खनन क्षेत्र को 1 किमी दूर मार्क की गई हैं। जिसके निर्देशांक **A5-** N 25^0 03'45.9" E 75^0 35' 53.7" **N1-** N 25^0 03' 56.5" E 75^0 35'06.1" **O2-** N 25^0 03' 56.5" E 75^0 34' 56.0" **P1 –** N 25^0 03' 54.2" E 75^0 34' 44.6" **Q1 –** 25^0 03' 56.8" E 75^0 34' 33.5" हैं। उप वन संरक्षक, वन्यजीव, मुकन्दरा राष्ट्रीय उद्यान, कोटा द्वारा प्रमाणित नक्शे की प्रति संलग्न हैं।

भवदीय,

(जी.वी.रेड्डी)
अतिरिक्त प्रधान मुख्य वन संरक्षक
एवं मुख्य वन्यजीव प्रतिपालक,
राजस्थान, जयपुर

ANNEXURE - II (B)

कार्यालय उप वन संरक्षक (वन्यजीव) मुकन्दरा राष्ट्रीय उद्यान कोटा

Phone No. 0744- 2330823 E-mail:-dcfmnp.kot.forest@rajasthan.gov.in

क्रमांक :एफ( )सर्व/उवस/मु.रा.उ./2016–17/ 1071 दिनांक : 16/2/17

निमित:–

अतिरिक्त प्रधान मुख्य वन संरक्षक
मुख्य वन्यजीव प्रतिपालक
राजस्थान जयपुर।

विषय:– Mining of Mineral sandstone(Minor Mineral) with enhancement of production cappacity from 80000 TPA to 250000 TPA (ROM) by M/s Kanhaiyalal Rameshwar Das, Located at village (S) –Dhaneswar & Sutara of Teshil and District –Bundi,Rajasthan(MLA:618.34) information/clarification regarding.

प्रसंग:– आपका पत्र क्रमाकं विविध 3305 दिनांक 20.01.2017 के क्रम में।

महोदय

उपरोक्त विषयान्तर्गत प्रासंगिक पत्र के क्रम में निवेदन है कि आप द्वारा भेजे गये संलग्न नक्शे को प्रमाणीकरण हेतु लिखा गया था, नक्शे को जांच करने पर अभ्यारण्य की सीमा से लीज का कुछ हिस्सा 940 मी. पाया गया तत्पश्चात् आवेदक द्वारा दुबारा प्रस्तुत जी.टी शीट 45 O/12 स्केल 1:500 पर जवाहर सागर अभ्यारण्य / मुकन्दरा हिल्स टाईगर रिजर्व की सीमा से खनन क्षेत्र को 1 किमी दूर मार्क कर, जिसके निर्देशांक **A5**- N 25^0 03' 45.9" E 75^0 35' 53.7" **N1**- N 25^0 03' 56.5" E 75^0 35' 06.1" **O2**- N 25^0 03' 56.5" E 75^0 34' 56.0" **P1**- N 25^0 03' 54.2" E 75^0 34' 44.6" **Q1**- N 25^0 03' 56.8" E 75^0 34' 33.5" हैं। जिसकी प्रमाणित जी.टी शीट संलग्न कर आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्न: –जी.टी.शीट।

(एस0 आर0 यादव)
उप वन संरक्षक (वन्यजीव)
मुकन्दरा राष्ट्रीय उद्यान कोटा

171

E:\SERVE LETTERS\SERVE LET.GENERAL2.docx

T. N
T. No

Phone : 250101
Fax : 0744-250171

KANHAIYALAL RAMESHWAR DAS

NE OWNERS : PATTI, FARSHI, POLISHED ACID & ALKALI PROOF SAND STONES

f. No. :

B-72, Vallabh Nagar
KOTA - 324 007 (Raj.)

02-03-17

सेवा में,

श्रीमान् खनिज अभियंता महोदय,
खण्ड प्रथम, बून्दी (राज0)

विषयः खनन पट्टा एम.एल. नं. 47/94 निकट ग्राम धनेश्वर, सूतड़ा आदि जिला बून्दी – क्षेत्र का आंशिक अध्यर्पण बाबत ।

संदर्भः कार्यालय आदेश क्रमांक अ.ख.अ./कोटा–कृत/सीसी/प–133 (80) II/4454–56 दिनांक 30/12/2016.

महोदय जी,

विषयान्तर्गत संदर्भित कार्यालय आदेश की अग्रिम पालना में जिसमें कि खनन पट्टा क्षेत्र (रखे गये) 515.2735 हेक्टेयर को जी.टी. शीट पर मार्क कर जांच की गई, तो लीज का कुछ भाग जवाहर सागर अभ्यारण्य/मुकन्दरा हिल्स टाइगर रिजर्व के प्रोटेक्टेड क्षेत्र (अभ्यारण्य की सीमा में 1 कि.मी. बाहरी क्षेत्र) में आना पाया गया ।

जवाहर सागर अभ्यारण्य व मुकन्दरा राष्ट्रीय उद्यान, कोटा के अधिकारियों द्वारा मौके की जांच करने के पश्चात् जी.टी. शीट पर देखे जाने पर लीज का कुछ भाग अभ्यारण्य की सीमा से 940 मीटर की दूरी पर होना पाया गया ।

पट्टाधारी द्वारा पर्यावरणीय स्वीकृति प्राप्त करने हेतु प्रक्रिया में खनन पट्टा क्षेत्र को अभ्यारण्य की सीमा से 1 कि.मी. दूर दर्शाते हुए, खनन पट्टा क्षेत्र को अपलोड कर एम.ओ.ई.एफ.एण्ड सी.सी., नई दिल्ली में प्रस्तुत करना है । चूंकि पट्टा

contd...2

2483
8/03/17

K.S.T. No. 2033 / 01271
C.S.T. No.

Phone : 250101
Fax : 0744-2501[illegible]

KANHAIYALAL RAMESHWAR DAS

MINE OWNERS : PATTI, FARSHI, POLISHED ACID & ALKALI PROOF SAND STONES

Ref. No. :

74 B-72, Vallabh Nagar
KOTA - 324 007 (Raj.)

–धारी के पक्ष मे उक्त संदर्भित आदेश को रखा गया क्षेत्र (रिटेन्ड एरिया) अभ्यारण्य के प्रोटेक्टेड क्षेत्र में पड़ता है, इसलिये पट्टाधारी उक्त आदेश को संशोधित करवाना चाहता है, इस हेतु लीज क्षेत्र का संशोधित मानचित्र 490.5409 हेक्टेयर का, जो कि अभ्यारण्य की सीमा से 1 कि.मी. बाहर है, मय रखे गये (रिटेन्ड एरिया) व छोड़े गये (सरेन्डर एरिया) की संशोधित सीमांकन रिपोर्ट (डेस्क्रिप्शन रिपोर्ट) इस पत्र के साथ संलग्न कर रहा है व निवेदन करता है, कि प्रस्तुत नक्शे व सीमांकन रिपोर्ट में दर्शाये गये क्षेत्र अनुसार संशोधित आदेश जारी कराने की कृपा करें ।

सधन्यवाद,

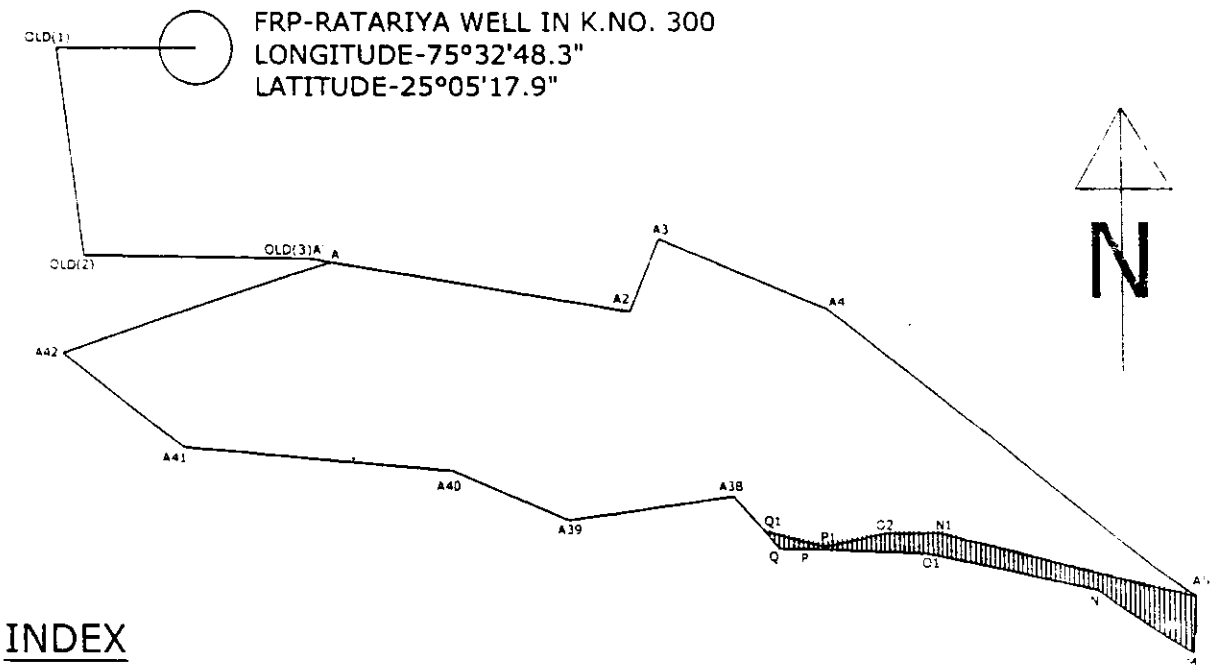
प्रार्थी,

वास्ते कन्हैयालाल रामेश्वरदास,

(S.S. Arora)
Auth. Sig.

PLAN SHOWING RECTIFIED RETAINED AREA OF MINING LEASE ML-47/1994 FOR SAND STONE NEAR VILLAGES DHANESHWAR, SUTRA ETC. TEHSIL TALERA DISTRICT BUNDI SANCTIONED IN FAVOUR OF M/S KANHIYA LAL RAMESHWER DASS, KOTA

SCALE-1CM=400M



INDEX

- RETAINED SANCTIONED AREA = 515.2735 HEC.
- DELETED AREA = 24.7226 HEC.
- RECTIFIED RETAINED AREA = 490.5509 HEC.

कार्यालय खान अभियन्ता
क्रमांक 2483
दिनांक 2/3/2017
प्रथम, बून्दी (राज.)

Sig. Applicant

ANNEXURE - IV

KR

भारतीय गैर न्यायिक

बीस रुपये

Rs.20

रु.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

04AA 936407

POWER OF ATTORNEY

KNOW ALL men by these present that I, Ashok Bansal, Partner S/o Shri Gulab Chand Ji, age 50 years, R/o. Silica House, Kota (Raj.) on behalf of Partner of M/s. Kanhaiya Lal Rameshwar Dass having its office at B-72, Vallabh Nagar, Kota - 324007, do hereby authorize our Mr. S.S. Arora, Manager Adm. to represent us on behalf of the Company at Ministry of Environment & Forests, New Delhi to execute all any of the transactions or any other work related to ML No. 47/94 Sand Stone mine situated near village Dhaneshwar, Tehsil and District Bundi, Rajasthan in an area of 618.34 hectare.

AND I, Ashok Bansal S/o. Shri Gulab Chand Ji, Partner of M/s. Kanhaiya Lal Rameshwar Dass, Kota do hereby certify and confirm that agreed to rectify all or any of these acts and things whatsoever, the said attorney shall fully do or cause to be done by virtue of these presents in withness thereof I have caused by my signature today .....

Ashok Bansal

...2.

दस रुपये

नॉन-ज्यूडीशियल

10 JUN 2013

कोटा

1. THIS POWER of Attorney is revocable at any time at the option of executants.

2. THAT I have not transferred ownership and possession of said property by the Power of Attorney.

3. THAT NO transaction is made between executants and Power of Attorney holder.

4. COMMITMENTS MADE during the meeting will be abide by me.

Power of Attorney Accepted

S.S. Arora

Signature of Executant

21-6-13

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ANNEXURE - V

File No.8-8/98 - FC
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS

PARYAVARAN BHAWAN
C.G.O COMPLEX,LODHI ROAD
NEW DELHI-110001
Dated, 24/2/2000

To,

The Secretary(Forests)
Govt. of Rajasthan,
JAIPUR

Subject: Diversion of 4.86 sq. km. area of forest land in forest block Dasaliya and Ambarani for mining of sandstone in favour of Shri K. Ghatiwala in district Bundi, Rajasthan.

Sir,

I am directed to refer to your letter no.F.1(7) Forest/98 dated 20.1.98 on above mentioned subject seeking prior approval of Central Govt. in accordance with section-2 of the Forest(Conservation) Act, 1980.

After careful consideration of the proposal of State Govt., and in accordance with the recommendation of Forest Advisory Committee constituted under section- 3 of aforesaid Act, Central Govt., hereby, conveys its approval under section-2 of Forest(Conservation) Act, 1980 for diversion of only 104.34 ha. pertaining to Dasaliya block (after excluding the area of Dasaliya block of pit no. C adjoining Ambarani block) as per the detail given below:

(1) Broken up/used up area in Pit no. A & B

Pit no. A -- 38.73 ha.
Pit no. B -- 00.02 ha.
Tar Road-- 01.89 ha.
Office Nursery- 06.23 ha.

Total = 46.87 ha.

(2) Unbroken Area in Pit no A & B = 57.47 ha.

Grand Total= 104.34 ha.

258
29.2.2000

for mining of sand stone in favour of Shri K.L.Ghatiwala in district Bundi, subject to following conditions:

1. The legal status of forest land shall remain unchanged.
2. The forest area being diverted shall be demarcated on ground by RCC pillars at the cost of user agency.
3. Compensatory afforestation will be raised over 57.47 hectare of non-forest land transferred to forest department, at the cost of user agency.
4. Non-Forest land transferred to forest department for raising compensatory afforestation, will be declared as protected/reserved forest under Indian Forest Act, 1927.
5. Penal compensatory afforestation will be raised over twice the area used in violation i.e over 46.87x2=93.74 hectare of degraded forest land at the cost of user agency.
6. The permission will be valid for 20 years w.e.f issue of in-principle approval i.e from 19.5.99.
7. Trees will be felled as and when required for fresh breaking of forest land for carrying out mining operations as per the approved mining plan by the competent authority.
8. Safety zone will be created and maintained and enrichment plantation over one and half times of safety zone area will also be done at the project cost.
9. Mined out forest area will be reclaimed as per the approved plan in consultation with forest department at the cost of user agency.
10. It shall be ensured that no damage and encroachment takes place on adjoining forest areas.
11. Workers engaged in the project will be provided free fuelwood/alternate source of energy at the project cost to avoid pressure on adjoining forest areas.
12. Any other conditions may be imposed by State Govt. or CCF(C), Regional Office, Lucknow from time to time in the interest of conservation and development of flora and fauna in that area.

Yours faithfully,

(V.B. Kumar)
Asstt. Inspector General of Forests

Copy to:
1. The PCCF, Government of Rajasthan, Jaipur.
2. The Nodal Officer, O/o of the PCCF, Rajasthan, Jaipur.
3. The CCF(C), Regional Office, Lucknow.
4. R.O. (HQ), New Delhi.
5. User agency.
6. Guard File.

24/2

(V.B. Kumar)
A.I.G.F.

ANNEXURE - VI

Gmail

Neha Bhargava <neha@enkayenviro.com>

Fwd: Email Alert From System Administrator of Online Submission and Monitoring of Wildlife Clearances Proposal(OSMWCP) portal

1 message

Thu, Mar 23, 2017 at 6:07 PM

Ssg Arora <ssgarora@gmail.com>
To: neha@enkayenviro.com
Cc: kishan@ghatiwala.com

---------- Forwarded message ----------
From: <monitoring-fc@nic.in>
Date: 23 Mar 2017 18:01
Subject: Email Alert From System Administrator of Online Submission and Monitoring of Wildlife Clearances Proposal(OSMWCP) portal
To: <ssgarora@gmail.com>
Cc: <monitoring-fc@nic.in>

This is to acknowledge that a proposal seeking prior approval of Central Government under the Forest (Conservation) Act 1980 as per the details given below has been successfully uploaded on the portal of the Ministry of Environment, Forests and Climate Change Government of India.

1. **Proposal No.** : FP/RJ/MIN/1565/2017
2. **Proposal Name** : SANDSTONE MINE VILLAGE - DHANESHWAR & SUTARA, TEHSIL & DISTRICT - BUNDI (RAJASTHAN)
3. **Category of the Proposal** : Mining
4. **Date of Submission** : 23/03/2017
5. **Name of the Applicant with Contact Details**

Name	: Ashok Bansal
Mobile No.	: 9828105873
State	: Rajasthan
District	: Bundi
Pincode	: 323001

6. **Protected Area (ha.)** : 0

The proposal will be examined by Wild Life Warden, Forest (Conservation) Act. 1980 to assess its completeness.

(System Administrator)

*** This is a system generated email, please do not reply. ***

Wild Life Report

Form for seeking recommendation of Standing Committee of NBWL/SBWL.

PART - I & II

(To be filled up by User Agency)

A. General Details

A-1. Project Details

(i). Forest Clearance Required?: No

(ii). Proposal No. : FP/RJ/MIN/1565/2017

(iii). Name of Project: SANDSTONE MINE VILLAGE – DHANESHWAR & SUTARA, TEHSIL & DISTRICT – BUNDI (RAJASTHAN)

(iv). Short narrative of the Project : The Proposal is of M/s Kanhaiya lal Rameshwaer Das for sandstone Mine with capacity of 2,50,000 TPA in the lease area of 490.5509 Ha. The mine is located at village - Dhaneshwar & Sutara,Tehsil & District -Bundi,Rajasthan.

(v). State : Rajasthan

(vi). Category of the Project : Mining

(vii). Shape of project land : Non Linear

(viii). Distance of the project from the boundary of the Protected Area (in km.): 1

(ix). Estimated cost of the Project(Rupees in lacs) : 800

(x). Total period for which clearance is required (in year): 30

(xi). Total Project Area(in ha.): 490.5509

(xii). Project Area under Protected Area (in ha.): 0

(xiii). Project Area under Non-Protected Area (in ha.): 490.551

A-2. Details of User Agency

(i). Name : KANHAIYA LAL RAMESHWAR DAS

(ii). Address1 : B 72 Ballabh Nagar Kota Rajasthan

(iii). Address2 : NIL

(iv). State : Rajasthan

(v). District : Kota

(vi). Pin : 324007

(vii). Landmark : NIL

(viii). Email address : ssgarora@gmail.com

(ix). Landline Telephone No. : 2501311

(x). Fax No. : 2501711

(xi). Mobile No. : 9828105873

(xii). Website (if any) : NIL

(xiii). Legal status of User Agency : Others

A-3. Details of Person Making Application

(i). First Name: Ashok Bansal

(ii). Middle Name: NIL

(iii). Last Name: Ji

(iv). Gender: Male

(v). Designation: Partner

(vi). Address 1: B 72 Ballabh Nagar Kota Rajasthan

(vii). Address 2: NIL

(viii). State: Rajasthan

(ix). District: Bundi

(x). Pin: 323001

(xi). Landmark: NIL

(xii). Email Address: ssgarora@gmail.com

(xiii). Landline Telephone No.: 2501311

(xiv). Fax No.: 07442501711

(xv). Mobile No.: 9828105873

(xvi). Upload a copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency: Annexure copy of documents in support of the competence

B. Details of Land required for the Project

B-1. Details of Protected Area

B-1.1 No. of Divisions involved in Protected Area

Division wise details of land			
S.no	**Division Name**	**Protected Area Name**	**Project Area under Protected Area**
1.	Mukundra NP	mukundra hills tiger reserve	0

B-1.2 Details of Districts involved

District wise breakup			
S.no	**District Name**	**Project Area under Protected Area(ha.)**	**Project Area under Non-Protected Area(ha.)**
1.	Bundi	0	490.5509

B-1.3 Component wise breakup

Component wise breakup			

S.no	Component	Project Area under Protected Area(ha.)	Project Area under Non-Protected Area(ha.)
1	Sandstone Mine	0	490.5509

C. Maps of protected area

Division 1. : Mukundra NP

(i). Project Area under Protected Area (in ha.) : NIL

(ii). Nature of the Project : Non Linear

(a). No. of patches : NIL

Patch wise details		
Patch No.	Area of Patch(in ha.)	Kml File of Patches

(iv). copy of Survey of India Toposheet indicating boundary of protected area: Annexure Survey of India Toposheet

(v). scanned copy of the Geo-referenced map of the protected area prepared by using DGPS or Total Station: Annexure scanned copy of the Geo-referenced map

D. Justification for locating the Project in protected area and details of alternates examined :

(i). copy of note containing justification for locating the Project in protected area: Annexure Justification

E. Employment likely to be generated

(i). Whether project is likely to generate employment ?: Yes

(a). Permanent/Regular Employment(Number of persons): 300

(b). Temporary Employment(Number of person-days): 300

F. Displacement of People due to the project, if any

(i). Whether project involve displacement?: No

G. Status of Environmental clearance

(i). Whether the Project requires Clearance under the Environment (Protection) Act 1986 ? : Yes

(a). Status of the Environmental Clearance to the Project : EC under process

(ii).Environmental Clearance File No.: J-11015/154/2015-IA.II(M)

H. Whether proposal is for investigation/survey

(H-2). Details of the Bio diversity Impact Assessment report in case the proposal involves use of more than 50 ha. NP/WLS.

(a).Copy of the Bio diversity Impact Assessment report: Annexure Copy of Bio diversity Impact Assessment report

(H-3). Information on the projects undertaken by the proponent agency in the past in Protected Areas

(a).Upload file: Annexure Information on the projects undertaken by the proponent agency in the past in Protected Areas

(H-4). Details regarding compliance of the conditions on each proposal

(a).Upload file: Annexure Details regarding compliance of the conditions on each proposal

(H-5).Whether any matter related to the project is sub judice in any court of law?: No

I. Mining Details

I-1. Details of Mineral Concessions

(i). Whether the Protected Area is aquired under Coal Bearing Areas Act: No

(a). Reference number of Letter of Intent for grant of mining lease.(approval letter of the State Mines and Geology Department): Govt order dated 30.11.1959

(b). Date of issue of the Letter of Intent(LOI) for grant of mining lease : 30 Nov 1959

(c). Copy the Letter of Intent(LOI): Annexure LOI

(d). Total area of the mining lease(in ha.): 490.5509

(e). Area of Protected land located in the mining lease(in ha.): NIL

I-2. Details of Mining Plan

(i). Date of approval of mining plan: 23 Mar 2013

(ii). Approval authority: SME DMG KOTA

(iii). Copy of approval of mining plan: Annexure of approval of mining plan

(iv). Copy of approved mining plan: Annexure of approved mining plan

(v). Nature of mining (underground/opencast): Opencast

(vi). Copy of the detailed land use plan in 1:4,000 scale prepared by using DGPS or Total Station: Annexure of GPS or Total Station

(vii). Copy of map of the outer boundary of mining lease area: Annexure of outer boundary of mining lease

I-3. Details of prospecting undertaken to assess mineral reserves

(i). Whether detailed prospecting to assess mineral reserve in the lease has been undertaken ?: No

I-4. Details of extension (if any) of original prospecting licence issued in the past

(i). Whether extension of original prospecting licence was extended ?: No

I-5. Brief details of prospecting activities undertaken in the mining lease

(i). Detail of prospecting activity under taken in the mining lease: There are 16 no of existing pits in the area these were worked as per the availability of mineral and market demand

I-5.1 Details of bore holes drilled for prospecting :

Bore holes drilled for prospecting				
S.no	No. of Bore holes forest land	Diameters(inch) forest land	No. of Bore holes non-forest land	Diameters(inch) non-forest land
1	0	0	16	32

I-5.2 Estimated Reserve along with accuracy and confidence level

Estimated Reserve along with accuracy and confidence level						
	Estimate Reserve forest	% forest	% forest	Estimate Reserve non-forest	% non-forest	% non-

Mineral	land (million tones)	land accuray	land confidence	land (million tones)	land accuray (+ -)	forest land confidence
Slate Sandstone & Other diamension Stones	0	0	0	17690361.25	80	80

I-6. Details of approval under the Forest(Consevation) Act,1980 obtained for undertaking prospecting activities in the Protected Area located in the mining lease

(i).Whether approval under the Forest(Conservation) Act, 1980 for undertaking prospecting activities in the protected area located in the mining lease have been obtained ? Yes

Details of approval under the Forest(Consevation) Act,1980					
S.no	MoEF File No.	Date of approval	Project Area under Protected Area(in ha.)	From Date	To Date
1	F-8-8/98 FC	24 Feb 2000	104.34	19 May 1999	18 May 2019

I-7. Mineral wise details

(i). No. of minerals: One

Mineral wise details						
Minerals	Estimated Non Protect Area(million tons.)	Estimated Protect Area (million tons.)	Estimated annual extraction extraction(million tons.)	Estimated life time of mine(Yrs.)	Total estimated extraction during mining lease period(million tons.)	Estimated mineral reserve at the end of mining lease(million tons.)
Slate Sandstone & Other diamension Stones	17.33	0	0.25	71	10.7	6.63

I-7.1 Proposed use of the minerals to be raised from the mining lease

(i). Proposed use of the minerals proposed to be raised from the mining lease: Non captive

(ii).Upload a copy note containing details of the plan for the transportation of the minerals proposed to be raised from the mining lease: Annexure transportation of the minerals

Additional information Details

Documents

S.No	Uploaded Additional Info. Files	Remarks
NIL		

Print page

ANNEXURE - VII

Government of India
Central Ground Water Authority (CGWA)
Ministry of Water Resources, River Development and Ganga Rejuvenation

Application for Issue of NOC to Abstract Ground Water (NOCAP)

Welcome : kanhaiya123das
Previous Login Date Time: 30/03/2017 11:04:40 AM , IP Address: 171.78.237.2

Logout

Home | Change Password | Profile

Guidelines
Steps for Filling Online Application

Documents Required for Online Application
- Industrial
- Infrastructure
- Mining

Application Status
- Online

Area Type
Regional office
Location
CGWA Headquarters

Contact

Application No :	21-4/1308/RJ/MIN/2017
Receive Date :	30/03/2017
Name of Mining :	M/S KANHAIYA LAL RAMESHWAR DAS SAND STONE MINING M.L.NO- 47/94
Current Stage :	Application Verification Stage
Current Status :	In Progress
Address :	Central Ground Water Board Western Region 6-Ajhalana Doongri JAIPUR RAJASTHAN

Refer Back 0 - Present

Receive Date	From User Name	To User Name	Forwarded User Name	Action Date	Action Internal Status	Action Comment	Copy of Application Received On
30/03/2017		(Evaluation Officer) Central Ground Water Board Western Region					

Receive Date	From User Name	To User Name	Forwarded User Name	Action Date	Action Internal Status	Action Comment	Ground Water Recom Per Day	Ground Water Recom Annual

No Record for this Stage.

Receive Date	From User Name	To User Name	Forwarded User Name	Action Date	Action Internal Status	Action Comment
No Record for this Stage.						

Receive Date	From User Name	To User Name	Forwarded User Name	Action Date	Action Internal Status	Action Comment
No Record for this Stage.						

Go Back

ANNEXURE - VIII

कार्यालय ग्राम पंचायत धनेश्वर

पं.स. तालेड़ा, जिला बून्दी (राज.)

क्रमांक : 148

दिनांक 30/3/17

श्री कन्हैयालाल रामेश्वर दास
धनेश्वर

विषय:- आप द्वारा चाही गई सूचना का अधिकार अधिनियम 2005 के तहत सूचना उपलब्ध करवाने बाबत।

उपरोक्त विषय में लेख है कि

(1) ग्राम धनेश्वर में स्थित स्कूल मा गरती विद्या निकेतन उच्च प्राथमिक विद्यालय को ग्राम पंचायत में उपलब्ध रिकार्ड के अनुसार किसी प्रकार का कोई आबादी भूमि का पट्टा जारी नहीं किया गया है।

(2) उक्त स्कूल खसरा नं 226 में स्थित है। हल्का पटवारी धनेश्वर की आंशिक नकल जमाबन्दी के अनुसार।

ANNEXURE - IX

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

राजस्थान RAJASTHAN

U 199314

जिला कोष कार्यालय

19 JAN 2012

(राजस्थान)

-::: अनुपूरक संविदा :::-

एम0एल0 47(1994)

यह नॉन ज्यूडीशीयल स्टाम्प कीमतन रूपये 100/– (शब्दे रूपये एक सौ) मात्र के कुल किमत एक अनुपूरक संविदा एम0एल0 47(1994) के साथ संलग्न रहें।

अनुपूरक संविदा वास्ते खननपट्टा खनिज सेण्डस्टोन क्षैत्र 6.1834 व0किमी0 निकट ग्राम धनेश्वर तह0 एवं जिला बून्दी में स्थिरभाटक रूपये 21,48,294/– सालाना पर अवधि दिनांक 14.09.1994 से 13.09.2014 (20 वर्ष) तक, जो कि राजस्थान अप्रधान खनिज रियायत नियमावली 1986 के नियम 16(2) में संशोधन एवं राज्य सरकार द्वारा खनिज नीति में दिनांक 27.01.2011 एवं शासन के पत्र कमांक प. 20(314) खान/ग्रुप–2/2011 जयपुर दिनांक 06.07.2012 के अनुसरण में इस कार्यालय के आदेश कमांक खअ/बून्दी–1/सी.सी.–4/एम0एल0 47(94)/5648 दिनांक 05.03.2013 से उक्त खनन पट्टे की अवधि वृद्धि होकर अवधि दिनांक 14.09.1994 से 13.09.2024 (30 वर्ष) तक (किन्तु भृतभाटक प्रति 5 वर्ष बाद पुनः रीक्षित हो जावेंगा) पर मैसर्स कन्हैया लाल रामेश्वर दास, ऋषभ भवन, न्यू कॉलोनी, गुमानपुरा कोटा (राज0) के पक्ष में धारित है।

पट्टाधारी फर्म ने अन्य शर्ते मूल खननपट्टा संविदा अनुसार तथा राजस्थान अप्रधान खनिज रियायत नियमावली 1986 के नियमो व खनिज नीति 2011 तथा समय–समय पर होने वाले संशोधनो को मानना स्वीकार किया है।

अतः अनुपूरक संविदा का निष्पादन आज दिनांक 05/03/2013 को निम्न गवाहो के समक्ष किया गया।

Ashok Bansal

हस्ताक्षर पट्टाधारी फर्म
(मैसर्स कन्हैया लाल रामेश्वर दास)
जर्ये मु0आ0 एवं भागीदार श्री अशोक बसंल

TESTED
05-3-13
SABZAL HUSSAIN
PUBLIC NOTARY (RAJ)

गवाह :– 1 [illegible]

गवाह :– 2 (S.S. Arora) 7-23 M.N.III, Kota

25
242

खनि अभियन्ता
खनिज प्रकोष्ठ, बून्दी

ANNEXURE - X

100Rs

INDIA NON JUDICIAL

१०० रु.

Rs 100

सत्यमेव जयते

भारत

एक सौ रुपये ONE HUNDRED RUPEES

नवी0 एम0 एल0 47/94

नामान्तरण अनुपूरक संविदा

(राजस्थान)

ये नोन जुडिशियल स्टाम्प कीमतन रू0 100/– अक्षरे रूपया एकसौ मात्र अनुपूरक संविदा एम0 एल0 47/94 के साथ संलग्न रहें।

खनन पट्टा सैण्ड स्टोन क्षैत्र 10 वर्ग कि0 मी0 निकट ग्राम धनेश्वर, सूतड़ा आदि तहसील एवं जिला बून्दी बजमा रू0 7,82,907/– सालाना स्थिर भाटक एवं 5 वर्ग कि0 मी0 क्षेत्र का का कब्जा लेने तक 15 वर्ग कि0 मी0 क्षैत्र का वार्षिक स्थिर भाटक रूपया 11,74,360/– सालाना पर अवधि 14–9–94 से 13–9–2014 तक (बीस वर्ष) के लिए राज्य सरकार के आदेश क्रमांक प–9 (1) खान/ग्रुप–2/95 दिनांक 24 दिसम्बर 1996 द्वारा क्षैत्र 6.40 वर्ग कि0 मी0 श्री कन्हैया लाल घाटी वाला ऋषभ भवन न्यू कोलोनी गुमानपुरा कोटा (राज0) के पक्ष में पंचम नवीनीकरण पर स्वीकृत किया गया । तथा राज्य सरकार के संशोधित आदेश क्रमांक प–9(1) खान/ग्रुप–2/95 दिनांक 7 फरवरी 2002 से क्षेत्र व ग्राम के सम्मूख 6.40 वर्ग कि0 मी0 निकट ग्राम धनेश्वर सूतड़ा आदि के स्थान पर 6.1834 वर्ग कि0मी0 निकट ग्राम धनेश्वर सूतड़ा आदि का संशोधन किया गया ।

चूंकि पट्टाधारी श्री कन्हैया लाल घाटीवाला की मृत्यु दिनांक 5–1–2002 को हो जाने के कारण उक्त नवीनीकृत खनन पट्टे का नामान्तरण निदेशालय के आदेश क्रमांक निदे/प–2(ए–1) बून्दी –1/94/541 दिनांक 27 मई 2002 के द्वारा मैसर्स कन्हैया लाल रामेश्वर दास ऋषभ भवन न्यू कोलोनी गुमानपुरा कोटा (राज0) के नाम पर स्वीकृत किया गया है।

उक्त खनन पट्टे का अनुपूरक संविदा का निष्पादन पट्टाधारी एवं राज्य सरकार के मध्य सम्पादित किया गया जिसे राजस्थान राज्य के महामहिम राज्यपाल की ओर से खनि अभियन्ता खण्ड प्रथम बून्दी द्वारा हस्ताक्षरित किया गया ।

नामान्तरणी पट्टाधारी ने राजस्थान अप्रधान खनिज रियायत नियमावली 1986 के नियमों, संविदा की शर्तों एवं समय–समय पर होने वाले संशोधनों की शर्तों को मानना स्वीकार किया गया है।

अतः पट्टे का पूरक संविदा निष्पादन आज दिनांक 16th July 2002 को निम्न गवाहो के समक्ष किया गया ।

गवाह

1

2

हस्ताक्षर नामान्तरणी

P.A.H

राजस्थान के राज्यपाल की ओर से

खनि अभियन्ता

खण्ड प्रथम, बून्दी

TTESTED

Public

ANNEXURE - 4

ANNEXURE - X

राजस्थान सरकार
Government of Rajasthan
निदेशालय खान एवं भूविज्ञान विभाग
DIRECTORATE OF MINES & GEOLOGY
खनिज भवन, उदयपुर - 313 001 / Khanij Bhawan, Udaipur – 313 001
दूरभाष / Phones: 415091-95, फेक्स /Fax: 0294 - 410 526
(E-mail: dmgraj@sancharnet.in)

क्रमांक:निदे/प.2(ए.1)बूंदी-1/94/ दिनांक: मई, 2002

कार्यालय आदेश

खनन पट्टा वास्ते खनिज सैण्डस्टोन, क्षेत्र 10 वर्ग कि.मी., निकट ग्राम धनेश्वर, तहसील व जिला बून्दी श्री कन्हैया लाल घाटीवाला के पक्ष में धारित है, जिसका पंचम नवीनीकरण शासन के आदेश क्रमांक प.9(1)खान/ग्रुप-2/95 दिनांक 24.12.96 से क्षेत्र 6.4 वर्ग कि.मी. अवधि दिनांक 14.09.94 से 13.09.2014 (20 वर्ष) तक के लिए स्वीकृत किया गया है तथा उक्त स्वीकृति में, शासन के आदेश क्रमांक प.9(1)खान/ग्रुप-2/95 दिनांक 07.02.2002 के द्वारा क्षेत्र 6.4 वर्ग कि.मी. के स्थान पर 6.1834 वर्ग कि.मी. संशोधित किया गया है ।

चूंकि दिनांक 05.01.2002 को पट्टाधारी श्री कन्हैया लाल घाटीवाला का स्वर्गवास हो गया है तथा उक्त पट्टाधारी के प्रतिनिधि द्वारा दिनांक 06.04.2002 को पट्टाधारी की मृत्यु बाबत सूचना प्रस्तुत करते हुए उक्त खनन पट्टे का नामान्तरण, फर्म सर्वश्री कन्हैया लाल रामेश्वर दास, ऋषभ भवन, न्यू कॉलोनी, गुमानपुरा, कोटा (राज.) के नाम पर करने के लिए प्रार्थनापत्र प्रस्तुत किया गया है । पट्टाधारी द्वारा मृत्यु से पूर्व की गई वसीयत (डीड ऑफ विल) के आधार पर उक्त नामान्तरण सर्वश्री कन्हैया लाल रामेश्वर दास, ऋषभ भवन, न्यू कॉलोनी, गुमानपुरा, कोटा(राज.) के पक्ष में चाहा गया है तथा शपथपत्र, वसीयतनामा, फर्म रजिस्ट्रेशन, पार्टनरशिप डीड एवं मृत्यु प्रमाणपत्र आदि प्रस्तुत किये गये है ।

अतः राजस्थान अप्रधान खनिज रियायत नियमावली 1986 के नियम 74(2) के तहत खनन पट्टा वास्ते खनिज सैण्डस्टोन, क्षेत्र 6.1834 वर्ग कि.मी., निकट ग्राम धनेश्वर, तहसील व जिला बून्दी जो कि श्री कन्हैया लाल घाटीवाला के पक्ष में अवधि दिनांक 14.09.94 से 13.09.2014 (20 वर्ष) तक के लिए स्वीकृत है, का नामान्तरण सर्वश्री कन्हैया लाल रामेश्वर दास, ऋषभ भवन, न्यू कॉलोनी, गुमानपुरा, कोटा (राज.) के पक्ष में स्वीकार किया जाता है ।

उक्त खनन पट्टे के संबंध में नियमानुसार समस्त शर्तें एवं प्रतिबन्ध नवीन खनन पट्टाधारी पर भी उसी प्रकार बाध्यकारी होगे जिस प्रकार वे पूर्व पट्टाधारी पर बाध्यकारी थे ।

ह0/-
निदेशक

क्रमांक:निदे/प.2(ए.1)बूंदी-1/94/ 542 दिनांक: 27 मई, 2002

प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. अतिरिक्त निदेशक(खान), जयपुर ।
2. अधीक्षण खनि अभियन्ता, कोटा ।
3. खनि अभियन्ता, खण्ड प्रथम, बून्दी ।
4. सर्वश्री कन्हैया लाल रामेश्वर दास, ऋषभ भवन, न्यू कॉलोनी, गुमानपुरा, कोटा (राज.) द्वारा :- खनि अभियन्ता, खण्ड प्रथम, बून्दी ।
5. रक्षित पत्रावली ।

अधीक्षण खनि अभियन्ता(मु.-1)

ANNEXURE - XI

राजस्थान सरकार

कार्यालय खनि अभियन्ता, खण्ड प्रथम, बून्दी (राज०)

खनिज भवन, सावित्रि बाई फुले कन्या छात्रावास के पास, बीबनवां रोड, बून्दी,
दूरभाष नंबर 0747–2457100 / e-mail mebundi-1@dmg-raj.org

क्रमांक :– 58 दिनांक :– 26.02.2016

// प्रमाण–पत्र //

प्रमाणित किया जाता है कि मेसर्स कन्हैयालाल रामेश्वरदास, आवेदित / धारित खननपट्टा संख्या 47 / 1994 खनिज सेण्डस्टोन क्षेत्र 618.34 हैक्टे0 निकटग्राम धनेश्वर तहसील तालेडा जिला बून्दी, जो कि राजस्व ग्राम सूतडा तहसील तालेडा आराजी संख्या 655, 658, 662, 660, 661, 704, 764, 765, 659, 774, 775, 766, 241, 767, 779, 770, 936, 769, 768, 767 / 1023, 767 / 1024, 935, 938, 937, 937 / 1044, 940, 941, 939, 939 / 1043, 934, 933, 932, 922, राजस्व ग्राम भगवानपुरा तहसील तालेडा आराजी संख्या 70, 72 / 1083, 91 / 994, 71, 73 / 996, 73 / 997, 941, 767, 90, 765, 766, राजस्व ग्राम धनेश्वर तहसील तालेडा आराजी संख्या 72, 72 / 797, 42, 52, 53, 88, 85, 87, 98, 79 / 998, 89, 91, 89 / 98, 255, 256, 257, 258, 254, 355, 259, 97, 96, 95, 94, 92, 93, 98, 99, 100, 99 / 1005, 99 / 1004, 100 / 1001, 100 / 1000, 100 / 1003, 102, 103, 104, 105, 106, 107, 108, 139, 135, 129, 132, 138, 137, 144, 143 / 103, 143 / 109, 208, 109 / 1008, 101, 209, 206, 207, 207 / 1027, 210, 211, 212, 213, 214, 215, 216, 217, 204, 205, 203, 219, 220, 218, 220 / 1024, 220 / 1029, 220 / 1028, 221, 223 / 1053, 223, 281, 282, 223 / 1054, 221, 222, 225, 201, 223 / 1052, 223 / 1051, 218 / 1049, 218 / 1048, 218, 230, 231, 229, 228, 227, 225, 226, 224, 223 / 1055, 223 / 1056, 249, 247, 246, 245, 244, 248, 251, 254, 241, 252, 242, 243, 234, 232, 233, 235, 236, 237, 238, 239, 240, 253, 250 / 1057, 250 / 1059, 250 / 1058; 250 / 1060, 250, 294, 292, 291, 267, 268, 163, 164, 162, 165, 166, 167, 168, 169, 170, 170 / 889, 200 / 1030, 200, 300 / 1031, 199 / 1032, 199, 198, 197, 195, 194, 193, 192, 191, 184 / 1018, 190, 180 / 1026, 180, 181, 183 / 1020, 183 / 1018, 183 / 1021, 183 / 1016, 183 / 1017, 171 / 1036, 171 / 1034, 171, 172, 174, 175, 173 / 1033, 173, 178, 179, 181, 162, 163 / 1035, 163 / 1033, 177 / 1036, 176, 177 / 1037, 156, 158, 159, 157, 807, 808, 160, 161, 160 / 1036, 160 / 1040, 160 / 1039, 160 / 1038, 177 / 1037, 176, 156, 153, 154, 161 / 1042, 161 / 1041, 161 / 1043, 161 / 1044, 161 / 1045, 161 / 1046, 160 / 1048, 161 / 1047, 751, 795, 796, 836, 824, 829, 825, 818, 826, 829, 817, 815, राजस्व ग्राम खेडा तहसील तालेडा आराजी संख्या 2, 208, 209 व निम्न अक्षांश व देशान्तर के अन्तर्गत आता है। उक्त खननपट्टा का क्षेत्र सम्बन्धित जी0टी0 शीट एव मौका निरीक्षण रिपोर्ट, माननीय सर्वोच्च न्यायालय के रिट याचिका 202 / 1995 (गोदावर्मन बनाम यूनियन ऑफ इण्डिया) संदर्भ में पारित आदेश दिनांक 08.04.2005 [कन्टेप्ट पिटिशन(सी) 412 / 2004] के अनुसार अरावली में नही आता है एंव उक्त आदेश की अवहेलना में नही आता है

	अक्षांश (LATITUDE)	देशान्तर (LONGITUDE)
एफ आर पी – श्री राथडिया का कुआँ ख. न. 300	**25°- 5' -13.5"**	**75°- 32' – 55.8"**
A1	25°- 4'- 37.29"	75° -33'-16.73"
A2	25°- 4'- 28.07"	75° -34'-15.73"
A3	25°- 4'- 40.41"	75° -34'-21.55"
A4	25°- 4'- 28.22"	75° -34'-52.7"
A5	25°- 3'- 39.1"	75° -36'-0.5"
A6	25°- 3'- 7.44"	75° -35'-58.83"
B6	25°- 2'- 52.09"	75° -35'-56.98"
F7	25°- 2'- 54.43"	75° -35'-52.29"
F6	25°- 3'- 11.24"	75° -35'-35.23"
F5	25°- 3'- 14.12"	75° -35'-24.41"
F38	25°- 3'- 18.1"	75° -35'-12.86"
F37	25°- 3'- 20.29"	75° -35'-4.6"
B35	25°- 3'- 22.47"	75° -34'-59.42"
A36	25°- 3'- 27.05"	75° -35'-8.22"
A37	25°- 3'- 28.63"	75° -35'-0.23"
A38	25°- 3'- 56.53"	75° -34'-34.76"
A39	25°- 3'- 52.66"	75° -34'-3.6"
A40	25°- 4'- 1.13"	75° -33'-41.95"
A41	25°- 4'- 5.28"	75° -32'-52.12"
A42	25°- 4'- 21.47"	75° -32'-28.73"

नोट :– यह प्रमाण–पत्र खननपट्टे के अरावली हिल्स में नही आने के सन्दर्भ में ही मान्य होगा, अन्य प्रयोजनार्थ मान्य नही होगा।

खनि अभियन्ता,
खण्ड प्रथम, बून्दी

APPROVED MINING PLAN

Government of Rajasthan

Office of The Suptdg. Mining Engineer, Kota Circle, Kota

S.No. SME/Kota/CC/MP/15/ 4256 Dated: 14-10-2015

M/s Kanhaiyalal Rameshwar Das,
R/o B-72, Vallabh Nagar,
Kota (Raj.)

Sub :- Approval of Modification in Mining Plan with progressive Mine closure plan of M.L. No. 47/1994 for an area of 618.34 Hect., mineral Sand Stone near Village Dhaneshwar & Sutara teh. Talera distt. Bundi State Rajasthan submitted as per MMCR' 1986, its chapter IV A and amended Notifications for time to time.

Ref. :- Your RQP/RP letter dated 08.10.2015

Dear Sir ,

In exercise of the power, conferred by Government of Rajasthan SO 378 rule 42 RMMCR 1986 with amended Rules in chapter IV, I here by approve the Modification in above said Mining Plan including Progressive Mine Closure Plan. This approval is subject to the following conditions:-

1- (i)This Mining Plan including Progressive Mine Closure Plan is approved with Modification without prejudice to any other laws applicable to the mine /area from time to time whether made by Central Government, State Government or any other authority.

(ii) It is clarified that the approval of the aforesaid Mining Plan including Progressive Mine Closure Plan does not, in any way, imply the approval of the Government in terms of any other provisions of the Mines and Mine Rules(Regulation and Development) Act, 1957 or rules framed there under and any other laws.

(iii) It is further clarified that the approval of the Mining Plan including Progressive Mine Closure Plan is subjected to the provisions of the Forest(conservation) Act, 1980 and Forest(conservation) Rules, 1981 and any other relevant statutes, orders and guidelines as may be applicable to the lease from time to time.

Conti.....2

(iv)The Mining Plan including Progressive Mine Closure Plan is approved without prejudice to any order or direction from any court of the competent jurisdiction.

(v) If any thing found concealed as required in Mine s Act, the content of the Mining Plan including Progressive Mine Closure Plan and the proposal of the rectification has not been made, the Approval shall be deemed to have been withdrawn with immediate effect.

2- It is requested to provide the approved copies of the Mining Plan including Progressive Mine Closure Plan to the requisite concerning offices.

3- Mining Activities out side lease area, If any shall not be considered as Approved through this Mining Plan including Progressive Mine Closure plan. The Mining Engineer, Bundi-I will check the correctness of the pillars and working out side the lease area, if any, serious action as per laws shall be taken.

4- The lessee would be responsible for wrong data/information provided by him/ her. Any mistake due to oversight shall be rectified as soon as comes in knowledge of the office/deptt.

5- Lessee will also follow the provisions of Environment Management Plan.

6- Two copies of the approved Mining Plan with progressive Mine closure Plan are being sent to your R.Q.P. as advised in consent letter.

Suptdg. Mining Engineer,
Kota Circle , Kota

S.No. SME/Kota/CC/MP/15/

Dated:

Copy forwarded for information to:-

1- Mining Engineer, Mine s & Geology Deptt., Bundi-I .

2- R.Q. P. Sh. Satish Kumar Agrawal, Enkay Enviro Services Pvt. Ltd., 24-B, Dadu Marg, Gopal Bari, Jaipur(Raj.)-302001

Suptdg. Mining Engineer,
Kota Circle , Kota

New MP

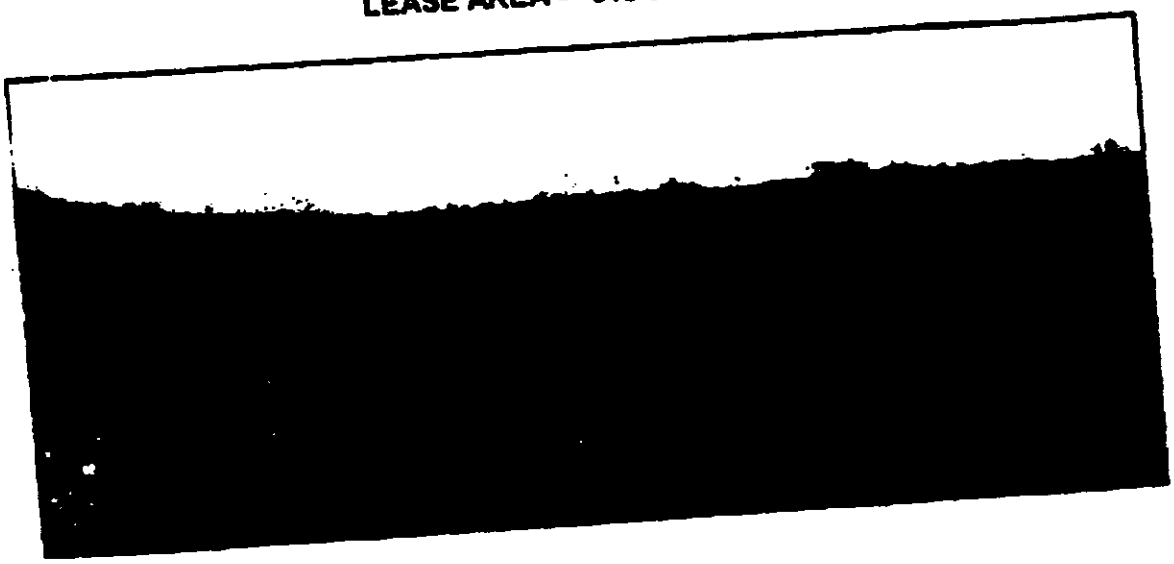
Approved on 14/10/2015

MODIFIED MINING PLAN
WITH
PROGRESSIVE MINE CLOSURE PLAN

(Submitted Under Rule(s) 37F (2) of
Rajasthan Minor Mineral Concession Rules, 1986
(2nd Amendment, 2012)
OF

SANDSTONE (MINOR MINERAL) MINE

(M. L. No. – 47/ 94)
M/s KANHAIYALAL RAMESHWAR DAS
VILLAGE(s) – DHANESHWAR & SUTARA
TEHSIL & DISTRICT – BUNDI (RAJASTHAN)
LEASE AREA – 618.34 Ha.



LESSEE
M/s KANHAIYALAL RAMESHWAR DAS
B-72, VALLABH NAGAR
DISTRICT – KOTA, RAJASTHAN

4256 14/10/15

PREPARED BY

SATISH KUMAR AGRAWAL
REGISTRATION NO. - RQP/AJM/382/2015-AVALID UPTO - 2025

TABLES

PLATES

S. NO	PARTICULARS	PLATE NO.
1	LOCATION PLAN	1
2	TOPOSHEET MAP	2
3	KHASARA MAP	3
4	SURFACE PLAN	4
5	GEOLOGICAL PLAN 5	5 (a)
6	GEOLOGICAL SECTION PLAN 5	5 (b)
7	WORKING PLAN 6	6 (a)
8	WORKING SECTION PLAN 6	6 (b)
9	ENVIRONMENT PLAN	7
10	PROGRESSIVE CLOSURE PLAN	8

Certificate – I

CONSENT LETTER FROM LESSEE

The Modified Mining Plan including Progressive Mine Closure Plan under rule 22 of MCR 1960 and rule 23 B(1) of MCDR 1988 in respect of Sandstone (Minor Mineral) Mine area for 618.0 hectares for mineral Sandstone in village Dhaneshwar & Sutara, tehsil & district – Bundi of Rajasthan state has been prepared and submitted by Shri Satish Kumar Agrawal, registration number is RQP/AJM/362/2015-A.

I request the Superintending Mining Engineer, Bundi to make further correspondence regarding submission/ modification/ re-submission/ withdrawal and to collect the approval copies of the aforesaid plan with the said recognized person on his following address:

Satish Kumar Agrawal
Enkay Enviro Services Pvt. Ltd.
24 B, Dadu Marg
Gopal Bari, Jaipur – 302 001

I hereby undertake that all the modification so made in the aforesaid plan and other said works by the recognised person to be deemed to have been made with my knowledge and consent and as such shall be acceptable to me and binding on me in all respects. I will provide the documents and details as required by approving authority within 15 days otherwise the RQP has rights to withdraw the plan.

M. D. Ghatiwala
Authorized Signatory
M/s Kanhaiyalal Rameshwar Das

Place – Kota
Dated – 08.10.2015

DECLARATION

The Modified Mining Plan including Progressive Mine Closure Plan has been prepared in full consultation with me and I undertake its contents and agree to implement the same in accordance with law. In case of default the approval would be withdrawn.

M. D. Ghatiwala
Authorized Signatory
M/s Kanhaiyalal Rameshwar Das

Place – Kota
Dated – 08.10.2015

Certificate – II

CERTIFICATE FROM THE LESSEE

This certificate is being submitted by Ashok Bansal, Authorized Signatory of "M/s Kanhaiyalal Rameshwar Das", to the effect that said "Progressive Mine Closure Plan" of Sandstone (Minor Mineral) mine comply all statuary rules, regulations, orders made by the Central Government or State Government, statuary organizations, Court etc. have been taken into consideration and whereas any specific permission is required, the lessee will approach the concerned authorities.

M. D. Ghatiwala

M. D. Ghatiwala

Authorized Signatory

M/s Kanhaiyalal Rameshwar Das

CERTIFICATE – III

It is certified that the provision of Mines Act' Rules and Regulation made there under have been observed in the Modified Mining Plan including Progressive Mine Closure Plan for mining of Sandstone (Minor Mineral) mine of M/s Kanhaiyalal Rameshwar Das and whenever specific permission are required the applicant will approach the Director General of Mines Safety. Further standards prescribed by DGMS in respect of Mines health will be strictly implemented.

M. D. Ghatiwala
Authorized Signatory
M/s Kanhaiyalal Rameshwar Das

Place – Kota
Dated – 08.10.2015

CERTIFICATE – IV

It is certified that the provision of MCR – 1960, Mineral Conservation and Development Rule 1988 & RMMCR-1986 have been observed in the Modified Mining Plan including Progressive Mine Closure Plan for mineral Sandstone mine (Minor Mineral) area located near village Dhaneshwar & Sutda, tehsil & district – Bundi of Rajasthan state for an area of 618.0 hectares owned by M/s Kanhaiyalal Rameshwar Das and wherever specific permission are required the lessee will approach the concerned authorities of State Government i.e., Department of Mines and Geology, Government of Rajasthan for granting the permission.

(A) It is certified that the provision of Mines Act' Rule and Regulations made there under have been observed in the aforesaid modified mining plan including progressive mine closure plan and wherever specific permission are required the applicant will approach the Director General of Mines Safety.

(B) It is also certified that the information's furnished in the aforesaid modified mining plan including progressive mine closure plan, as per the copies of the records and documents provided by lessee/ applicant and information given by the applicant, are true and correct to the best of my knowledge. In case of default the approval would be withdrawn.

Satish Kumar Agrawal
RQP/AJM/362/2005-A
Enkay Enviro Services Pvt. Ltd.
24-B, Dadu Marg
Gopal Bari, Jaipur – 302 001

Place – Jaipur
Dated – 08.10.2015
Phone – 0141 - 4026996
Email – satish.ag47@gmail.com

INDEX

ANNEXURES

INTRODUCTION

M/s Kanhaiya Lal Rameshwar Das is a partnership firm, having its office at B72, Vallabh Nagar, Kota and mine office at mine site. It has a mining lease (M. L. No. 47/94) of 618.34 ha for minor mineral Sandstone near village Dhaneshwar & Suida in tahsil &district Bundi, Rajasthan.

The lease was granted in 1952. Originally, this was granted for 10 Sq. km area covering forest area, grazing/ pasture land, agriculture and non agriculture land. Lessee has surrendered part of forest area and other unutilized land and retained mineralized forest area and other area, which was broken and under mining at the time of renewal in 1994. This lease is fifth time renewed vide State Govt. order F-9(1)Mines/ Group-2/ 95 dated 24th December 1996 for area of 6.1834 Sq. km as M. L. No. 47/94 in name of Kanhaiya Lal Ghatiwala. After renewal, lease period validity is from 14.09.1994 to 13.09.2014.The lease period has been extended from 14.09.2014 to 14.09.2024 by the State Govt. vide order no. ME/Bundi-1/C.C.-4/M.L.47(94)/6543 dated 05.03.2013. Retained lease area is 6.1834 Sq. km.

Diversion of 104.34 ha area of forest land pertaining to Dasaliya block (after excluding the area of Dasaliya block of pit no. C adjoining Ambarani block) was obtained from MoE&F vide letter no.8-8/96-FC Dated 24.2.2000 for a period of 20 years w.e.f. issue of in- principle approval i.e. from 19.05.99.

This lease was transferred to Company M/s Kanhaiya Lal Rameshwar Das after expiry of Sh. Kanhaiya Lal Ghatiwala on dated 27.05.2002.

M/s Kanhaiyalal Rameshwar Das is a partnership firm with eight partners, as per deed of partnership. Power of attorney has been given to two of the partners named Mr. Mohan Ghatiwala and Mr. Ashok Bansal.

Consent to operate of above mine was obtained from Rajasthan State Pollution Control Board vide order no 2009-2010/ Mines/ 329 Dated 20/11/09. Current production from mine is about 80,000 TPA (Furshi and Patti) as per Consent to Operate. The project proponent submitted the Mining Plan for the increase in production capacity up to 1,50,000 TPA for mining of Sandstone due to increased market demand in construction and infrastructure sector.

The project proponent envisage further increase in demand of Furshi and Patti in the market, this modified Mining Plan is being submitted for the approval for the increased production capacity 2,50,000 TPA. The lessee has applied for E.C. also. Jawahar Sagar Wildlife Sanctuary exists just adjacent to mine lease in south direction. Hence, 1.0 km area (Protected) is left as safety zone where no mining activity will be taken up and it constitute an area of 149.26 hectare.

1. General information about lessee/ Licencee

a) Name & address of the lessee

M/s Kanhaiyalal Rameshwar Das

B-72, Vallabh Nagar

Kota, Rajasthan - 324007 (Annexure-I)

b) Status of the applicant

M/s Kanhaiyalal Rameswshwar Das is a partnership firm with eight partners, as per deed of partnership (Annexure-II). Power of attorney has been given to two of the partners named Mr. Mohan Ghatiwala and Mr. Ashok Bansal (Annexure-III). The details of the partners are as follows:

Table 1: List of partners

S.No.	Name of Partners	Addresses
1.	Shri Kishanlal Ghatiwala	S/o Shri Kanhaiyalal Ghatiwala, Jaipur
2.	Anil Ghatiwala	S/o Shri Giriraj Ghatiwala, Jaipur
3.	Hari Ballabh Ghanti wala	S/o Shri Kanhaiyalal Ghatiwala, Jaipur
4.	Mohan Ghatiwala	S/o Shri Gopichand Ghatiwala, Jaipur
5.	Navneet Bansal	S/o Shri Chander Bihari Bansal, Jaipur
6.	Ashok Bansal	S/o Shri Gulabchand Bansal, Jaipur
7.	Surajmal Bansal	S/o Shri Rameshwar das, Jaipur
8.	Jaiberdhan Bansal	S/o Shri Chander Bihari Bansal, Jaipur

c) Name & Address of the RQP preparing the mining plan

Satish Kumar Agrawal

(RQP/AJM/362/2015-A valid up to 2025 (Annexure-IV)

C/o Enkay Enviro Services (Pvt.) Ltd.

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2.0 Details of the Mining Lease

a) **ML No.**

ML no. is 47/94 of 618.34 ha. Demarcation report is enclosed as Annexure – V.

b) **Name of Mineral**

Mineral Sandstone (minor mineral) is occurring in the lease area.

c) **Description report of the mining lease/ quarry licence with plan (enclose copy of sanction order/ lease deed/ licence)**

This lease is for Minor Mineral Sandstone near village Dhaneshwar and Sutda in tehsil and district Bundi, Rajasthan. Lease has been renewed for 20 years for the fifth time and the validity of lease is from 14.09.94 to 13.09.2014. Copy of lease renewal has been enclosed as (Annexure- VI). Lease period has been further extended for another 10 years. Copy of the agreement has been enclosed as (Annexure- I). Latitude and longitude of FRP and other demarcation pillars has been indicated on the surface plan on Plate no. IV.

d) **Key plan of the area**

Location plan is enclosed as Plate – I.

e) **Location map of the mining lease showing the details of the approach roads up to the mine**

Mine lease is located near village Dhaneshwar and Sutda in Tehsil & District Bundi, Rajasthan.

Approach road from National Highway to mine office and the project has been shown on the Surface plan. (Plate No. - IV).

Location of lease area is shown on Location plan. The lease area forms a part of G.T. Sheet no 45 O/12. Topographical map is enclosed as Plate – II.

The area is located between following latitude and longitudes:

Latitude:	25° 02' 53.10" N to 25° 04' 40.78" N
Longitude:	75° 32' 29.21" E to 75° 36' 01.12" E

Details of the mining lease

Near village - Dhaneshwar & Sulda

Tehsil - Bundi

District - Bundi

State - Rajasthan

Area - 618.34 hectare

Khasra No. - Khasra Map is attached as Plate - III

Status of land – Lease area comprises of Govt. land, Private Khatedari land, Diversified forest land and Grazing/ Pasture land. Breakup of the land is as follows:

Table 2: Land use break up details

Govt. waste land	Private Khatedari Land	Diversified Forest Land	Grazing Land/ Pasture land	Other Forest Land	Total
289.0 Ha	150 Ha	104.34 Ha	75.0 Ha.	-	618.34Ha.

Superimposed map of sanctioned area on revenue map, duly attested by the concerned Tehsildar/ SDO

Khasra Map is attached as Plate – III.

-Infrastructure facilities:

Nearest railway station	- Kota - 37.0 Km – NE of the lease area
Nearest Town	- Dabi 6.0 Km – NW of the lease area
Police station	- Dabi 6.0 Km – NW of the lease area
Post office	- Dhaneshwar - 1.0 Km – N of the lease area
Medical facilities	- Governmental dispensary is available in all the villages
Education facilities	- Dhaneshwar - 1.0 Km – N of the lease area
Water	- Wells & Hand pumps are the major sources of drinking water. In some villages public water supply is also available
Electricity	- Electric power supply from Dabi substation of State Electricity Board
Mode of transportation of mineral	- Mineral will be loaded into the trucks and transported via NH-76 passing through the lease area.
River/ canal/ port	- None within the lease area

3.1 No. of Existing Mining Pits, their dimension and locations

There are 16 no's of pits existing in the area.These were worked as per the availability of mineral and market demand. However presently the activities are confined in two pits only i.e.Bud wala and Tamatar wala.

Details of pits are as follows:

Table 3: Pit area details

Pit No.	Location	Area (ha.)	Brief Geology
1.	Judokali	0.46	Area is covered with alluvial soil mixed with scree and found as Alluvium. Its thickness varies from 0.5 to 3.0 m. Alluvial soil lies over the weathered sandstone and murram with thickness 1.0 to 3.0 m. This overlies the mineralized zone i.e. Sandstone. It is in two forms, hard compact and splittable sandstone. Total thickness varies from 4.0 m to 30.0 m. Out of this,splittable sand stone thickness varies from 1.0 m on west side to 10.0m on east side towards demarcation pillar number A-5.
2.	Odkuli	5.62	
3.	Sikarwala	1.68	
4.	Tamatarwala	13.15	
5.	Badikhan	48.32	
6.	Jodaji	1.96	
7.	Rupawala	0.88	
8.	Mahuva I	0.61	
9.	Mahuva II	2.58	
10.	Nandawala	2.18	
11.	Badwala	6.24	
12.	Neemwala	13.58	
13.	Ratanwala	9.31	
14.	South of Ratanwala	5.51	
15.	Near D-6 dump	0.865	
16.	Near D-9 dump	1.13	

During the scheme period, mining activity will be confined in Tamatarwala pit on West side and Badwala pit on East side. Both the pits indicated on Surface Map, attached as Plate IV.

3.2 Physiography and Drainage

Overall area is flat and at some places undulated. The general ground level of the study area varies from 480 MRL to 490 MRL. The highest elevation is 490 MRL in western side and the lowest is 480 MRL on the eastern side, in the lease area. The lease area is located near village Dhaneshwar and Sutda at a distance of 1.0 to 1.5 km on North – West side

General drainage of the mine is towards south. Rain water follows the contours of topography. A perennial river Eru, as a surface water source, flows at a distance of 1 km south from the lease area, as shown in the key plan.

Geology of the Area

Regional Geology

Geologically, most of the part of the Bundi district is occupied by rocks of Vindhyan formation which forms the part of Great Vindhyan Basin extending from Rohtash in Bihar to Chittorgarh area in Rajasthan. Rocks of Vindhyan range in the area area are divided into Lower Vindhyan and Upper Vindhyan. Lower Vindhyan comprises of Jahazpur and Upper Vindhyan include Kaimur, Rewa and Bhander groups. Lower Vindhyan i.e. Jahazpur is seperated from Kaimur group by conglomerate horizon which marks the break in sedimentation before deposition of Kaimur i.e. unconformity. Kaimur, Rewa and Bhander Series of upper vindhyan are also seperated from each other by unconformity. Jahazpur group of Lower Vindhyan is generally calcaruous. Kaimur and Rewa is generally arenaceous while Bhander is arenaceous and calcareous in nature.

General statigraphic succession of rock types exposed in Bundi district is as follows:

Table 4: General Statigraphic Succession

Super groups	Groups	Formations
Pacent to sub recent	--	Soil Alluvium
Vindhyan Super Group	Bhander series	Sandstone, Limestone & Shale
	Rewa series	Shale & Sandstone
	Kaimur series	Shale & Sandstone
~~ Unconformity ~~~~~~~~~~		
	Jahazpur	Dolomite, Phyllite & Quartzite
Bhilwara Super Group	Hindoli & Mangalwar Complex	Shale, Slate/ Phyllite, Quartzite, Dolomites and limestone.

Source: Modified and generalized lithographic sequence after G.S.I. (1981).

The rocks of the area belong to the Lower Bhander group. Main rock type is lower Bhander sandstone (Bundi Hill sandstone)

Structure

No fault, fold or any geological disturbance is observed in the lease area. The general strike is in the NW to SE direction and dip is almost flat to gentle inclined, of sandstone beds.

Evidence of life

The limestone of sirbu shale horizon at places show the evidence of algal life in the form of arch shaped structure known as "Stromatolites". Occurrence of sandstone at different stratigraphic horizon indicates the fluctuations of the sea level due to transgression and regression of the sea several times during the Vindhyan period.

3.22 Local Geology

The rocks of the area belong to the Vindhyan group. Main rock type in the lease area is lower Bhander Sandstone (Bundi Hill sandstone). In the area sandstone is overlain alluvial soil, murram and weathered sandstone Lithographic sequence observed in the area is as given below:-

Table 8: Local geology

Alluvium soil	0.5 – 3.0 m
Murram and Weathered Sandstone	1.0 – 3.0 m
Hard and Compact Sandstone	4.0 – 20.0 m
Splittable sandstone	1.0- 10.0m

Specific gravity of sandstone is taken as 2.5 m^3/ ton.

Alluvial Soil: Alluvial soil is mixed with scree and forms alluvium in most part of the land. At some places it is found upto 0.5 m to 3.0 m over mineralized zone.

Weathered sandstone: It is lying over hard and compact sandstone and its thickness ranges from 1.0 to 3.0 m over mineralized zone. It is mixed with murram.

Hard and Compact Sandstone: It is up to 4.0-20m thickness. This is a hard compact and requires blasting for fragmentation. This is considered as overburden.

Splittable sandstone: Thickness varies from 1.0m to10.0m. It can be splitted to the desired thickness. This has commercial application and has demand in the market. It is used as building material and can be used both for interiors as well as exteriors.

Geological map is attached as Plate-V (a).

3.3 Reserve

3.3.1 Method of Estimation of Reserve

Mine is working since 1952. Lease area has 16 no's of pit which have been worked at different stages depending over the market demand. Some of these have reached their ultimate limits. As the area has been fully explored by the pits, no further exploratory drilling is required. Long and wide trenches have been made while mining mineral.

The following parameters have been considered while estimating geological reserves (in situ), the shape, size & thickness of sandstone as delineated on geological cross-sections at various points during mining operations.

Reserves are calculated based on factual position of pits (16 nos) some of which have reached to ultimate pit limit. However, due to variation in depth and availability of mineral as

exposed, the maximum depth on East side towards demarcation pillar no. A-5 has been considered upto 430 MRL called as Ultimate Pit Limit (UPL)

Table 6: Reserve details

Parameter	Values
Bulk density for sandstone	2.5 tonne/m³
Depth for proved reserves	5.5 m to 25 m
Mineable reserves	10.70 M.MT
Life of mine @ 2,50,000 TPA	42.80 years

Block wise details of reserves area as follows:

Table 7: Block wise reserve details

Block	Area (m²)	Thickness (m)		Volume (m³)		Mineral (tons) Sp. Gr. = 2.5 M³/ ton
		Mineral	OB	Mineral	OB	
A	642058	1.5	2.5	963075	1605125	2407687.5
B	343353	2.5	8	858382.5	2746824	2145956.25
C	58020	2.5	8	145050	464160	362625
D	234804	1	8	234804	1878432	586510
E	435118	1	8	435118	3480944	1087795
F	243802	10	20	2438020	4876040	6095050
G	1155250	1.5	1	1732875	1155250	4332187.5
H	113188	1.5	3	169782	339564	424455
I	99238	1	8	99238	793904	248095
Total Geological Reserves	3324631	-	-	7076144.5	17338463	17690361.25

Based on the factual observations/ measurements, volume of reserves including the overburden likely to be removed has been estimated. Various pits have indicated different thickness of mineral as well as the overburden. 16 pits have been made in various locations in the lease area for production. Some of these have reached to their ultimate limits. Such pits have not been included in the reserve estimation. Area of separate blocks excluding the worked out pits are only counted for reserve purposes. Due to the variation in thickness of mineral in different pits, the same has been taken included based on sphere of influence method.

Estimated Reserves

Table 8: Estimated reserves

Reserves		Tonnes
Geological reserves	:	176,90,361.25
Blocked Reserves (211)		Tonnes
45 m Highway	:	2,48,095
1 km sanctuary	:	43,32,187.5
Plantation	:	24,07,687.5
Total	:	69,87,970.0
Mineable Reserves (111)		Tonnes
Proved reserves	:	107,02,391.25

3.3.2 Categorization of reserves

Reserves are categorized as follows:

Proved: As already indicated in the details provided above, depth has been taken base on the thickness of mineral exposed in pits reached up to ultimate levels.

As the mine is working since last 60 years no further exploratory work is envisaged.

All reserves have been estimated in proved category.

As per UNFC classification Proved reserves are coded as (111).

Mineral is already being mined as per market demand, feasibility and economical viability.

Estimation of reserves has been done by the following method:

Volume = influential strike length x influential width x proved depth

Weight (tonnage) = volume x sp.gr. (sp.gr. of sandstone is considered as 2.5 ton /cu.m.)

Details have already been given above in table no. 7.

Geological reserves and grade:

Based on mining and studies carried out so far in the lease area, total geological reserves are 17.61 MMT for sandstone.

Mineable reserves:

Net mineable reserves are 107,02,391.25 tonnes.

Grade: Sandstone is exploited as patties and furshies in desired sizes, which are very much demand in market.

Details of Production & Dispatches of Last Five Years

Production figures are given below:

Table 9: Past year's production details

S. No.	Year	Production(TPA)
1	2011-2012	66,796
2	2012-2013	68,569
3	2013-2014	79,364
4	2014-2015 Upto Feb.	62,667

Physical and Geological Characteristics of the Deposit

Sandstone in the area is free from any geological disturbance as there are no fault, fold etc observed within the area. General strike is in NW to SE with almost flat to gentle dip.

Mineralogy:

The sandstone mainly constitute by grain size up to 2 mm which are cemented by variety of material like silica, iron, lime and various argillaceous matter.

Sandstone occurs as vast horizontal to gently dipping sedimentary deposits. Sandstone of the area is classified into two categories:

1. **Massive Sandstone:** In this type of sandstone spacing between the two bedding planes is not regular and may vary from very few cm to even more than 3.0 to 4.0 m. It has irregular cleavages and cannot be extracted as dimensional stone/ in layers of uniform thickness. This has to be fragmented by blasting for removal and is considered as overburden. In mining areas, the upper non splittable (massive) horizon is locally known as 'tol' or 'tola'. Thickness of this horizon varies from 4.0m to 20.0m.
2. **Splittable Sandstone:** As the name indicates the rock splits along the natural bedding plane or can be cleaved along the cleavage plane with ease to split into slabs of tiles. These beds can be split about 5 to 12 cm apart with plane & smooth surface. Thickness of this horizon varies from 1.0m to10.0m.
3. The splittability of the stone is decided by the presence of the weaker zones. One block may have 5 to 7 such zones. The spacing between such zones decides thickness of the individual slabs. The uneven bedding plane has also been encountered at number of places. Vertical joint are the other places of weakness, which are traversing throughout the field. The distance between such joints varies from 0.6 m to 6.0 m. these vertical joints are perpendicular to the bedding plane & helps in the mining of dimensional stones. Minute depressions are also encountered at places.

6.0 Details of Mining Machinery Deployed or to be Deployed and the detail specifications

The following machinery will be deployed in the mine:

Table 10: List of machinery

S. No.	Name of machinery	Make	Nos.
1.	Compressor	Atlas	4
2.	Chain pulley	-	1
3.	Crane (Coles)	-	1
4.	Diesel Power screw compressor	-	1
5.	Drifter	-	1
6.	Drill Machine	-	1
7.	Dumper	-	17
8.	Hydaulic crane	Escort	8
9.	Jack Hammer Machine	-	4
10.	JCB	-	1
11.	Rock drill machine	-	1
12.	Excavator	Tata Hitachi Ex-110	1
13.	Excavator	Tata Hitachi Ex-200	3
14.	Tractor crane	-	1
15.	Tractor	-	5
16.	Water compressor	-	1
17.	Water Pump	-	3
18.	Water Tanker	-	3
19.	Wagon drilling machine	-	4

Other auxiliary equipments required are:

1. Water sprinkler
2. Diesel tanker
3. Tractor trolleys
4. Explosive van

7.0 Method of Mining

The mine is fully equipped with modern machineries and equipments for mining and overburden handling. mining operations are being carried out by opencast semi-mechanized method. Topsoil of 0.5 – 3.0 m is scraped through excavator and stacked at designated sites. Below the cover of top soil there are layers of murram and hard rock of weathered sandstone having thickness of 1.0 m to 3.0 m. below this lies massive sandstone varying in thickness from 4.0m to 20.0 m which is removed by blasting. Overburden is handled by

excavator - dumper combination. The productive, around 1.0 to 10.0m, zone is exposed by excavating overburden. Mining of sandstone starts with separating the layer from natural bondage by chisel and hammering along cleavage plane / weaker zone. The stone layer breaks non-dimensionally depending upon free face available. It is then sized to possible dimension by chisel and hammer. Line drilling of hole is also used to split massive sandstone blocks. Finally, it is splitted along the natural split planes to yield single solid slab of desired thickness ready to use.

Mineral will be transported to the processing plant. It will be cut into sizes as per market demand and packed. This is then transported outside by the end user's.

7.1 Proposed year wise development for two years

During the plan period two pits one on western side Tamatarwala and other on eastern side that is Badwala, which are presently already active, will be worked. Production from Tamatarwala pit will be low comparative to Badwala pit as the OB ratio is very high. Balance in production as per the market demand will be made from the pits.

Tamatarwala Pit: Location of this pit has been indicated on the surface plan. The pit is already in operation. However, the mineral thickness is only around 1.0 m with an average of 8.0 m waste/ OB. OB is regularly blasted and removed by loading equipments and tippers. Mineral is at a shallow depth. OB bench height is kept 3.0 m and width 6.0 m. In mineral, only one bench of 1.0 m height and 9.0 m width is being worked. This pit will advance towards north, east and west side. Pit limit will be up to around 9 to 10 m depth. Surface RL is 491 MSL. The OB material will be transported and dumped in south side of the road in the excavated zone of pit no 4. Production details are given in table below.

Table 11: Production from Tamatarwala pit

Year	Production (Tons)	Production (M^3)	OB/Waste(M^3)	OB: Mineral Ratio
IVth	15,000	6,000	48,000	3.2:1
Vth	25,000	10,000	80,000	
Total	40,000	16,000	1,28,000	

Total reserves in this block area 5,86,510 tonnes. In the plan period total extraction will be 59000 tonnes. Balance reserves at the end of the plan period will be 5,27,510 tonnes. With 40,000 TPA life of the pit will be 11.72 years. Hence total life is 11.72 + 5 = 16.72 years.

Badwala Pit:

Year wise development of the Badwala pit along with the position of benches in next years (plan period) is indicated in the composite development plan.

There will be three benches each of 6.0 m height along with one sub-bench of [illegible] in soil and overburden. Width of benches will be around 10.0m. Excavators will be use[illegible] removal of waste and loading in to tippers. This will then be transported to the dump sites/backfilling area on the west side near demarcation pillar A-38 and A-39 in pit no. [illegible] Benches will be advance towards the east side during the plan period. There will be th[illegible] benches each of 3.0.m height in mineral (splittable sandstone). Width of benches wi[illegible] around 15.0m.

Ultimate pit limit will be around 430.0 MSL.

Table 12: Production from Badwala pit

Year	Production (Tons)	Production (M^3)	OB/ Waste (M^3)	OB : Mineral ratio (M^3 : Ton)
I	1,35,000	54,120	1,00,800	0.8:1
II	2,25,000	90,200	1,84,000	
Total	3,60,000	1,44,320	2,84,800	

Total reserves in Badwala pit are 60,95,050 tonnes. During the plan period the extraction will be 5,32,000 tonnes. Balance reserves will be 5583050 tonnes. With rate of extraction of 2,05,000 TPA, life will be 27.13 years. Inclusive of plan period, pit will have a life of 32.[illegible] years.

<u>Note: Jawahar Sagar Wildlife Sanctuary exists just adjacent to mine lease in south [illegible] Hence, 1.0 km area (Protected) is left as safety zone where no mining activity will be [illegible] up and it constitute an area of 149.26 hectare.</u>

7.2 Composite Production during the Plan Period

Year wise proposed production during the plan period will be as follows:

Table 13: Proposed rate of production

Year	Production (tons)	Production (m^3)	O.B/Waste (m^3)	OB : Mineral ratio (M^3:Ton)
IVth	1,50,000	60,120	1,48,800	1.03:1
V[th]	2,50,000	1,00,200	2,84,000	
Total	4,00,000	1,60,320	4,12,800	

As stated earlier Tamatarwala pit and Badwala pit will last for more than 40 years with the production level of 2, 50,000 TPA.

Therefore both the pits will run for the lease period.

7.3 Mineable reserves and anticipated life of the mine

- Total mineable reserves in the lease area are = 10.70 MMT.

Annual production = 2, 50,000 tons

Life of the mine = 42.80 Years.

7.4 Proposed method of mining

Mining activity will be carried out by open cast semi-mechanized method. Mechanized equipments will be used for removal and handling of waste /overburden. Drills will be used for making holes which will be blasted by explosive. This is to fragment the rock for ease of handling.

For extracting the mineral no blasting will be carried out. Hydraulic splitter which works on the principle of wedge effect is more or less is the mechanization of feather and wedge technique. The hydraulic splitter provides the required direction of crack by positioning the handle of the splitter perpendicular to the direction of the crack. It is a noiseless, eco-friendly and dust free technique. Mineral is then loaded in to trucks with help of hydraulic cranes and shifted to stack yard.

Proper benching will be maintained. Design parameters of benches have already been indicated earlier.

7.5 Conceptual Mining Plan

At conceptual stage, five pits will remain joined to the adjoining pits as per the availability of mineral. Configuration will be as follows:

Pit-1 will consist of Judaikali, Odkuli, Sikarwala, Tamatarwala

Pit-2 will consist of Badi Khan

Pit-3 will consist of Mahuva-I, Mahuva-II, Rupawala and Jodaji

Pit-4 will consist of Nandawala, Badwala, Neamwala, Ratanwala

Pit-5 will be a new pit to be excavated in SE direction of lease area.

In the plan period workings will be confined in the Tamatarwala and Badwala pits only .All O.B./Waste material from these pit will be utilized for backfilling in the already exhausted pits on the west side in pit no. 4 and pit no. 5. This has been indicated on the composite working plan.

(I) Final Slope Angle To Be Adopted

The face angle of the bench will be 80° and final pit slope angle will be 45°.

3,20,25,000 Tonne

(ii) During the mine plan period workings will be carried out in Tamatarwala and Badwala pits. These pits are already active at present.

(iii) Ultimate Capacity Of Dumps

Total quantity of overburden and waste to be removed from the pits during the plan period will be 6.14 lac m³. This quantity of overburden will be backfilled in pit no. 4 on south side of road and between pillar boundary of A-39 & A-40 during the plan period. Area occupied by backfilling would be 9.023 ha with 10.0 m depth of backfilling. Swelling factor has been considered as 1.3. Volume to be accommodated will be 7.99 lac m³. Quantity of overburden to be removed from the 6th year to the life of the mine will be 13.17 million m³, which will be backfilled over and area of 80.577 ha upto 17.0 m height. Backfilling has already started in pit no. 5. This has already been backfilled in an area of 5.34 ha. Total backfilled area up to the plan period will be 9.024 + 5.34 = 14.363 ha.

a) Land Use Pattern of mining lease area at various stages:-

Table 14: Land use pattern

Sr. No.	Particular	Present Land Use (Ha)	Use After 6th year (Ha)	Use by the end of Life of mine (Ha)	Use at Conceptual Stage
1.	Pit	114.05	116.45	249.78	Rehabilitated & reclaimed by back filling (94.94 Ha) Plantation & water reservoir (154.84 Ha)
2.	Dump Area	46.92	46.92	46.92	Rehabilitated & reclaimed by plantation
3.	Road	17.04	18.0	16.50	Public use
4.	Infrastructure	7.80	8.0	8.50	Public use
5.	Mineral Storage	3.28	4.50	7.50	Plantation
6.	Plantation	40.75	55.0	70.0	Plantation or undisturbed land, office, nursery, etc
7.	Un worked area	388.70	389.47	219.14	-
	TOTAL	618.34	618.34	618.34	-

Note: Jawahar Sagar Wildlife Sanctuary exists just adjacent to mine lease in south direction. Hence, 1.0 km area (Protected) is left as safety zone where no mining activity will be taken up and it constitute an area of 149.26 hectare.

7.6 Blasting

Blasting will be carried out in overburden only. These faces will be kept in advance so that there is no mixing with mineral at the time of blasting.

Broad blasting parameters:

Blasting is carried out in upper strata which, consists of hard sandstone rock. 6.0m benches will be formed which will be extracted in two slices of 3.0 m each. In one round 3 rows, each row containing 20 holes, will be blasted. Each row will be provided with seperate delay so that the first row will be blasted first to provide free face for the second row holes, which will explode next and the third in the last sequence. This sequencing will result in the better blasting efficiency and restricted/controlled throw. Detonating fuse and delay detonators will be used for sequential blasting .One blast will cater to two to three days requirement.

Blasting/ Drilling parameters will be as follows:

Table 15: Blasting and drilling details

Burden	1.8 m
Spacing	4.0 m
Depth of hole	6.0 m
Diameter of hole	100 mm
O.B. per day	417.48 m^3
Yield per hole	43.20 m^3
No. of holes required per day	10 No's

Type of explosive

Only class 2 & 6 explosive will be used for priming, column charge, detonator and fuse etc. Two types of explosives are used as mentioned below.

1. Column charge – ANFO (80%)
2. Booster charge – Slurry explosive (20%)

The main charge will consist of ANFO mixture containing prilled ammonium nitrate mixed with 5 % diesel oil. Slurry explosive cartridges will be used as booster. In opencast pit the powder factor in overburden is around 10 tonne per kg of explosive and in murram it will be around 5-6 tonnes. The overall average will be around 8.0 tonnes per kg of explosive. Two licensed magazines, each of 2,000 kg and 500 kg capacity already exist at site.

Table 18: Explosive details

S. No.	Particulars	Details
1	Amount of charge per hole	13.50 kg
	Booster-slurry explosive (20%)	2.50. kg
	Column charge- ANFO (80%)	11.0. kg
2	Yield per hole	B*S*D*S.G =108.0 tonne
3	Expected powder factor	Yield per hole/ charge per hole = 8.0 tonne

Secondary blasting:

Since the rock type found in the area is sandstone and in the form of sedimentary formati so big boulders requiring secondary blasting are not produced. Upper layers of weathered stone and murram are blasted very carefully so that lower surface of sandstone is not disturbed. Mineral bearing strata do not require blasting. Line drilling and manual hammering, feathers and chisel are used for production of slabs and tiles.

Storage of explosives:

Explosive will be used for blasting. For production capacity of 1050 tonne per day presuming powder factor of 8.0 kg daily requirement of explosive will be 132.0 kg. Explosive requirement will be fulfilled by an authorized dealer/ manufacturer. Two licensed magazines each of 2,000 kg and 500 kg capacity exist at site.

7.7 Mine Drainage

General drainage of mine is towards south. Rain water follows the contours of the surface topography. Water source of surface water is perennial river Eru at a distance of 1 km in south from nearest lease area as shown in the key plan.

Ground water table based on observation from nearby wells & water bodies is 405 MSL.

During the plan period, working is expected to be at 430 MSL (ultimate level), 25 m above the water table.

Water table is not likely to be encountered, so the pumping arrangement is not required. However, during the rainy season, water will get accumulated in the pit which will be pumped out and discharged in the settling tank/ponds. This water will be utilized for plantation and dust suppression.

8.0 **Year wise annual programme of mining for next 2 years**

The mine is targeted to produce 2,50,000 ton per year of sandstone. In two years, reserves of sandstone will be depleted by around 4,00,000 Tonnes Two years production programme is given below :-

Table 17: Year-wise production programme

Year	Production (tons)	Production (m^3)	O.B/Waste (m^3)
I.	1,50,000	60,120	1,48,800
II.	2,50,000	1,00,200	2,64,000
Total	4,00,000	1,60,320	4,12,800

9.0 **Details of Employment**

Total employment will be about 290 workmen and 10 supervisory staff. The details of the manpower to be deployed in the mine are given below:

Table 18: Employment details

Employed person	No.
Mining manager	1
Mines foreman	2
Mines mate	2
Supervisor	2
Semi skilled worker	150
Unskilled worker	140
Watchman	3
Total	300

10.0 **Measures taken and to be taken for Land Restoration, Reclamation and Plantation In/ or nearby Lease Area**

For restoration of land, backfilling of worked out pits is proposed. During first five years of plan period waste material, which is weathered and fractured sandstone will be transported to the earmarked area. Backfilling of the waste is presently going on in pit no. 5 and continued in future. Wastes generated from Tamatarwala pit will be backfilled in the exhausted pit no. 4.

At the conceptual phase, out of the total excavated pit area 249.78 ha, 154.84 ha will be converted into water reservoir and remaining area 94.94 ha will be backfilled & reclaimed by plantation during the life of mine.

Whenever top soil is encountered in the mine, it will be selectively removed and stacked separately. It will then be spread over the dumps & backfilled area for afforestation. Plantation will be undertaken in the leasehold area on waste dumps and vacant land. The degraded land due to various mining operations within the lease area requires restoration or reclamation by taking up suitable management methods. The following measures are suggested for bringing back the lease area to near original or better land use:

1. Green Belt
2. Reclamation of mined out areas and dumps
3. Engineering construction measures

1. Green Belt - Planting a suitable combination of trees that can grow fast & also have good leaf cover shall be adopted to develop the green belt. Already plantation has been carried out in 40.75 ha of undisturbed land, nursery and office etc. It is proposed to further plant 14.25 ha of area during the plan period. 100 plants are proposed to be planted in a year. All native species grown in the area will be planted to have better survival as per climatic conditions. Details of plantation during scheme period are given below:

Table 19: Plantation details

Year	Area (Ha.)	Plants
I	2.85	100
II	2.85	100
Total	5.70	200

2. Areas to be dumped – During initial stages of mining, some quantity of waste consisting of hard weathered and fractured sandstone is dumped in the pre-determined dumping yard.
3. Reclamation of mined out areas - The mineral containing areas will be mined out upto ultimate depth by maintaining proper bench height & width. These areas will be backfilled with the waste material and later on planted. The dumps shall be afforested with local grass & plant species. All along the edge of the pit fencing will be made and afforested with good fruit bearing species.
4. Engineering construction measures – The aim of this construction is to prevent silt from flowing down the dump slope carrying the solid particles along with the rain water & deposit in the nearby water tanks. It will also prevent the deposition/ contamination in

adjacent area.

The following are the engineering measures:

a) Rainwater harvesting

b) Retention wall

c) Gully plugs / Gabion structures

a) Rainwater harvesting – Mining pits will serve as a natural rain water harvesting structure. At the end of mine, part of pit will be converted into water reservoir so that rain water collected in the pit will seep into ground and will serve for recharging ground water.

b) Retention wall – The purpose of retention wall is to arrest the flow of any silt from the dump slopes. These are required to be constructed adjacent to the waste dump / mineral dumps to arrest the wash offs/ O.B. material from spreading and contaminating the ground. Boulder retaining wall 2.0 m/ 1.5m size will be made around the dumps.

c) Gully plugs / Gabion structure – Sufficient number of gully plugs shall be constructed to arrest any further erosion of dumped material. Use of locally available dry boulders shall be made. Whenever the gullies are wide, gabion structure using wire mesh will be constructed.

11.0 Measures taken and to be taken for Protection of Environment in and around Mining Lease Area

Pits will be backfilled .Dumps will be reclaimed by spreading top soil and planting local species. Backfilled, reclaimed pits will also be covered with top soil and planted. These plants will grow up and provide healthy environment. It will also improve ecology and aesthetic beauty of the surrounding area. Green belt in the lease area will help in suppression of dust and will also reduce the noise levels. The pits which are not backfilled, will be used as water reservoir for cattle feeding and irrigation purpose.

Note: Jawahar Sagar Wildlife Sanctuary exists just adjacent to mine lease in south direction. Hence, 1.0 km area (Protected) is left as safety zone where no mining activity will be taken up and it constitute an area of 149.28 hectare.

12.0 Measures taken and to be taken for dumping overburden, stacking of top soil and utilization of top soil

Presently waste is being dumped in south side of road near Pit no 4 and south-west part near demarcation pillar no A39 and A40 of the lease area. Some waste is stacked at waste various dump sites during initial stages. Saturated waste dump has been thickly planted. Waste dump are proposed up to the height of 17m in three terraces of 5 m of height each

and slope within 28°. Some waste as murram is used for construction and maintenance of approach roads upto nearest tar road. Local habitants will also use the waste for construction around their agriculture field and other purposes. Stabilization is proposed by retaining walls of rubble stone towards lower altitude side of the dump. Bushes & trees will stablize dumps.

Waste is also used as grit after crushing in crushing plants and construction companies for construction purposes.

In future same planning is proposed to reduce the dumping and remaining waste will be used in backfilling. Reclamation of the backfilled area by providing topsoil cover and planting with local species will be regularly carried out.

At the conceptual stage, left out pits will be used as water reservoir to recharge ground water table & use in plantation and irrigation.

13.0 Measures taken and to be taken for the control of water, noise and air Pollution.

A) Air Pollution

Emission of gases and dust generation takes place due to the movement of vehicles. Spraying of water and plantation along road side prevents the spread of dust .Plantation also acts as the barrier for restricting noise pollution.

Fumes from blasting will be produced but will be reduced by controlled blasting, optimum charge and delay detonation.

Impact on air environment has been assessed taking into consideration the proposed production and increased emissions. The sources of air pollution are given below:

i. operation of mining machineries / loading
ii. drilling & blasting
iii. transportation of minerals
iv. wind erosion from barren area & waste lump

Air pollutant released during production can be checked by:

- Dust suppression system / water spraying would be adopted at mine working & loading points,
- Use of sharp drill sets for drilling holes,
- Use of delay detonators, shock tube initiation system for blasting so as to reduce vibrations & dust,
- Avoid blasting during night, strong wind & temperature inversion condition,

- Afforestation will be carried out for control of dust,
- Plantation of wide canopy trees, creepers and grass along approach road, and on safety barrier zones will help suppress dust.
- Persons to be provided with face mask and other personal protective equipments.

Transportation

- Regular water spraying on haulage roads during mineral transportation by water sprinklers,
- Dumping of OB waste from optimum height, so as to reduce the dust generation.
- Avoid over filling of tippers & consequent spillage on the roads,
- Mineral carrying trucks will be effectively covered by tarpaulin to avoid escape of fines to atmosphere,
- Air quality shall be regularly monitored both in the core zone and the buffer zone.

Controlling of NOx level

The source of NOx is due to vehicular emission. This can be controlled by proper maintenance and servicing of vehicles.

B) Noise Pollution

The noise levels are directly dependent upon the deployment of mining machinery and heavy duty vehicles in the area. Noise is produced due to movement of vehicles, operation of drilling, blasting etc, but pronounced noise is felt near the working area. The main sources of noise in the mine are classified as:

i. Stationary mining equipment,
ii. Mobile mining equipment,
iii. Transportation.

To protect workers from higher noise level, lessee will adopt the following noise abatement measures:

i. Proper & timely maintenance of machinery. Provision of ear muffs / ear plugs to workers in noise prone zone in the mine.
ii. During operation the major noise generating sources from the mine operations are excavators with a noise level of 101-103 dB.
iii. However, with better and regular maintenance of equipments it will be kept within 85 dB as per the norms.
iv. Predictions will be carried out to compute the noise level at various distances

around the mining pit due to these major noise generating sources.

14.0 Social development of the area

The mining activities have positive impact on social development of the nearby residents

- Road and transportation facility have improved,
- Employment to local people has generated which will further increase due to expansion in production capacity .By virtue of this; literacy rate & living standard will go up,
- It has created positive impact on living standard of nearby people and their social status.
- Project has beneficial impact at the local level due to increase in transport and communication facilities, community welfare measures and improved trade activities.
- Worked out pits will be backfilled and reclaimed with the plantation. These plants will grow up and improve environment .This will improve the natural beauty of the area and surroundings.

15.0 Details of health checkup and insurance of all the employed persons (for existing lease)

All employees are being medically checked up at mine site periodically. Measures as per Mines Rules 1955 are being taken. Insurance of all employees as per rules is under consideration.

4257 14/10/15

PROGRESSIVE MINE CLOSURE PLAN

INTRODUCTION

a. Name of Lessee : M/s Kanhaiya Lal Rameshwar Das

b. Location : Near village Dhaneshwar, Tehsil & Distt. Bundi, Rajasthan

c. Extent Of Lease Area : 618.34 Ha

d. Status of land : Lease area comprises of Govt. land, Private Khatederi land, Diversified forest land and Grazing/Pasture land. Breakup of the land is as follows:

e land	Private Khatederi Land	Diversified Forest Land	Grazing Land/ Pasture land	Other Forest Land	Total
.0 Ha	150 Ha	104.34 Ha	75.0 Ha.	-	618.34Ha.

e. Land Use Pattern of mining lease area at various stages:-

	Particular	Present Land Use (Ha)	Use After Plan period year (Ha)	Use by the end of Life of mine (Ha)	Use at conceptual stage
	Pit	114.05	116.45	249.78	Rehabilitated & reclaimed by back filling (94.94 Ha) Plantation & water reservoir (154.84 Ha)
	Dump Area	46.92	46.92	46.92	Rehabilitated and reclaimed by plantation
	Road	17.04	18.0	16.50	Public use
	Infrastructure	7.60	8.0	8.50	Public use
	Mineral Storage	3.28	4.50	7.50	Plantation
	Plantation	40.75	55.0	70.0	Plantation on undisturbed land, office, nursery, etc
7.	Un worked area	388.70	369.47	219.14	-
	TOTAL	618.34	618.34	618.34	-

Note: Jawahar Sagar Wildlife Sanctuary exists just adjacent to mine lease in south direction. Hence, 1.0 km area (Protected) is left as safety zone where no mining activity will be taken up and it constitute an area of 149.26 hectare.

f) Method of Mining - Mining operations are being carried out by open cast semi mechanized method

g) Mineral Processing Operation – Mineral will be transported to the processing plant. It will be cut into sizes as per market demand and packed. This is then transported outside by the end user's.

1.1 Reason for Closure – Mine has ample reserves to last for a period of 42.80 years, is not under closure.

1.2 Statutory Obligations - It is statuary obligations although mine is for 42.80years.

1.3 Closure Plan Preparation –

Name & Address of Lessee - M/s Kanhaiya Lal Rameshwar Das, B-72 Ballabh Nagar, Kota, Rajasthan

RQP — Shri U. D. Sharma
RQP/AJM/277/2005- valid upto 2015.

Executing Agency — Lessee will execute the plan.

Copy of Resolution of Board of Directors/Individual enclosed as Annexure – IV.

2.0 MINE DESCRIPTION

2.1 Regional Geology

Geologically, most of the part of the Bundi district is occupied by rocks of Vindhyan formation which forms the part of Great Vindhyan Basin extending from Rohtash in Bihar to Chittorgarh area in Rajasthan. Rocks of Vindhyan range in the area area are divided into Lower Vindhyan and Upper Vindhyan. Lower Vindhyan comprises of Jahazpur and Upper Vindhyan include Kaimur, Rewa and Bhander groups. Lower Vindhyan i.e. Jahazpur is separated from Kaimur group by conglomerate horizon which marks the break in sedimentation before deposition of Kaimur i.e. unconformity. Kaimur, Rewa and Bhander Series of upper vindhyan are also separated from each other by unconformity. Jahazpur group of Lower Vindhyan is generally calcareous. Kaimur and Rewa is generally arenaceous while Bhander is arenaceous and calcareous in nature.

General stratigraphic succession of rock types exposed in Bundi district is as follows:

Super groups	Groups	Formations
Recent to sub recent	–	Soil Alluvium
Vindhyan Super	Bhander series	Sandstone, Limestone & Shale

Group	Rewa series	Shale & Sandstone
	Kaimur series	Shale & Sandstone
~~ Unconformity ~~~~~~~~~~		
	Jahazpur	Dolomite, Phyllite & Quartzite
Bhilwara Super Group	Hindoli & Mangalwar Complex	Shale, Slate/ Phyllite, Quartzite, Dolomites and limestone.

Source: Modified and generalized lithographic sequence after G.S.I. (1981).

The rocks of the area belong to the Lower Bhander group. Main rock type is lower Bhander sandstone (Bundi Hill sandstone)

Structure

No fault, fold or any geological disturbance is observed in the lease area. The general strike is in the NW to SE direction and dip is almost flat to gentle inclined, of sandstone beds.

Evidence of life

The limestone of sirbu shale horizon at places show the evidence of algal life in the form of arch shaped structure known as "Stromatolites". Occurrence of sandstone at different stratigraphic horizon indicates the fluctuations of the sea level due to transgression and regression of the sea several times during the Vindhyan period.

2.1.1 Local Geology

The rocks of the area belong to the Vindhyan group. Main rock type in the lease area is lower Bhander Sandstone (Bundi Hill sandstone). In the area sandstone is overlain by alluvial soil, murram and weathered sandstone Lithographic sequence observed in the area is as given below:-

Alluvium soil	0.5 – 3.0 m
Murram and Weathered Sandstone	1.0 – 3.0 m
Hard and Compact Sandstone	4.0 – 20.0 m
Splittable sandstone	1.0- 10.0m

Specific gravity of sandstone is taken as 2.5 m^3/ ton.

Alluvial Soil: Alluvial soil is mixed with scree and forms alluvium in most part of the land. At some places it is found upto 0.5 m to 3.0 m over mineralized zone.

Weathered sandstone: It is lying over hard and compact sandstone and its thickness ranges from 1.0 to 3.0 m over mineralized zone. It is mixed with murram.

Hard and Compact Sandstone: It is up to 4.0-20m thickness. This is a hard compact requires blasting for fragmentation. This is considered as overburden.

Splittable sandstone: Thickness varies from 1.0m to10.0m. It can be splitted to the de thickness. This has commercial application and has demand in the market. It is used building material and can be used both for interiors as well as exteriors.

Geological map is attached as Plate-V (a).

2.2 Reserves

Sandstone Reserves and Life of the Mine are as:

Geological Reserves: 17.61 M Ton

Mineral reserves: 10.70 M Ton

Life Of The Mine: With rated capacity 2,50,000 Ton per year.

Life of the mine comes to be 42.80 years.

2.3 Mining Method

The mine is fully equipped with modern machineries and equipments for mining and overburden handling, mining operations are being carried out by opencast semi-mechanized method. Topsoil of 0.5 – 3.0 m is scraped through excavator and stacked at designated sites. Below the cover of top soil there are layers of murram and hard rock of weathered sandstone having thickness of 1.0 m to 3.0 m. below this lies massive sandstone varying in thickness from 4.0m to 20.0 m which is removed by blasting. Overburden is handled by excavator - dumper combination. The productive, around 1.0 to 10.0m, zone is exposed excavating overburden. Mining of sandstone starts with separating the layer from natural bondage by chisel and hammering along cleavage plane / weaker zone. The stone layer breaks non-dimensionally depending upon free face available. It is then sized to possible dimension by chisel and hammer. Line drilling method is also used to split massive sandstone blocks. Finally, it is splitted along the natural split planes to yield single solid slab of desired thickness ready to use.

Mineral will be transported to the processing plant. It will be cut into sizes as per market demand and packed. This is then transported outside by the end user's.

Mechanization

The following machinery will be deployed in the mine:

S. No.	Name of machinery	Make	Nos.
1	Compressor	Atlas	4
2	Chain pulley	-	1
3	Crane (Coles)	-	1
4	Diesel Power screw compressor	-	1
5	Drifter	-	1
6	Drill Machine	-	1
7	Dumper	-	17
8	Hydaulic crane	Escort	8
9	Jack Hammer Machine	-	4
10	JCB	-	1
11	Rock drill machine	-	1
12	Excavator	Tata Hitachi Ex-110	1
13	Excavator	Tata Hitachi Ex-200	3
14	Tractor crane	-	1
15	Tractor	-	5
16	Water compressor	-	1
17	Water Pump	-	3
18	Water Tanker	-	3
19	Wagon drilling machine	-	4

Other auxiliary equipments required are:

1. Water sprinkler
2. Diesel tanker
3. Tractor trolleys
4. Explosive van

Production Levels

Year wise proposed production during the plan period will be as follows:

Year	Production target (tons)	Production target (m^3)	O.B/Waste (m^3)	OB : Mineral ratio (M^3:Ton)
I.	1,50,000	60,120	1,48,800	3.2:1
II.	2,50,000	1,00,200	2,64,000	
Total	4,00,000	1,60,320	4,12,800	

2.4 Mineral Beneficiation

The sandstone is brought to the processing area located on the North side. Sandstone is cu into sizes (tiles and furshies) as per market demand and packed for end use.

3.0 REVIEW AND IMPLEMENTATION OF MINING PLAN

New mining scheme is for enhancement of production. This closure plan is being submitted to fulfill statuary obligations. However, no mine closure is envisaged in near future.

4.0 CLOSURE PLAN

4.1 Mined Out Land

Total quantity of overburden and waste to be removed from the pits during the plan period will be 6.14 lac m^3. This quantity of overburden will be backfilled in pit no. 4 on south side of road and between pillar boundary of A-39 & A-40 during the plan period. Area occupied by backfilling would be 9.023 ha with 10.0 m depth of backfilling. Swelling factor has been considered as 1.3. Volume to be accommodated will be 7.99 lac m^3. Quantity of overburden to be removed from the 6th year to the life of the mine will be 13.17 million m^3, which will be backfilled over and area of 80.577 ha upto 17.0 m height. Backfilling has already started in pit no. 5. This has already been backfilled in an area of 5.34 ha. Total backfilled area up to the plan period will be 9.024 + 5.34 = 14.363 ha.

Land use pattern of mining lease area at various stages:-

Sr. No.	Particular	Present Land Use (Ha)	Use After Plan period year (Ha)	Use by the end of Life of mine (Ha)	Use at Conceptual stage
1.	Pit	114.05	116.45	249.78	Rehabilitated & reclaimed by back filling (94.94 Ha) Plantation & water reservoir (154.84. Ha.)
2.	Dump Area	46.92	46.92	46.92	Rehabilitated and Reclaimed by plantation
3.	Road	17.04	18.0	16.50	Public Use
4.	Infrastructure	7.60	8.0	8.50	Public Use
5.	Mineral Storage	3.28	4.50	7.50	Plantation

6.	Plantation	40.75	55.0	70.0	Plantation on undisturbed land, office, nursery, etc
7.	Un worked area	388.70	369.47	219.14	-
	TOTAL	618.34	618.34	618.34	-

4.2 Water Quality Management

The only source of recharging for surface & ground water is from precipitation (rainfall). The annual rainfall in the study area is around 760 mm and generally received during months of monsoon i.e. June to September. Eru river is present at a distance of 1Km in south direction of lease area. This is tributary river of Chambal river. Water will be made available from nearby villages. Water is required for dust suppression, plantation and drinking purposes.

In the area ground water table is at 405 MSL. Proposed mining operation is up to 430 MSL which is 25 meter above the water table. Hence, mining activities will not intersect the water table. Therefore, there is no adverse impact on either the yield or movement of ground water due to mining operations.

In order to mitigate the likely impact the following management has been proposed:

- The rain water accumulating in the work area will be collected and will be used for green belt development.
- To avoid soil erosion, rain water entering into mine pit, wash off material, lessee will provide suitable garland drains (1.0 m x 1.0 m) all along the active mine area.
- To prevent direct impact of rain on soil erosion the resistant and large canopy tree species such as bellflower, grass sowing etc shall be planted.
- Boulder retaining walls (2.0m x 1.5m) all along the toe of the dump on low altitude side shall be constructed.
- Inward terraces will be formed all over the waste dumps to avoid water flow velocity.
- Formation of garland drain (1.0m x 1.0m) to regulate and channelize the rain water from the pit to settling ponds of 3.0m x 3.0m x 4.0m size.

There will be no contamination of water as the mineral and OB material are non-toxic in nature. There are no nalla/ stream etc flowing in the lease area. There will be no leaching of harmful substances from dumps. Hence, quality of water will not be affected.

4.3 Air Quality Management:

Gaseous pollutants will be released from mobile mine machinery and compressor. Vehicle movement for transport of mineral will also cause pollution to air. Loading and unloading of

waste and mineral cause emission of dust. Drilling machine and vehicle movement will generate dust.

In order to mitigate the likely impact, the following management has been proposed:

- Dust suppression system/ water spraying would be adopted at the mine working and loading points.
- No overloading of the vehicles to prevent spillage of material
- Coverage of dumpers/ trucks during transpiration
- Use of sharp drill bits for drilling holes
- Use of delay detonators and shocks tube initiation system for blasting so as to reduce vibration, dust and excessive fragmentation
- Avoid blasting during nights, strong wind and temperature inversion condition
- Excavation operations shall be suspended during very strong wind condition
- Afforestation for control of dust
- Plantation of wide leaf tree, creepers and tall grass along approach road, and on safety barrier zone will help suppressing the dust.
- Face mask to be provided to the workers near excavator, drills etc

NO_x

No_x is produced due to emissions from the operations of machinery and equipments. This can be controlled by proper and regular maintenance.

Noise:

The following measures shall be undertaken to mitigate the noise:

- Acoustic enclosures, hoods, laggings, and screen shall be provided near noise generating area to the extent possible so that the sound pressure in working areas are restricted below 85 dB(A) for 8 hours duties
- Provisions of rotations of workers to minimize the exposure time
- Provision of earmuff exposed to high noise level are also envisaged
- In addition, greenbelt development shall be undertaken around the lease area to minimize propagation of noise
- Use of sharp drilling bits
- Proper maintenance of compressor, drilling machine, jack hammer, tipper trucks and HEMM
- The equipments and machine should be maintained properly. Particular attention should be given to the silencers and mufflers. Ear muffs and other protective devices should be provided to the staff working in high prone areas

- Optimum charge per delay to be specified
- Mille second delay detonators or sequential blasting exclusively to be used
- Regular monitoring of noise pressure shall be done inside & outside mine lease area

4.4 **Waste Management:**

Presently waste is being dumped in south side of road near Pit no 4 and south-west part near demarcation pillar no A39 and A40 of the lease area. Some waste is stacked at waste various dump sites during initial stages. Saturated waste dump has been thickly planted. Waste dump are proposed up to the height of 17m in three terraces of 5 m of height each and slope within 28°. Some waste as murram is used for construction and maintenance of approach roads upto nearest tar road. Local habitants will also use the waste for construction around their agriculture field and other purposes. Stabilization is proposed by retaining walls of rubble stone towards lower altitude side of the dump. Bushes & trees will stabilize dumps. The details of waste management for the scheme period have already been provided in 4.1 of mine closure plan.

Details of existing dumps are given below:

S. No	Dump	Area (Ha.)
1	D-1	21.57
2	D-2	2.68
3	D-3	8.45
4	D-4	3.204
5	D-5	3.14
6	D-6	1.85
7	D-7	2.14
8	D-8	3.34
9	D-9	0.55
Total		46.924

During the plan period backfilling will be carried out as per the details given below:

Year	Pit No. – 4 (Tamatarwala) (Ha.)	Pit No. – 5 (Badwala) (Ha.)	Total (Ha.)
I	0.77	1.269	2.039
II	0.89	1.404	2.294
Total	1.66	2.673	4.333

This has been shown in progressive mine closure plan on Plate no. – 8.

4.5 Top Soil Management

During mining activity top soil 0.5 to 3.0 m in thickness occurring at some places is mainly as sandy loam removed and stacked at designated site and it is further used in plantation over dump. Details of top soil generated are given as:

Year	Top Soil in M^3
I	2,000
II	2,500
III	3,000
IV	4,000
V	4,000
Total	15,500

Average top soil 4000 m^3 will be excavated yearly and will be used in plantation each year during monsoon season.

4.5.1 Plantation

Plantation will be carried out to improve the environment in the lease area and surroundings.

Details of plantation during scheme period are given below:

Year	Area (Ha.)	Plants
I	2.85	100
II	2.85	100
III	2.85	100
IV	2.85	100
V	2.85	100
Total	14.25	500

4.5.2 Care and Maintenance of plants

Arrangements for regular watering of the plants will be carried out. Manuring will be on regular basis. Care will be taken to protect the plants from animals. Due attention will be provided so that plants survive.

4.6 Tailing Dam Management

Not applicable as no tailing dam is proposed.

4.7 Infrastructure

Practically all infrastructural facilities are available in the area. Area is well connected by road as well as by Rail. Nearest railway station is Kota i.e. 37.0 km from the project site. NH-76 i.e. Kota – Chittorgarh is passing from the area. Power of State Electricity Board is available. Water is available from nearby village and mine pit. There is no rope way as well as conveyor belt etc in the area.

4.8 Disposal of Mining Machinery

Not applicable. This is only progressive mine closure plan and during this period of progressive closure plan, no disposal of mining machinery is envisaged. As the mine has life of 71.33 years, no decommissioning or closure is immediately proposed.

4.9 Safety & Security

Pits which will be used as water reservoir will be fenced. Security persons will be posted to guard the equipments/ mine during non working period. Entry roads leading to the mine will have check posts. All the safety measures are implemented in accordance with MMR 1961. Moreover, final closure is not planned in immediate future.

4.10 Disaster Management & Risk Assessment:

This project is an open cast mine in a fairly stable area, free from land slide, earthquake etc. No high risk accidents area anticipated. No tailing dam is proposed. Depth of the working will also not be very high. Benches height will also be not more than 6.0 m. Chances of side fall or bench collapsing are not there. Suitable training to persons employed in the mine under vocation training rules will be given. Regular health check up will be carried out under mines rule 1955.

4.11 Care and Maintenance during Temporary Discontinuance:

No discontinuance is planned. However, following measures will be kept ready:-

i. Shifting of equipments to safe place near office/ workshop etc
ii. Fencing of roads with caution boards, prohibiting entry of persons inside premises
iii. Posting of supervisory persons for inspection of the mine in every shift in order to check any other activity
iv. Posting of guards and creation of check posts
v. Entry of all persons going in out of the mine will be recorded at the check posts

vi. Standing orders will be formed and pasted at mine office, check post and o prominent places indicating guidelines, name of person, telephone numbers in ca any emergency or untoward incident.

5.0 ECONOMIC REPERCUSSION OF CLOSURE OF MINE AND MA POWER RETRENCHMENTS

As no mine closure is proposed in near future, possibility of retrenchment does not exist.

5.1 Number of local residents employed in the mine

80% of workers are from local villages only. In case of any temporary discontinuance, they will be taken back for the jobs they are performing. However, no such types of interruptio are likely to occur during the life of the mine. Compensation will be paid as per the rules applicable at that time.

Possibility of getting employment during this period exists in other mine in the neighborhood. No retrenchment of the manpower is envisaged.

5.2 Compensation

Right now question of payment of compensation does not arise. Whenever any such situation arises, it will be paid as per the law.

5.3 Satellite Occupation Connected to the Mining Industry

By virtue of this mining activity, several people got opportunity to start related or connected business and related activity. Their business will continue and will not be affected as there are other mines also located in the vicinity.

5.4 Continued Engagement of Employees in the Rehabilitated States of Mining Lease Area and Any Other Remnant Activities

As all the persons are employed from the local area hence no rehabilitation is required.

5.5 Envisaged repercussion of the expectation of the society around due to closure of the mine

Overall no repercussion is envisaged as all the local workers are well aware of their future.

6.0 TIME SCHEDULING FOR ABANDONMENT

No part of mine is proposed to abandoned during the period of this progressive closure plan. These details will be provided as and when condition arises.

7.0 ABANDONMENT COST

This mine closure plan is for next five years. The mine will continue in operation after this period also, that's why no cost on abandonment is anticipated during this five year period. However, some cost will be incurred during the scheme period on construction of retaining wall and plantation etc. Details are as follows:

Table 20: Abandonment cost

Particulars	Activity	Expenditure in a year	Expenditure in 2 years
Plantation cost 100 Rs / Plant	100 plants to be planted in a year	10,000	20,000
Retaining wall cost 120 Rs / Meter	100 m length made in a year	12,000	24,000
Total		22,000	44,000

1.0 FINANCIAL ASSURANCE

Financial assurance at Rs/- 15,000 per hectare for the area 19.23 ha to be put to use, work out to be Rs/- 2,88,450 (Rs Two Lac Eighty Eight Thousand Four Hundred and Fifty Only). As per the rule the lessee has to deposit Rs/- 2,88,450 under the rule 37J of Minor Mineral Concession Rule 1986, financial assurance in the form of fixed deposit from schedule bank will be deposited by the lessee.

Table 21: Financial Assurance

S. No.	Item	Area put on use at start of plan (Ha) (A)	Additional requirement during plan period (Ha) (B)	Total (Ha) C = (A+B)	Net area considered for calculation (Ha) D = (C-A)
1.	Area to be excavated	114.05	2.4	116.45	2.4
2.	Storage for topsoil	-	-	-	-
3.	Overburden/ dumps	46.92	-	46.92	-
4.	Mineral storage	3.28	1.22	4.50	1.22

5.	Infrastructure (Workshop, Adm. Building & Road)	7.6 + 17.04 = 24.64	1.36	8.0 + 18.0 = 26.0	1.36
6.	Railways	-	-	-	-
7.	Green belt	40.75	14.25	55.0	14.25
8.	Tailing pond	-	-	-	-
9.	Effluent treatment plan	-	-	-	-
10.	Mineral separation plant	-	-	-	-
11.	Township area	-	-	-	-
12.	Others (Used for Ag. Purpose)	0.0	0.0	0.0	0.0
	Total	229.64	19.23	248.87	19.23

9.0 CERTIFICATE

It is enclosed with the report.

10.0 PLAN AND SECTION

Plan and section are prepared and enclosed with the mining plan.

Satish Kumar Agrawal

Satish Kumar Agrawal

(RQP/AJM/362/2015-A valid up to 2025)

ANNEXURE

Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159600,5159695Fax: 0141-5159697
website: www.rpcb.nic.in
Registered

F(Mines)/Bundi(Bundi)/2(1)/2009-2010/8659-8664

Date: 07/01/2013

No 2012-2013/Mines/1688

Kanahiya Lal Rameshwar Das

Vallabh Nagar, Kota

:Kota- 324 007.

Grant of Consent to Operate under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981 and under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for your Minor Mineral Mine at near Village-Dhameshwar, Tehsil-Bundi, District- Bundi (M.L.No-47/94).

(i) Your applications dated 27/08/2012
(ii) Received on 27/08/2012

view of the details submitted vide your above referred applications/ documents, the Consent to Operate under section 21(4) of Air (Prevention & Control of Pollution) Act,1981 and under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 is hereby granted for carrying mining activities. This consent is subject to the following stipulations:-

1 That this consent is being granted in favour of M/s. Kanahiya Lal Rameshwar Das, a Mine of Minor Mineral having M.L.No.- 47/94 in an area measuring 618.3400 Hectares at/near Village-Dhaneshwar ,Tehsil-Bundi,District-Bundi.

2 That this consent is valid for a period from 01/10/2012 to 13/09/2014

3 That this consent is valid for following mining activities :-

Mineral	Permitted Mining Capacity
1 SAND STONE	80000.0000 TONNES / ANNUM

4 That you shall achieve following standards in ambient air in mine area / mining activities.

Pollutant	Standards for Ambient Air	Standards for mining activity
SPM	500 µg/M³	SPM = 600 µg/M³ (To be measured between 3 to 10 meters from mining activity)
SO_2	120 µg/M³	
NO_x	120 µg/M³	
CO	5000 µg/M³	

Rajasthan State Pollution Control Board
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Registered

ile No F(Mines)/Bundi(Bundi)/2(1)/2009-2010/8659-8664 Date: 07/01/2013

irder No 2012-2013/Mines/1688

5 That the mining effluent shall be treated before disposal so as to conform to the standards prescribed by the Board viz general standards for discharge of the industrial effluent under the Environment(Protection) Act 1986 for Disposal Into Inland Surface Water. The main parameters for regular monitoring shall be as under:

S.No.	Parameters	Limits
1	Total Suspended Solids	Not to exceed 100 mg/l
2	pH Value	Between 5.5 to 9.0
3	Oil and Grease	Not to exceed 10 mg/l
4	Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 30 mg/l
5	Chemical Oxygen Demand	Not to exceed 250 mg/l

6 That the occupier/operator of mine shall ensure that all the conditions imposed in the Forest Diversion Letter issued by the Ministry of Environment & Forests, Government of India, vide letter No 8-8/98- FC dated 24/02/2000 shall be strictly compiled with.

7 That your mining will not intersect the Ground Water Table during the consent period and the permission from the Central Ground Water Authority shall be obtained for intersection of Ground Water Table/ abstraction of ground water, if any and submit a copy of the same to the Board.

8 That this Consent to Operate is for mining / processing / beneficiation of product as mentioned above in M.L.No.-47/94 and a separate Consent to Operate is required to be obtained for any other Mineral mining/ processing/ beneficiation Plant/process if any and for any addition/ modification/ alteration or change in process.

9 That in case, the production exceeds 80,000 Tonnes/Annum then mining operations shall be stopped forthwith and as per EIA Notification, 2006, Environmental Clearance from the competent authority and the consent from the State Board shall be obtained before resuming the mining operations.

10 That the lessee shall develop plantation in atleast 33% of the total lease area to maintain ambient air quality around the mine as per the Action Plan for plantation submitted by you, and the same shall be implemented strictly.

11 That no trade effluent shall be discharged inside/ outside mine premises.

12 That you will get Approved Mining Plan as per Rajasthan Minor Mineral Concession (Second Amendment) Rules, 2012 dated 19.06.2012 and

Rajasthan State Pollution Control Board
4, Institutional Area , Jhalana Doongari, Jaipur-302004

Annexure

Consent to Operate under Air Act- Mining Units

General Conditions:-

1. That this consent shall be subject to the condition that you shall operate the mining activities in the area as per the mining right allowed by the Mining Department in the Mining Lease only.

2. That this consent shall be subject to the directions/orders passed in various Mining/Environment related Writ Petitions by Hon'ble High Court and the Hon'ble Supreme Court.

3. That you shall provide the necessary infrastructure facilities including equipment for the monitoring of ambient air in accordance with the directions given to you by the Rajasthan State Pollution Control Board.

4. That Mining Unit shall undertake the phased restoration, reclamation and rehabilitation of lands as per established practices & procedures (provisions of Mine Closure Plan in case of Major Minerals) affected by prospecting or mining operations and shall complete this work before the conclusion of such operations and the abandonment of prospects or mines.

5. That the project proponent will stack the top soil separately and will use it for plantation and reclamation of overburden dumps

6. That overburden shall be stored in a systematic manner that it does not obstruct the natural drainage pattern of the area. It may be used for back filling. The land shall be identified for disposal of overburden at environmentally compatible site.

7. That Mining unit shall strictly comply with the Mining Plan and Eco Friendly Mining Plan as submitted to & approved by the competent authority. (Eco Friendly Mining Plan for Minor mineral & mining plan for Major minerals i.e. marble, granite Mines).

8. That the water spray and sprinkling system so installed should always be maintained in order to utilize the same for dust suppression.

9. That the domestic effluent if any, shall be treated and disposed of with properly designed septic tank followed by soak pit as per prescribed standard.

10. That the responsibility for performance evaluation of Pollution Control Measure shall be of Mining unit and Mining unit will not commence production unless the satisfactory operation of the Pollution Control Measures is done by the Mining unit in the presence of concerning Regional Officer of Board and is duly certified by him before commencement of production.

11. That Air Emission shall conform to the standards prescribed under the Environment (Protection) Act, 1986.

12. That noise level shall be kept as detailed below and under no circumstances, it shall exceed the prescribed limit:-

a	Day time	(6.0 AM to 9.0 PM)	- 75 dB A (leq)
b	Night time	(9.0 PM to 6.0 AM)	- 65 dB A (leq)

13. That Mining unit shall also conduct ambient air quality monitoring for SPM and noise level in the mining area once in six months and monitoring results shall be submitted to the State Board regularly
14. The Mining unit shall submit Environmental statement for the period April to March latest by the following September every year.
15. That this consent should not be treated as NOC or approval for mining in forest area, if any, falling in the lease and relevant permission under provisions of the Forest (Conservation) Act. 1980 shall be obtained from the competent authority.

P.T.O

16. That for Diesel Generator Set, acoustic enclosure/acoustic treatment shall be provided to meet the prescribed norms w.r.t. noise as per the Gazette Notification of Ministry of Environment & Forests dated 02.01.99. Adequate stack height with D.G. Sets shall also be provided and maintained. Noise from the Diesel Generator Sets shall be controlled by providing an acoustic enclosure or by treating the room acoustically. The acoustic enclosure/acoustic treatment of room should be designed for minimum 25 dB (A) Insertion Loss or for meeting the ambient noise standards, whichever is on the higher. The measurement for Insertion Loss may be done at different points at 0.5 metre from the acoustic enclosure/room and then averaged. The Diesel Generator Sets should also be provided with proper exhausts muffler with Insertion Loss of minimum 25 dB (A). The stack height for the Diesel Generator Sets shall be as notified under the EP Act, 1986.

17. That the Mining unit shall submit a fresh application for Consent to Operate in the prescribed form in triplicate alongwith the requisite fee atleast 120 days in advance of expiry of the consent period for its renewal.

18. That the Mining unit shall comply with provisions of the Manufacture, Storage and Import of Hazardous Chemicals Rules,1989 and the Hazardous Waste (Management & Handling)Rules,1989 and related amendments, as applicable.

19. That this consent is valid, subject to fulfillment of all the other statutory requirements in other Law/Acts/Rules as applicable.

20. That the Mining unit shall submit quarterly compliance report of all the above stated conditions to this office.

21. That the Mining unit shall submit Water Cess returns in case the water consumption is more than 10 KLD under provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 and as amended from time to time.

22. That notwithstanding anything contained in this letter of consent, the State Board hereby reserves to it, the right and power under section 21(6) of the Air (Prevention & Control of Pollution)Act,1981 to review anyone/or all the conditions imposed here-in-above and to make such variations as deemed fit for the purpose of Air Act.

23. That this consent, under no circumstances, be construed as conferment of any property or any interest in the lease area. It is only confined for the purpose of regulation of provisions of the Air Act.

24. That any incorrect information submitted in the consent application form shall make the industry liable for legal action under the provisions of the Air Act.

25. That in case of failure to comply with any of the consent conditions stated as above, the consent issued to the industry shall automatically stand revoked without any notice.

26. That this Consent will not exempt you from any legal action for the past violations, if any, of the Act/Rules/Notifications/Circulars etc.

27. That the Drills shall be operated with water injection system i.e. wet drilling be carried out during mining or the drills shall be operated with dust extractors.

28. That Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mineral and overburden dumps to prevent run off of water and flow of sediments.

29. That the Project Proponent shall construct Retaining Wall and Siltation Pond of appropriate size around the overburden dumps.

30. That the controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented, and permission from the Director General Mine Safety and the Director Explosives.

Group Incharge-Mines

INDIA NON JUDICIAL

५०० रु. Rs 500

भारत

पाँच सौ रुपये FIVE HUNDRED RUPEES

DEED OF PARTNERSHIP

THIS DEED OF PARTNERSHIP is made and entered into this Tenth day of January, in the year Two Thousand Two by and between :

1. Shri Kishan Ghatiwala
   S/o Late Shri Kanhaiya Lal Ghatiwala
   r/o K-9, Durgadas Path,
   Bhagat, Jaipur
   OF THE FIRST PART

2. Shri Anil Ghatiwala
   S/o. Late Shri Giriraj Ghatiwala
   r/o. Krishna Bhawan, Chaura Rasta,
   Jaipur for and on behalf of
   M/s Giriraj Ghatiwala (HUF) representing
   as Karta thereof
   OF THE SECOND PART

3. Shri Hari Ballabh Ghatiwala
   S/o Late Shri Kanhaiya Lal Ghatiwala
   r/o Krishna Bhawan,
   Chaura Rasta, Jaipur
   OF THE THIRD PART

4. Shri Mohan Lal Ghatiwala (Ajmera)
   S/o Late Shri Gopi Chand Ghatiwala
   r/o 7-A BALLABH NAGAR,
   Kota
   OF THE FOURTH PART

5. Shri Suraj Mal Bansal
   S/o Late Shri Rameshwar Das
   r/o 7, Purohit Gopi Nath Marg, Jaipur
   For and on behalf of M/s Suraj Mal (HUF)
   representing as Karta thereof
   OF THE FIFTH PART

6. Shri Navneet Bansal
   S/o Shri Chandra Bihari Bansal
   r/o 7, Purohit Gopi Nath Marg
   Jaipur
   OF THE SIXTH PART

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7. Shri Ashok Bansal
S/o Shri Gulab Chand Bansal
r/o Kunari , Kota

OF THE SEVENTH PART

A N D

8. Shri Jai Vardhan Bansal
S/o Shri Chandra Bihari Bansal
r/o 7, Gopi Nath Marg,
Jaipur

OF THE EIGHTH PART

(each of them hereinafter referred to as 'the partner' and all of them collectively referred to as 'the partners' AND party of first part to party of fourth part collectively as A - Group and party of fifth part to eighth part collectively as B-Group).

THAT WHEREAS Late Shri Kanhaiya Lal Ghatiwala had been holding the mining lease of 10 Sq. K.M. of sand stone quarries at village Dhaneshwar, Sutara etc. Tehsil and District Bundi AND the said Late Shri Kanhaiya Lal Ghatiwala alongwith party of fifth part, party of sixth part & Smt. Santosh Devi Ghatiwala W/o Late Shri Giriraj Ghatiwala had been carrying on business in partnership for the smooth and efficient working and systematic development of the above mentioned mine under the name and style of M/S. KANHAIYALAL RAMESHWAR DAS on the terms and conditions set forth in the deed of partnership executed by and between them on 28.10.1984 AND WHEREAS the said Smt. Santosh Devi Ghatiwala retired from the firm w.e.f. 1.4.1990 AND FURTHER WHEREAS the party of first, second and third parts were admitted into the partnership w.e.f. 1.4.1990 and the parties of first, second, third, fifth and sixth parts alongwith Late Shri Kanhaiya Lal Ghatiwala were since then carrying on business in partnership on the terms and conditions set forth in the deed of partnership executed by and between them on 5th day of April, 1990 as varied by deed of partnership executed by and between them on 1st day of July, 1992. AND WHEREAS the party of Seventh and Eighth parts offered themselves to be admitted as working partners in the firm as from 1st day of April, 1996 to which looking to business exigencies and other diversed valid reasons the other partners agreed to and so the parties of seventh and eight parts were admitted into partnership as from 1st day of April, 1996 as varied by deed of partnership executed by and between them on 1st day of April, 2000.

AND WHEREAS the said Shri Kanhaiya Lal Ghatiwala has expired his last on 4th day of January, 2002 and by virtue of clause (12) of partnership deed dated 1-4-2000 the partnership did not dissolve on his death but continued to subsist amongst surviving partners AND WHEREAS the said Shri Kanhaiya Lal Ghatiwala made a will dated 23-4-1996 under which he bequeathed 50% of said mining lease rights amongst parties of first to third parts and 50% of the said mining lease rights amongst parties of fifth part to eighth part subject to approval of said change by competent authorities of Government. AND FURTHER WHEREAS he bequeathed his share in partnership amongst parties of first to third parts and to party of fourth part for acting as working partner on his admission in partnership and directed them to adjust their respective shares in the partnership as per his wishes to which parties of first to third part agreed and party of fourth part offered himself to be admitted as working partner in the partnership as from 5-1-2002 to which all the partners consented and agreed to and the parties hereto have been carrying on the business in partnership as from the said fifth day of January, 2002 on the terms and conditions set forth herein below :

NOW THIS DEED OF PARTNERSHIP witnesseth and it is hereby agreed amongst the parties hereto as follows :-

1. That the business shall be continued to be carried on under the name and style of M/s. KANHAIYALAL RAMESHWAR DAS (hereinafter referred to as 'the firm') provided that if mutually decided upon and consented by the partners the business may be carried on under any other name and style in place of or in addition to the said firm name.

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2. That the principal place of the business of partnership shall be at Kota in the state of Rajasthan and the business of partnership may be extended to and or carried on at any other place or places, state or states, country or countries, whatsoever as the partners may from time to time at any time determine and agreed upon.

3. That the business of the firm shall be that of prospecting, mining, carrying and working of the mines and quarries for the extraction, refinement, processing and sale of sand stone slabs and other metal ores, minerals and things of all types and description in the state of Rajasthan and such other state or states place or places, as partners may from time to time at any time agree upon.

4. That the partners hereby declare that this reconstituted partnership was commenced with effect from the 5th day of January, 2002.

5. That the partnership shall be partnership at will and it shall be open to either of the partners of A Group or partners of B - Group to determine or terminate the partnership at any time hereafter by giving clear six months' notice in writing in this behalf to partners of other Group. The partnership shall be deemed to have determined or terminated on the expiry of clear six months' from the date of such notice is served by partners of one group determining or terminating the partnership on the partners of other group, provided however that for the purpose of this clause, the said notice shall be deemed to have been properly and effectively served on the date, it is delivered or caused to be delivered by hand or if posted (and it shall be posted under a registered cover, acknowledgement due at the regular business or residential address of the partner on whom this intended to be served) on the date it is received by the other Group of partners. It is specifically agreed that except as provided hereinabove no partner shall have right to dissolve, determine or terminate the partnership in any manner whatsoever. Any partner, however shall have right to retire from the partnership by giving clear six months notice in writing to the other partners in the manner laid down hereinabove and thereafter such partner shall be deemed to have been retired from the partnership on the expiry of said period of six months.

Provided that in case of reconstitution of firm on retirement of any partner or due to any other reason whatsoever the share of partners of A - group and of partners of B - group shall be so adjusted amongst them that each group shall always have 50 : 50 share in the partnership.

6. That the capital required for the purposes of the business of firm shall be brought in by the partners in such manner and in such proportions as may be mutually decided and between them. It is agreed by and between the partners that interest @ 18% p.a. or at such other rate as may be mutually agreed upon or as may be prescribed under Section 40(b) of I.T.Act, 1961 shall be payable by partnership on the amount standing to the credit of capital account of the partners. Such interest payable shall be credited to their respective account at the close of year.

7. That the mining lease of 10 Sq.K.M. of Dhaneshwar Sutra etc. sand stone quarries were in the name of Late Shri Kanhaiya Lal Ghatiwala 50% of which he bequeathed amongst party of first part to third parts and 50% of said mining lease rights amongst the parties of fifth part to eighth parts subject to approval of said change by competent authorities of Government. It is expressly agreed that party of first part to party of third part shall take steps expeditely to get the aforesaid leases or licences for the said Sand Stone quarries transferred in the name of the firm. It is also expressly agreed that pending the said transfer of the lease and/or

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Ashok Bansal

29

licences in the name of the firm as aforesaid and in case for the lack of Government approval or otherwise for any reasons, it is not possible or it is not considered advisable or expedient to have the said lease and or licence transferred in the name of the firm as aforesaid (i) all the rights and privilege attached to the said lease and licences and all obligation arising therefrom shall be deemed to be that of the firm (ii) all the deeds, instruments and documents executed in connection with the working, purchase and sales and generally in connection with the said lease and/or license by or in the name of any of the partners shall be deemed to have been executed by and on behalf of the firm, and (iii) all the payments made and the moneys received in the name of any partner with respect to and in connection with the said lease or license shall be deemed to be payments and receipts of the firm and shall be duly accounted for in the books of the firm.

8. It is specifically agreed amongst the partners that no partner shall engage himself directly or indirectly in the business of processing, mining or trading of sand stone or other dimensional stones without the written consent of other partners. In case of breach of this condition made by any partner he shall be deemed to have been retired from the firm on the date of receiving a notice to the said effect signed by all the partners of either of A-group or B-group.

9. It is specifically agreed that party of fourth part has been admitted in the partnership as working partner and shall remain partner in the firm as long he agrees to and acts as a full time working partner. In case he expresses his inability in writing not to act as working partner in the firm to the other partners of A - group he shall be deemed to have retired from the firm from the date of his communication to them and his share in the partnership firm shall be devided amongst other partners of group - 'A' as may be mutually decided.

It is also specifically agreed that party of fourth part either on his retirement or on dissolution of firm under clause (5) or otherwise, he shall only be entitled to the capital standing to his credit and his share in profits of the firm till date of retirement or dissolution of firm. The party of fourth part belonging to A - Group of partners shall have no right in the surplus which may arise or accrue on realisation of assets of partnership at the time of dissolution of firm or in the mining lease right of A - Group or in goodwill of the firm. These rights of A - Group of partners shall belong to party of first part to party of third part in the proportion of their respective ratio of share in the partnership firm which bears to 50% of their aggregate right.

10. That the net divisible profits of the firm after providing interest on capital shall belong to and be shared by and the losses of the firm shall be borne by the partners in the following proportions viz.,

Party of the first part	20%
Party of the second part	11%
Party of the third part	11%
Party of the fourth part	8%
Party of the fifth part	18.75%
Party of the sixth part	9.5%
Party of the seventh part	12.5%
Party of the eighth part	9.25%

However it is specifically agreed by and between the parties hereto that profit/loss for the period from 1-4-2001 to 4-1-2002 and from 5-1-2002 to 31-3-2002 shall be shared by respective partners on time basis.

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Sunil Bansal

Ashok Bansal

11. That the partners shall be responsible to keep or cause to be kept proper books of accounts wherein shall be entered and maintained full and complete accounts of the business of the partnership firm.

12. That during the continuance of the partnership business at the close of every year on 31st March the final accounts of the firm for the year shall be made out and the yearly profit and loss, balance sheet of the firm shall be drawn up.

13. That each of the partner shall be deemed to have herein convented for himself, his heirs, executors or administrators and on the death of any partner, the partnership shall not be deemed to have dissolved and shall continue to exist amongst surviving partners. The legal heirs, executors and administrators of the deceased partner shall be deemed to be partner or partners as the case may be to the same extent and on the same terms, conditions and stipulations as the deceased partner was as a partner in the firm under these presents.

However it is specifically agreed that the legal heirs etc as aforesaid of party of fourth part shall be admitted in the partnership on the same terms & conditions in which he is partner in the firm and further on his agreeing to act as working partner of the firm.

14. That with respect to other matters, relating to the business of the firm or the conduct thereof, not specifically provided for in this agreement, the partner shall act and make agreements therefor in such manner as may be mutually decided upon and agreed to by them at the time hereafter from time to time.

15. That no partner shall without the consent in writing of the other partners :-

(a) Transfer, assign or charge his share in the profits, right, title or interest in the partnership firm to any person other than the partners.

(b) except in ordinary course of business of firm execute any deed or stand surety for any person or act in any other manner whereby the property of the firm be made liable.

(c) except in ordinary course of business of firm enter into any contract or engagement or give credit or lend any of the partnership fund, compound, release, discharge or postpone any debt or demand due or payable to the firm.

(d) enter into any speculative, wagering or hazardous transaction, or trade of such kind or description; and

(e) except in ordinary course of business of firm borrow any amount for and on behalf of firm in a manner not authorised by partners.

16. That every partner is agent of the other partners and shall keep informed other partners of the business, transactions, correspondance and other aspects relating to the partnership firm. No partner shall do or cause to be done anything, which may be detrimental to the interest of other partners or the partnership firm.

Contd....6..

Ashok Bansal

17. That any disputes or difference that may at any time arise between the partners or their legal heirs, executors and administrators with regard to the construction meaning and effect of this deed or any part thereof or respecting the accounts profits or losses of the business or the rights and or the liabilities of the partnersunder this deed of partnership or the dissolution, determination or termination of the partnership or any other matter relating to the firm shall be referred to arbitration in accordance with the provisions of the Arbitration Act and the rules made thereunder relating to the arbitration for the time being in force in Rajasthan. This deed shall be deemed to be an agreement to submit to the Arbitration.

It is specifically agreed that in case the dispute or difference of partnership is referred to arbitration in accordance with this clause, the day to day business of partnership shall be conducted jointly by two partners of firm i.e. one from A - group and other from B - group each of who may be nominated by respective group for the purposes of smooth running of business without effecting any rights or liabilities of partners inter-se as provided in this deed of partnership.

IN WITNESS WHEREOF the parties hereto have hereunto set and subscribed their respective hands and seals the day and year first hereinabove written.

Witnesses :

1. (OMPRAKASH RAWAT)

2. (MANOJ KR NYATI)

1. Party of the first part

2. Party of the Second part

3. Party of the third part

4. Party of the fourth part

5. Party of the fifth part

6. Party of the sixth part

7. Party of the seventh part

8. Party of the eighth part

INDIA NON JUDICIAL

१०० रु. Rs 100

भारत

एक सौ रुपये ONE HUNDRED RUPEES

GOVT. OF INDIA

मुख्तारनामा आम

1) किशन घाटीवाला आत्मज स्व. श्री कन्हैयालाल घाटीवाला उम्र 53 वर्ष निवासी के-9, दुर्गादास पथ, सी-स्कीम, जयपुर

2) अनिल घाटीवाला आत्मज स्व. श्री गिरीश घाटीवाला उम्र 40 वर्ष निवासी चौड़ा रास्ता, जयपुर

3) हरि वल्लभ घाटीवाला आत्मज स्व. श्री कन्हैयालाल घाटीवाला उम्र 47 वर्ष निवासी कृष्ण भवन, चौड़ा रास्ता, जयपुर

4) सुरजमल बंसल आत्मज स्व. श्री रामेश्वरदास जी उम्र 53 वर्ष निवासी 7, पुरोहित गोपीनाथ मार्ग, जयपुर

5) नवनीत बंसल आत्मज श्री चन्द्रबिहारी बंसल, उम्र 32 वर्ष निवासी 7, पुरोहित गोपीनाथ मार्ग, जयपुर

6) जयवर्धन बंसल आत्मज श्री चन्द्रबिहारी बंसल, उम्र 34 वर्ष निवासी 7, गोपीनाथ मार्ग, जयपुर

भागीदारान फर्म कन्हैयालाल रामेश्वर दास, कोटा के है।

जो कि हम मुख्तियान श्री मोहन घाटीवाला व श्री प्रमोद बंसल जो कि उपरोक्त फर्म में भागीदार भी है के साथ पत्थर का खनन कार्य व व्यापार करते है।

यह कि एक खनन पट्टा [illegible] स्टोन निकट ग्राम [illegible]

क्रमशः----2

Identified by (S.C. Arora)

ATTESTED

DATE 12-7-2002

GOVT.

370.

12/7/2001

12-7-2001

कुड़ा आदि तहसील एवं जिला बून्दी में जो कि पूर्व में स्व. श्री कन्हैयालाल पाटीवाला के पक्ष में था को वर्तमान में फर्म कन्हैयालाल रामेश्वर दास कोटा के नाम किया जाना प्रस्तावित है।

यह कि उपरोक्त खनन पट्टे से संबंधित विभिन्न कार्यों को करने हेतु विभिन्न विभागों में व कोर्ट आदि में उपस्थित होना पड़ता है जिन्हें हम सभी स्वयं उपस्थित होकर करने में असमर्थ है। इसलिये हम अपनी ओर से एवं फर्म कन्हैयालाल रामेश्वर दास कोटा की ओर से श्री मोहन पाटीवाला आत्मज स्व. श्री गोपीचंद जी, उम्र 54 वर्ष, निवासी 7-ए, वल्लभनगर, कोटा एवं श्री अशोक बंसल आत्मज श्री गुलाबचंद जी, उम्र 40 वर्ष, निवासी कुन्हाड़ी कोटा जो कि दोनों ही उक्त फर्म के पार्टनर है को मुख्तार आम नियुक्त करते है एवं घोषित करते है कि हम मुकिरान उपरोक्त फर्म की ओर से उपरोक्त खनन पट्टे से संबंधित जो भी कार्य कर सकते है वे मुख्तार आम श्री मोहन पाटीवाला व श्री अशोक बंसल को संयुक्त व पृथक रूप से करने का अधिकार होगा। जैसे :-

1- मुख्तार आम को फर्म की ओर से उपरोक्त खनन पट्टा सेण्ड स्टोन को फर्म कन्हैयालाल रामेश्वर दास के नाम ट्रान्सफर करवाना, संविदा निष्पादन करना, माईनिंग विभाग में उपस्थित होना, विभिन्न दस्तावेजों पर दस्तखत करना, खनन पट्टे का रजिस्ट्रेशन करवाने, कब्जा लेने, आदि का अधिकार होगा।

2- मुख्तार आम को फर्म की ओर से वकील नियुक्त करने, दावा, अपील पत्र अपील, निगरानी, प्रार्थना पत्र, आदि पेश करने, इजराय करवाने आदि न्यायालय में समस्त कार्य करने का अधिकार होगा।

अतः मुख्तार आम द्वारा संयुक्त व पृथक रूप से उपरोक्त वर्णित कार्य को फर्म की ओर से व हमारी ओर से किया जाना माना जावेगा। व फर्म तथा हम सब भागीदार उसके लिये पाबंद व बाध्य रहेंगे।

अतः यह मुख्तारनामा आम स्वेच्छा से स्टाम्प कीमती रुपये 100/-

ATTESTED
2-7-00

क्रमशः---3

1100 रुपये का एक स्टाम्प व दो पिटिशन पेपर। कुल किस्सा तीन पर आमेहीत कर दिया है जो कि सनद रहे व समय पर काम आवे।

दिनांक:

हस्ताक्षर मुकिरान

साक्षी-

1- (Monojit Ray)

2-

(1) Gitali Walia
(2) Anil Gretimala
(3) Gitali Walia
(4) Sunajal Bansal
(5) Manjee Bansal
(6) Bansal

ATTESTED
BANK
DOT 12-7-22

भारत सरकार /GOVERNMENT OF INDIA
खान मंत्रालय/MINISTRY OF MINES
भारतीय खान ब्यूरो /INDIAN BUREAU OF MINES

SKAgrawal

अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र

(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)

CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON

(Under Rule 22C of Mineral Concession Rules, 1960)

श्री सतीश कुमार अग्रवाल पुत्र स्व. श्री बाल मुकुन्द अग्रवाल, मार्फत लक्ष्मी मार्बल एवं ग्रेनाईट (प्रा.) लि. आयकर कार्यालय के पास, नीम का थाना जिला – सीकर – 332713 (राजस्थान), जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिन्होंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनिज रियायत नियमावली 1960 के नियम 22सी के तहत अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है।

Shri Satish Kumar Agrawal S/o Late Shri Balmukund Agrawal, C/O M/S Laxmi Marble & Granites (P) Ltd., Distt - Sikar - 332713 (Rajasthan), whose Photograph and signature is affixed herein above, having given satisfactory evidence of his qualifications & experience is hereby RECOGNISED under Rule 22C of the Mineral Concession Rules, 1960 as a Qualified Person to prepare Mining Plans.

उनकी पंजीयन संख्या है

His registration number is **RQP/AJM/362/2015/A**

यह मान्यता दस वर्षों की अवधि के लिए मान्य है जो दिनांक 21.01.2025 को समाप्त होगी ।

This recognition is valid for a period of ten years ending on .

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी/दस्तावेज पाए जाने की स्थिती में यह प्रमाण पत्र वापस लिया जाएगा/निरस्त किया जाएगा ।

This certificate will liable to be withdrawn/cancelled in the event of furnishing the wrong information/documents in the Mining Plan submitted by him.

स्थान /**Place : Ajmer**

दिनांक /**Date :** 22.01.2015

क्षेत्रीय खान नियंत्रक / **Regional Controller of Mines**
भारतीय खान ब्यूरो /**Indian Bureau of Mines**
अजमेर क्षेत्र/**Ajmer Region**
Indian Bureau of Mines

खनिज पंचम नीलामी क्र.एल 47/96

GOVERNMENT OF RAJASTHAN

Department of Mines & Geology, Rajasthan

FORM No. 6

(See Rule 19)

Model Form of Mining Lease

This Indenture made this ..... of 19 ..... between the Governor of the State of Rajasthan (hereinafter referred to as the Government which expression shall, where the context so admits, include his successors in office and assigns) of the one part and ( ) when the lessee is an individual. .....

(Name of person)

(hereinafter referred to as the lessee which expression shall where the context so admits, include his heirs, executors, administrators, representatives and permitted assigns).

(2) when the lessees are more than one individual .....

(Name of person)

of ..... (Address and occupation)

and ..... (Name of persons) of

..... (Address and occupation)

and ..... (Name of person) of

..... (Address and occupation)

(hereinafter referred to as the 'Lessees' which expression shall, where the context so admits, include their, respective heirs, executors, administrators, representatives and permitted assigns).

(3) When the Lessee is a firm (1) श्री ..... (Name of person)

of (2) श्री ..... (Address)

and (4) श्री ..... (Name of person)

of (5) श्री ..... (Address)

and (7) श्री ..... (Name of person)

(8) श्री ..... (Address)

All carrying on business in partnership at (address of the firm ..... Dharam Marg Dharam Sala ..... BUNDI (RAJ) ....) under the name and style of (Name of the Firm) ..... (hereinafter referred to as the 'Lessees' which expression shall where the context admits, include all the partners of the said firm, their representatives heirs executors administrators and permitted assigns).

(4) When the Lessee is Registered Company .....

(Name of Company) a company ..... Registered under ..... (Act under which incorporated) and having its

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खनि अभियन्ता

खनि प्रभाग, बून्दी

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registered office at..... (Address) (hereinafter referred to as the 'Lessee' which expression shall where the context so admits, include its successors and permitted assigns) of the other part.

Whereas the Lessee/Lessees has/have applied to the Government in accordance with the Rajasthan Minor Mineral Concession Rules, 1986 (hereinafter referred to as the said rules) for a mining lease or ..... in respect of the lands hereinafter described in clause 1 (b) and has/have deposited with the Government the sum of Rs. 7500/- N.S.C. ..... as security.

Now therefore, this deed witnesses and the parties hereto hereby agrees as follows :-

1. Demises:—(a) In consideration of the rents and royalties covenants and agreements hereinafter contained and on the part of the lessee/lessees to be paid, observed and performed the Government hereby grants and demises upto the Lessee/Lessees all those mines, beds, veins, seams of (hereinafter referred to as the said minerals) situated, lying and being in or under the lands which referred to hereinafter and subject to other provisions of this lease.

(b) The area of the said lands is as follows:— ..... (hereinafter referred to as the said lands or the leased area) .....)

(c) The Lessee/Lessees shall Hold the premises hereby granted and demised from the date of registration of period of ..... year hence next ensuring.

2. Liberties, powers and privileges to be exercised and enjoyed by the lessee:—The following liberties, powers and privileges may be exercised and enjoyed by the Lessee/Lessees subject to the other provisions of this lease.—

(a) To enter upon land and search for, win, work etc.—Liberty and powers at all times during the terms hereby demised to enter upon the said lands and to search for, mine, bore, dig drill, for win, work dress, process convert, carry away and dispose of the said minerals.

(b) To sink drive and make pits shaft and inclines etc.—Liberty and powers for or in connection with any of the purposes mentioned in this clause to sink, drive, make, maintain and use in the said lands and pits, shafts, inclines, drifts, levels waterways, airways and other works and to use, maintain deepen or extend any existing works, of the like nature in the said lands.

(c) To bring and use machinery and equipment.—Liberty and power for or in connection with any of the purposes mentioned in this clause to erect, construct, maintain and use on or under the said lands any engines, machinery, plant, dressing floors, furnaces, coke ovens brick kilns work-shops, store houses, bunglows, godowns, shed and other buildings and other works and conveniences of the like nature on or under the said lands.

(d) To use water from streams etc. - Liberty and power for or in connection with any of the purposes mentioned in this clause but subject to the rights of any existing or future lessee and with the written permission of the Collector to appropriate and use water from any stream, water courses, springs or other source in or upon the said

lands and to divert, stop up or dam any such stream or water course and Collect or impound any such water and to make, construct and maintain any Water course, culverts, drains or reservoirs but not so as to deprive any cultivated land, village building or watering places for a livestock of a reasonable supply of water as before accustomed nor in any way to foul or pollute any stream or spring provided that the lessee /lessees shall not interfere with the navigation in any navigable stream nor shall divert such stream without previous written permission of the Government.

3. Restriction as to the exercise of the liberties, [illegible] liberties, powers and privileges granted by clause 2 are subject to the following restriction and subject to the other provisions of this lease.—

(a) The mining operations within 45 metres of public works etc.— The Lessee/Lessees shall not work or carry on or allow to be worked or carried on any mining operations at or any point within a distance of 45 metres from any railway line except with the previous written permission of the Railway Administration concerned, or from any reservoir, canal or other public work or building or inhabited site except with the previous permission of the Collector or any other officer authorised by the Government in this behalf and otherwise than in accordance with such instructions, restrictions and conditions either general or special as may be attached to such permissions. The said distance of 45 metres shall be measured in the case of railway reservoir or canal horizontally from the outer toe of the bank or the outer edge of the cutting as the case may be and in case of a building horizontally from the plinth thereof.

Explanation:—For the purpose of this clause:—

(i) The expression Railway Administration shall have the same meaning as it is defined to have in the Indain Railway Act; 1893 by sub-section (4) of section 3 of that Act.—

(ii) (a) public road' shall mean a road which has been constructed or artificially surfaced as distinct from a track resulting from repeated use.

(b) permission for surface operation in a land not already in use:-before using for surface operation any land which has not already been used for such operations the Lessee/Lessees shall give to the Collector of the District two calendar months previous notice in writing specifying the situation and the extent of the land proposed to be so used and the purpose for which the same is required and the said land shall not be so used if objection is issued by the Collector within two months after receipt by him of such notice unless the objection so stated shall on reference to the Government be annuled or waived.

4. The Lessee/Lessees hereby covenants with the Government as following:—

(1) *Covenants in accordance with Rajasthan Minor Mineral concession Rules 1986*.—The Lessee/Lessees shall pay royalty on the quantity of the said mineral when quarried from or consumed within the leased area at the rates specified in Schedule-I appended to Rjasthan Minor Mineral Concession Rules 1986 :

provided that the said rates shall be liable to be revised by the Government and such revision shall apply to this lease subject to the condition that the enhancements in the rate of royalty shall not be [illegible] period of four years.

उप पंजीयक

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(2) *Surface:*— The Lessee/Lessees shall pay for the surface area used by him/them (for the purpose of mining) surface rent equal to the land revenue payable under the Rajasthan Land Revenue Act, 1956 or any other Law in force to the Land Revenue Department of State.

(3) *Dead rent:*— The Lessee/ Lessees shall also pay for every year, the yearly dead rent as determined from time to time :

provided that the Lessee/ Lessees shall be liable to pay the dead rent or royalty in respect of each mineral, whichever be higher, but not both.

(4) *Rate and mode of payment of dead rent etc.*— Subject to the provisions of sub-clause (3) above as from the day of 14/9/96 .....during the subsistance of the lease the Lessee/Lessees shall pay to the Government in four equal quarterly instalment on the 14 सितम्बर, 14 दिसम्बर day of 14 मार्च, 14 जून ..... the day of ..... the day of ..... and the day of ..... for each year the minimum annual royalty as "dead rent" of Rs. 11,74,360/- (ग्यारह लाख चौहत्तर हजार तीन सौ साठ रुपये) in the office of the Mining Engineer/Assistant Mining Engineer of the Division Sub-Division subject as aforesaid. This provision will also apply to the payment of royalty. Surface rent will be deposited with the Revenue Department.

(4) (a) *Dump removal charges.*- The Lessee/ Lessees shall pay such amount per year or part thereof to the Government for ecological restoration of mines and quarries in the said area at such time and such rate as may be fixed by the Government from time to time.

(b) *To pay compensation for damage and indemnify the Government.* The Lessee/ Lessees shall make and pay such reasonable satisfaction and compensation for all damage, injury or disturbance which may be done by him/ them in exercise of the powers granted by the lease and shall indemnify the Government against all claims which may be made by third parties in respect of such damage, injury or disturbance.

(5) (a) *To indemnify against all claims and to pay compensation for infringement of rights of third persons.*- The Lessee/ Lessees shall make and pay such reasonable satisfaction and compensation as may be assessed by lawful authority in accordance with the law in force on the subject for all damage, injury or disturbance which may be done by him/ them in exercise of the powers granted by this lease and shall indemnify keep indemnified fully and completely the State Government against all claims which may be made by any person or persons in respect of any such damage, injury or disturbance and all costs and expenses in connection therewith.

(b) If in exercise of any right conferred by this lease, the rights of any person are infringed by the occupation or disturbance of the surface or any land required and quarrying in the area hereby demised and for the purposes subsidiary thereto Lessee/ Lessees shall pay such compensation for such infringement and the amount of such compensation shall be calculated by the Collector or if his award is not accepted, by the Civil Court, as far as possible, in accordance with the provision of the Rajasthan Land Acquisition Act, 1953 (Rajasthan Act XXIV of 1953).

(c) The Lessee/ Lessees shall not enter on or occupy the surface of any land without the previous sanction of the Collector unless the compensation has been determined and tendered to the person whose rights are infringed

खान अभियन्ता
कुन्द प्रदेश, बून्दी

(d) If the Lessee/Lessees fail to pay any compensation as provided in this sub-clause, the Collector may recover such compensation from him/them on behalf of the person entitled to it as if it were an arrear of land revenue.

(6) *Not to injure-tree.*—The Lessee/Lessees shall not cut or injure any tree in area of his/their lease without the previous sanction in writing of the Chief Conservator of Forests, Rajasthan or an officer authorised by him.

(7) *To maintain boundary pillars:*—The Lessee/Lessees shall at his/their own expense erect and at all times maintain and keep in repair boundary pillars and marks according to the demarcation shown in the plan annexed hereto.

(8) *Not to erect buildings etc. on certain places.*—The Lessee/Lessees shall not erect any building or carry on any surface operations on any public pleasure grounds, places of worship sacred graves, burial-grounds or village sites for houses, public roads or other places which the competent authority may determine as public grounds to bring within this restriction.

(9) *To commence mining operations within three month and carry them on priority:*—The Lessee/Lessees shall commence mining operations within three months from the date of the lease to him/them and thereafter carry on such operations effectively in a proper skilfaly and workman like manner both as regards prevention of waste by removal of sufficient overburden careful storage of waste and drainage and as regards removal of all valuable minerals within the mine.

(10) *Accounts:*—The Lessee/Lessees shall keep correct accounts showing the quantity and particulars of all minerals obtained from the mine, details of mineral sold or despatched and the number of persons employed therein and also complete plans of the mine and shall allow any officer of the Department at any time to examine such accounts and plans and shall furnish him with such information and return in respect of aforesaid matter as he may require.

(11) *Abiding by Rules.*—The Lessee/Lessees shall abide by all existing Acts and Rules enforced by the Government of India or the State Government and all such other Acts or rules as may be enforced from time to time in respect of working of the mine and other matters affecting safety, health and covenience of the employees of the Lessee/Lessees or of the public.

(12) *To allow facilities to other lessees etc.:*—The Lessee/Lessees shall allow existing and future licensees or lease holders of any land which is comprised in or adjoins or is approachable by the land held by the Lessee/Lessees, reasonable facilities for access thereto.

(13) *To allow entry to officers.*—The Lessee/Lessees shall allow any officer of the Department or of the Indian Bureau of Mines to enter upon the premises comprised in the lease for the purpose of inspecting the same and abide by instructions issued by him from time to time regarding the conservation and development of minor minerals and other related matters.

(14) *Buildings erected by Lessee.*—The Lessee/Lessees may erect on the area leased to him/them any building required for bonafide mining purposes and such building shall be the property of the Government after expiry of the lease.

(15) *To report accident and discovery of any other mineral:*—The Lessee/Lessees shall without delay report to Director, Mining Engineer/Assistant Mining Engineer or any other officer authorised by them any accident which may occur at or in the said premises and also the discovery on or within any of the lands of mines demised by the lease of any minerals whether minor or otherwise not specified in the lease

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(16) *Working of newly discovered Minerals.*—If Lessee/Lessees intends to work such newly discovered mineral or minerals he/they shall within three months of making such report as is mentioned in sub-clause (15) intimated his/their intention to the officer of the Department having jurisdiction over the area and apply for quarry licence or mining lease in respect thereof in accordance with the rules regulating the grant of mining concessions for that mineral. But such quarry licence or mining lease shall not be granted as a matter of right.

(17) *Not working the newly discovered minerals.*—If the Lessee/Lessees intimates his/their intention not to work the newly discovered minerals or fails to intimate his/their intention to work it within a period of three month, then it shall be open to the Government to grant a licence or lease for the working of the same to any other person.

(17) (a) *To hand over possession of protected area.*—If any area out of the lease area is declared as a protected area under the Ancient Monument Preservation Act, 1904 (Central Act VII of 1904), the lessee will have to deliver the possession back to the State Government without claiming any compensation for that area.

(18) *Liberty to determine the lease.*—The Lessee/Lessees may at any time determine this lease with immediate effect by giving a notice in writing to the State Government or to such officer or authority as the State Government may specify in this behalf and shall pay all rates, water rates, royalties, compensation for damages and other monies which may then be due and payable under these presents to lessor or any other person or persons and shall deliver these presents to the competent authority and then this lease and the said term and the liberties, powers and privileges hereby granted shall absolutely cease and determine but without prejudice to any right or remedy of the lessor in respect of any breach of any of the covenants or agreement contained in its presents.

(19) *Cancellation.*—The lease shall be liable to be cancelled by the Director if the Lessee/Lessees ceases to work the mine for a continuous period or six month without obtaining written sanction of the Government.

(20) *Preemption.*—The Government shall have the rights of preemption at current market rates over all minerals lying in or upon the lands demised by the lease and shall be indemnified by the Lessee/Lessees against claims of any other party in respect of such minerals.

(21) *Consequence of non payment of royalty or Rent.*—The Government shall determine the lease after serving a notice on the lessee to pay the dues within 15 days from the date of the receipt of notice and forfeit the security amount if the dead rent or royalty or dump removal charges are not paid within 15 days next after the date fixed in these presents. The Government shall have the right at any time after serving the above notice to enter upon the said lands and distrain all or any of the minerals or movable property therein and shall carry away detain or [illegible] sale of the property so distrained or so much of it as will suffice for satisfaction of the rent or royalty or dump removal charges and all cost and expenses occasioned by the non-payment thereof. These Realise shall be without prejudice to the right of the Government to realise all its dues, under the Rajasthan Public Demand Recovery Act, 1952 (Rajasthan Act V of 1952) of Rajasthan Land Revenue Act, 1956 (Rajasthan Act No. 15 of 1956).

(22) *Consequence of breach of other covenants.*—In case of any breach on the part of the Lessee/Lessees of any covenant or condition contained in the lease whether contained in this clause or any other clause of this lease, the Government may deter-

खनि अभियन्ता
खण्ड प्रथम, कुन्दो

mine the lease and forfeit the security amount and take possession of the said premises; or in the alternative, may impose payment of a penalty not exceeding twice the amount of the annual deadrent from the Lessee/Lessees. Such action shall not be taken unless the Lessee/Lessees has/have failed to remedy the breach after 15 days notice.

(23) *Delivery on termination of lease*: —On expiry or earlier determination of the lease the Lessee/ Lessees shall deliver up the said premise and all mines (if any) dug in respect of any working as to which the Government might have sanctioned abandonment.

(24)(a) *Determination of lease in the public interest*:—The Government may determine the lease if the Government considers that the minor minerals under the lease are required for establishing an industry beneficial to the public.

(b) Determination of lease for the aforesaid purpose shall not be valid unless six calander month's notice in writing has been given by the Government to the Lessee/Lessees. Such notice need not however, be given in war or emergency.

(5) *Further covenants of the Lessee*:—The Lessees/Lessees hereby covenants/ covenant with the Government as follows:—

(1) Unless specifically exempted by the State Government, the Lessee/Lessees shall provide and at all time keep at or near the pit-head at which the said minerals shall be brought to bank a properly constructed and efficient weighing machine and shall weigh or cause to be weighed thereon all the said minerals from time to time brought to bank, sold, exported and also the converted products, and shall at the close of each day cause the total weights of the said minerals, ores and products raised sold, exported and converted during the previous twenty four hours to be ascertained and entered in the aforesaid books of accounts. The Lessee/Lessees shall permit the Government at all times during the said term to employ any person or persons to be present at the weighing of the said minerals as aforesaid and to keep accounts there of and to check the accounts kept by the Lessee/Lessees. The Lessee/Lessees shall give 15 days previous notice in writing to the Mining Engineer/ Assistant Mining Engineer of every such measuring or weighing in order that he or some officer on his behalf may be present thereat.

(2) *To allow test of weighing machine*:—The Lessee/Lessees shall allow any person or persons appointed in that behalf by the Government at any time or all times during the said term to examine and test every weighning machine to be provided and kept as aforesaid and the weights used there with in order to ascertain whether the same respectively are correct and in good repair and order and if upon any such examination or testing any such weighing machine or weight shall be found incorrect or out of repair or order, the Government may require that the same be adjusted, repaired and put in order by and at the expense of the Lessee/ Lessees within fourteen days failing which the Government may cause such weighing machine or weight to be adjusted, repaired and put in order and the expenses of so doing shall be paid by the Lessee/ Lessees to the Government on demand, and if upon any such examination of testing as aforesaid any error shall be discovered in any weighing machine or weights to the prejudice of the Government, such error shall be regarded as having existed for three calander months previous to the discovery there of or inform the last occasion of so examining and testing the same weighing machine and weights in case such occasion

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shall be within such period of three months and the said rent and royalty shall be paid and accounted for accordingly.

(3) *Not to obstructworking of other minerals:*—The Lessee/Lessees will exercise the liberties and powers hereby granted in such manner as to cause no unnecessary or reasonably avoidable obstruction or interruption to the development of any working within the said lands of any minerals not include in this lease and shall at all times afford to the Central and State Government and to the holders of prospecting licence or mining leases in respect of any such minerals within any land or any minerals within any land adjacent to the said lands as the case may be, reasonable means of access and safe convenient passage upon and across the said lands, to such minerals for purpose of getting, working, developing and carrying away the same provided that the Lessee/Lessees shall receive reasonable compensation for damage or injury which be they may sustain inconsequence of the use of such passage by such lessees or holders of prospecting licences.

(4) *Forfeiture of property left more than six months after determination of lease* :-If on expiration of lease or earlier determination of the lease or after the date from which any surrender by the Lessee of a part or parts of the said lands under the provision contained in sub-clause (18) of clause 4 of this lease becomes effective, there remain in or upon the said land of the surrendered part or parts here of as the case may be, any engines machinery plants, structures tramways, railways and other work erections and conveniences or other property which are not required by the Lessee/Lessees in connection with his/their operations in those parts of the said lands which have not been surrendered or in any other lands hold by him/them under a prospecting licence or Mining lease granted by the Government, they shall become the property of the Government and may be sold or disposed of in such manner after a period of 6 months from the date of expiration or earlier determination of the lease the Government may deem fit without liability to pay any compensation

(5) *Exemption of royalty for tenants:*—No royalty shall be charged on minor minerals required by the tenant for any *bona fide* purpose as specified in rule 53 of the rules.

(6) *Further convenants of the lessee:*-The Lessee/ Lessees further convenants/ convenant with the Government as follows:—

(1) *Interest:*—The Lessee/Lessees shall pay to the Government simple interest at the rate of 12% per annum on all amounts outstanding against the Lessee/Lessees under this lease, whether as dead rent, royalty, surface rent or otherwise.

(2) *Keeping mines etc. in good order:*—The Lessee/ Lessees shall keep through out the term of his/their lease all mines, buildings, engines, machinery and other mining plants in good repair and working order.

(3) *Taking ballast etc. for leased area only:*—The Lessee/ Lessees shall take out and use ballast, khandas and rubbles from his/their quarries for his/their *bona fide* use in the leased area only and shall pay royalty for minerals so used.

(4) *Delivery of samples of rock etc:*—The Lessee/Lessees shall deliver to or permit to be taken by the representative of the Government

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a sample or samples all coke found on mines or raised and all intermediate and finished products sold or intended for sale by the Lessee/ Lessees.

(5) *Security of pits and shafts and not filling them up:*—The Lessee/ Lessees shall properly secure pits, and shafts and will not without permission in writing of the Mining Engineer wilfully close, fill up or choke any mine or shafts.

(6) *Setting apart land for public purposes:* -The Lessee/ Lessees shall when required by the Government so to do set apart land for public purposes and Government may occupy the same whenever it thinks necessary or expedient but Government will, so far as is compatible with the objects aforesaid, select the land so as not to interfere with the mining operations of Lessee/ Lessees and will from time to time pay to Lessee/ Lessees such sums of money as expended in buying surface right over any of the lands so set apart and cost of removal of any work carried thereon and for any loss or damages caused to the Lessee/ Lessees by any interference in the mining operations.

(7) (a) *Abstaininig from froty entering occupied land:*—The Lessee/Lessees shall abstain from entering on the surface of any occupied Government land or of any private land comprised within the leased area without previously obtaining the consent of the occupant in writing.

(b) The Lessee/Lessees shall abstain from opening any new quarry or depot in the leased are without the previous sanction of the Mining Engineer/ Assistant Mining Engineer concerned.

(8) *Not to obstruct road etc:*—The Lessee/ Lessees shall keep open and in no way obstruct any road, path or way by any means whatsoever.

(9) *Not to obstruct working of other minerals:*—The Lessee /Lessees shall in the event of his/their declining to take a lease permit the Government or other persons duly authorised by the Government in that behalf to enter into the leased area and to conduct prospecting and mining operations thereon in respect of minerals or other substance other than ..... but the Government will, so far as is compatible with the objects aforesaid, select the land to be so set apart and appropriated in such a manner as not to interfere with the mining operations of the Lessee/ Lessees and will indemnify the lessee/ lessees for any loss or damage caused to the lessee by any interference with the mining operations.

(10) *To allow free use of tanks, water courses, etc, to the public and Government:*—The Lessee/ Lessees shall abstain from all interference with and allow to the public and the Government the free use of tanks, water courses, places of worship scared graves, burial grounds and village sites for houses which may be existing or may hereafter be set apart or appropriated as hereinbefore provided on the leased area.

(11) *Not to use land for other purposes:*—The Lessee/ Lessees shall not cultivate or use the land save for the purposes of the lease.

(12) *Not to enter upon or commence operations in Forest land etc:*—The Lessee /Lessees shall not enter upon or commence any mining opera-

tions in any State Forest or land under special protection comprised in the leased area except after previously obtaining permission in writing of the competent officer.

(13) *To respect water rights and not to injure adjoining property.*—The Lessee/Lessees shall not injure or cause to deteriorate any sources of water, power or water supply and shall not in any other way render any spring or stream of water unfit to be used for do any thing to injure adjoining lands, villages or houses.

(14) *Removal of stock of minerals on expiry or determination of the lease.* The Lessee/Lessees shall on the termination or earlier determination of the lease remove within 15 days all extracted minerals from the premises of the leased areas. All extracted Minerals in the said lands left over undisposed after 15 days of the termination or determination of lease shall be deemed to be the property of the Government.

(15) *Service of notice on lessee.*—The Lessee/Lessees shall at all times have at the lease area a duly accredited Superintendent or Agent to whom all notices may be given and all communications from the officers of the Department or the Government may be delivered. If there be no such agent or superintendent on the leased area, the Government shall be at liberty to treat any other person present there as such agent and to serve all notices and other documents upon the said person or in the case of there being no such other person as aforesaid then by affixing such notice or documents on some conspicuous portion of the mining block.

(16) *Supply of stones to the public.*—The Lessee/Lessees shall not unless prevented by reasonable cause e. g., collapse of the quarry etc. to the satisfaction of the Government. fail or neglect or delay to supply .....to the public at pits mouth within reasonable period of ....15 days.... (to be specified). In the event of unsatisfactory supply by the Lessee/Lessees to local public the ..... with the approval of the Director, may allow the consumers to quarry/extract with their own arrangements in the leased are outside the existing quarries or depots and the Lessee/Lessees will not be entitled to any royalty on this account but the same will be payable to the Government. This quantity will not be taken into account in the maximum quantity of ..... mention in.....

(17) *Employment of qualified Engineer etc. for the purposes of carrying out mining operation in accordance with approved practices* :—

(i) Every holder of mining lease who pays an annual dead- rent of or above Rs. 50,000/- (Rupees fifty thousand) but below Rs. 1,00,000/- (Rupees one lac) shall employ a whole time Mines Foreman.

(ii) Every holder of mining lease who pays an annual dead rent of or above Rs. 1,00,000/- (Rupees one lac) shall employ a whole time Mining Engineer:

Provided that Mining Engineer or Mines Foreman, employed by the lessee shall possess the following qualifications namely:—

(a) *Mining Engineer.*—A diploma in Mining Engineering from the Indian School of Mines and Applied Geology, Dhanbad or a degree in Mining Engineering from any recognised University

(b) *Mines Foreman:*—Diploma in Mining Engineering from any recognised Polytechnic Institute.—

Provided further that the lessee shall pay to the Mining Engineer/Mines Foreman emoluments not below what would have been admissible to them in Government service.

(15) The lessee shall inform the Government to any change in his immovable property and its value within a period of 15 days from such change.

7. *Calculation of royalty, assignment of tax and recovery of dues:*-It is hereby further agreed between the parties hereto as follows:-

(1) The royalty payable hereunder shall be calculated on the quantity despatched from or consumed within the leased area as per the rates prescribed in Schedule-I of Rajasthan Minor-Mineral Concession Rules, 1986.

(2) The Lessee/Lessees shall not assign sub-let or part with the possession of the leased area or any part thereof except in the manner permitted by rule 15 of the said Rules.

(3) Without prejudice to any other mode of recovery under any provision of this lease or any law, all amounts falling due hereunder against the lessee/ lessees may be recovered as arrears of land revenue under the law in force for such recovery.

(4) The Lessee/Lessees shall duly and regularly pay to the competent authority all taxes, cesses and local dues in respect of the leased area, said minerals or the working of the mines.

8. If in any event the orders of competent authority are revised or cancelled by the Appellate authority by State Government in pursuance of the proceeding under Chapter VI of the Rajasthan Minor Mineral Concession Rules, 1986 or under any other provision of the said rules, the Lessee/ Lessees shall not be entitled to compensation for and loss sustained by him/them in exercise of the powers and privileges conferred upon him/ them by these presents.

9. If in any event the orders of the Government or any other officer empowered under these rules are revised, reviewed or cancelled by the Appellate authority or court of law, the lessee/ lessees shall not be entitled to compensation for any loss sustained by the lessee/ lessees in exercisce of the powers and privileges conferred upon him/ them by these presents.

10. In the event of the existence of a state of war or of emergency (of which existence the Government shall be self judge and a notification to this effect in the Rajasthan Gazette shall be conclusive proof). the Government shall from time to time and all times during the said terms have the right (to be exercised by a notice in writing to the Lessee/ Lessees forthwith to take possession and control of the works, plant, machinery and premises of the Lessee/Lessees situated on the said lands or meant for use in connection with the said lands or the operations under this lease during such possession or control and the Lessee/ Lessees shall conform to and obey all direction given by or on behalf the Government regarding the use or employment of such works, plants premised and minerals;

Provided that fair compensation which shall be determined in default of agreement by the Government shall be paid to the Lessee/ Lessees for all loss or

damage sustained by him/them by reason or in consequence of the exercise of powers conferred by this clause ;

Provided also that the exercise of such powers shall not determine said term hereby granted or affect the terms and provisions of these presents further than may be necessary to give effect to the provisions of this clause.

11. (a) *Security and forfeiture thereof* :-The Government may forefit the whole or part of the amount deposited by the Lessee/Lessees as security under this lease in case the Lessee/Lessees commits/commit a breach of any covenant to be performed by the Lessee/Lessees under this lease.

(b) Whenever that said Security deposit or any part thereof any further sub deposited with the Government in replacment thereof shall be forfeited under sub-clause (1) or applied by the Government in satisfaction of any dues of the Government under this lease (which the Government is hereby authorised to do) and the Lessee/Lessees shall immediately deposit with the Government such further sum as may be sufficient with the unappropriated part thereof to bring the amount in deposit with the Government upto the sum of Rs. 2,75000/- (Rs-C

(c) The rights conferred by this clause shall be without prejudice to the right conferred on the Government by any other provision of this lease or by any law.

12. *Interpretation.*- In this lease unless the context otherwise requires:—

(a) 'Department' means the Department of Mines & Geology, Rajasthan.

(b) 'Director' means the Director of the Mines and Geology, Rajasthan for the time being and includes any officer lawfully anthoised by him to perform any of his functions.

(c) 'Government' includes an officer of the Government to whom any powers of the Government have been for the time being lawfully delegated.

13. *Renewal of Mining leases falling in Forest areas* :—The State Government may renew the mining leases falling in forest areas subject to the following conditions:—

1. The lessee will submit a map showing the existing pits within the lease boundary as also the extent to which the area has been cleared of forest by him.

2. The lessee will also submit an affidavit as also certificate from the Competent Authority either of Forest, Revenue or the Mines Department to the effect that the area deforested as stated in the affidavit and shown in the map is correct.

Special Condition:—

(A) The lessee shall keep its working restricted to the area already worked and cleared of forest till the requisite permission from the Central Government under the provisions of the Forest Conservation Act, 1980 is received for working additional area within the lease held Meanwhile lessee will be liable to pay deadrent for the whole of the lease area.

(B) The lessee shall restor the worked out area of the lease hold to the satisfaction of the Director of Mines and Geology and shall grow such trees and plantation and in such number over the land so restored as May be decided by the Director of Mines & Geology.

(B1) अनुसूची के पैरा में वर्णित खसरा 3-8166 का भिन्न क्षेत्र जो आरक्षित वन भूमि में पड़ता है के वर्ष कम से कम (अनारक्षित) होने के पश्चात अनारक्षित क्षेत्र पट्टा क्षेत्र में जोड़ा जायेगा।

T.C

(C) The Lease will be liable to be determined if the lessee violate condition A or B at any time.

18. IN WITNESS WHEREOF the indentures has been signed by the Lessee.

Signed by Lessee/Lessees

"a" by

Witness (1)

स्थिर शुल्क रुपये 11,74,360/- सालाना
05 ब. कि.मी. क्षेत्र का कब्जा लेने की तिथि तक
प्रति वर्ष रुपये स्थिर शुल्क का 1/4 भाग
(सम्पन्न खान एवं खनिज सूची)

खनि अभियन्ता
Signature
By Order of and on behalf of the
Governor of Rajasthan.
(Designation)

(Plan with boundary marks of demarcation report to be annexed)

T.C.

खनि अभियन्ता
कृत प्रबन्ध, बून्दी

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ANNEXURE - XIII

कार्यालय उप वन संरक्षक (वन्यजीव) मुकन्दरा राष्ट्रीय उद्यान कोटा

Phone No. 0744- 2330823 E-mail :- dcfmnp.kot.forest@rajasthan.gov.in

क्रमांक :एफ( )तक0/उवस/मु.रा.उ./2016–17/ 4782 दिनांक : 3/5/17

निमित:–

अतिरिक्त प्रधान मुख्य वन संरक्षक
एवं मुख्य वन्यजीव प्रतिपालक,
राजस्थान, जयपुर

विषय :– Sand stone mine with production capacity of existing 80000 TPA (ROM) after expansion 25000 TPA (ROM) of M/s Kanhaiyalal Rameshwar Das located at village Dhaneshwar & Sutara Tehsil and district, Bundi, Rajasthan (MLA : 618.34 Ha) tor regarding.

प्रसंग :– आपका पत्र क्रमांक 3594 दिनांक 26.04.2017 एवं इस कार्यालय का पत्रांक 1071 दिनांक 16.02.2017

महोदय,

उपरोक्त विषयान्तर्गत निवेदन है कि उक्त माईन्स मुकन्दरा हिल्स टाईगर रिजर्व/जवाहर सागर अभ्यारण्य की सीमा से 1 कि0मी0 की दूरी के अन्दर स्थित थी। जिसका संयुक्त सर्वे कराकर मुकन्दरा हिल्स टाईगर रिजर्व की सीमा से खनन क्षेत्र को 1 किमी दूर नक्शे पर मार्क कर, जिसके निर्देशांक **A5-** N 25^0 03' 45.9" E 75^0 35' 53.7" **N1-** N 25^0 03' 56.5" E 75^0 35' 06.1" **O2-** N 25^0 03' 56.5" E 75^0 34' 56.0" **P1-** N 25^0 03' 54.2" E 75^0 34' 44.6" **Q1-** N 25^0 03' 56.8" E 75^0 34' 33.5" भिजवा दी गई है। उक्त माईन्स 10 कि0मी0 में स्थित होने के कारण एन.बी.डब्ल्यू.एल. (नेशनल बोर्ड ऑफ वाईल्ड लाईफ) की पूर्वानुमति लिया जाना आवश्यक है। ऑनलाईन एप्लीकेशन आवेदक द्वारा सबमिट की जाकर इस कार्यालय में प्राप्त हो चुकी है, जो प्रक्रियाधीन है।

आवेदक द्वारा Enkay Enviro Services Pvt. Ltd. Jaipur द्वारा तैयार की गई बायो डायवर्सिटी स्टेटस एवं शेड्यूल–I के वन्य जीवों के संरक्षण हेतु कन्जर्वेशन प्लान बनाकर प्रस्तुत किया गया। प्रस्तुत प्लान का अवलोकन कर उसमें बघेरा तथा भालू के संरक्षण हेतु आवश्यक संशोधन कराकर प्लान तैयार कराया गया। संशोधन उपरान्त तैयार कर प्रस्तुत किये गये कन्जर्वेशन प्लान एवं बायोडायवर्सिटी स्टेटस रिपोर्ट को प्रमाणित (Authenticate) किया गया। प्रस्तुत प्लान को प्रमाणित कर दो प्रतियों में संलग्न कर आवश्यक कार्यवाही हेतु सादर प्रेषित है ।

संलग्न :– उपरोक्तानुसार।

भवदीय

(एस0 आर0 यादव)
उप वन संरक्षक (वन्यजीव)
मुकन्दरा राष्ट्रीय उद्यान कोटा

क्रमांक :एफ( ) तक0/उवस/मु.रा.उ./2017–18/ दिनांक :

प्रतिलिपि :– मुख्य वन संरक्षक, वन्यजीव, कोटा को सूचनार्थ एवं एवं आवश्यक कार्यवाही हेतु प्रेषित है।

(एस0 आर0 यादव)
उप वन संरक्षक (वन्यजीव)
मुकन्दरा राष्ट्रीय उद्यान कोटा

BIODIVERSITY STATUS OF CORE (PROJECT SITE) AND BUFFER ZONE (10 KM RADIUS) AND CONSERVATION PLAN FOR INDIAN GRAY MONGOOSE *(Herpestes edwardsii)*, INDIAN PEAFOWL (*Pavo cristatus*), *SLOTH* BEAR(*Melursus ursinus*) & PANTHER *(Panthera pardus)*

FOR M/s KANHAIYALAL RAMESHWAR DAS

PROJECT LOCATION

VILLAGE(S) – DHANESHWAR & SUTARA,

TEHSIL & DISTRICT – BUNDI (RAJ.).

Area: - 490.5509 Ha. ; ML No.:- 47/ 94;

Lease Validity: - 14.09.1994 to 14.09.2024 (30 Years)

PREPARED BY

ENKAY ENVIRO SERVICES PVT. LTD., JAIPUR

Accredited EIA Consultant Organization by NABET, QCI, New Delhi at S. No. 42 in MoEF&CC List of Accredited EIA Consultant Organizations (as on April, 2017).

Validity: - 13.12.2014 to 12.12.2017.

Corporate Office: - # 92 Heera Nagar - A, Near Shalimar Bagh, Ajmer Road, Jaipur (Raj.). - 302 021

Phone: - 0141-2354997, 2353996

Email: - info@enkayenviro.com, Website: - www.enkayenviro.com

BIODIVERSITY STATUS OF CORE (PROJECT SITE) AND BUFFER ZONE (10 KM RADIUS) AND CONSERVATION PLAN FOR INDIAN GRAY MONGOOSE *(Herpestes edwardsii)*, INDIAN PEAFOWL (*Pavo cristatus*), *SLOTH* BEAR*(Melursus ursinus)* & PANTHER *(Panthera pardus)*

FOR M/s KANHAIYALAL RAMESHWAR DAS

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Phone: - 0141-2354997, 2353996

Email: - info@enkayenviro.com, Website: - www.enkayenviro.com

CONTENT

****

BIODIVERSITY STUDY

1.1 INTRODUCTION

S. No.	Particulars	Details
1.	Name of the Project	Sandstone Mine
2.	Location	Village(s) - Dhaneshwar and Sutara, Tehsil - Bundi, Rajasthan
3.	Lease Area	490.5509 ha.
4.	Production	Existing - 80,000 TPA; Proposed - 1,70,000 TPA; After Expansion - 2,50,000 TPA
5.	Land Type	Govt. Waste land – 161.2109 Ha; Private Khatedari Land – 150.0 Ha; Diversified Forest land – 104.34 ha. & Grazing/ Pasture Land – 75.0 Ha.
6.	Latitude & Longitude	25°02' 53.10" to 25°04' 40.78" N; 75°32' 29.21"E to 75°36' 01.12" E
7.	Toposheet No.	45 O/12
8.	Project Cost	Existing - Rs. 3.50 Crore; Proposed - Rs. 4.50 Crore; Total - Rs. 8.0 Crore
	Eco-sensitive Zones	Jawahar Sagar Wildlife Sanctuary/ Mukundra Hills Tiger Reserve having common boundary is at a distance of 1.0 km from mine boundary. As per Hon'ble Supreme Court directives, lessee will not undertake any mining activity in the 1.0 Km radius of the Sanctuary. The lease lies within 10 km of Jawahar Sagar Wildlife Sanctuary/ Mukundra Hills Tiger Reserve. Therefore user agency have to take prior wildlife clearance from NBWL.
9.	Reserved/ Protected Forest	

S. No.	Forests	Distance (Km) (From Lease Boundary)	Direction
1.	Dhaneshwar Reserved Forest	0.505	NNE
2.	Dhaneshwar Reserved Forest	2.25	E
3.	Dasaliya B Reserved Forest	0.00	NW &SSW

1.1 BIOLOGICAL ENVIRONMENT

We cannot recreate a species if it is extinct. So, biological/ ecological impact assessment is an integral and important component of environmental impact assessment (EIA). Baseline information/ data on the flora and fauna of the particular area are important form for inferring the impact of a proposed expansion mining project. The ultimate aim of an ecological assessment is to avoid or minimize the impacts of a proposed development. They are therefore related to the aim of Nature Conservation which, in broad terms, is to maintain and where possible increase, biodiversity.

"Biomap" of the particular area is very important to understand the ecological setting of that area and to design the area specific conservation measures. So, ecological understanding is an integral and important component of the developmental projects. Environmental impact assessments have become an integral part of development projects in India ever since 1994, to formulate policies and guidelines for environmentally sound economic development. Proper assessment of biological environment and compilation of its taxonomical data is essential for the impact prediction. The present work describes a present status of floral and faunal components occur within the study area and also identification of threatened/ rare species if any. The present work also envisaged to assess the likely impacts of project activities and streamline the recommendations to assist minimizing the impact on biodiversity.

1.2 PERIOD OF THE STUDY AND STUDY AREA

Baseline study, for the assessment of the floral and faunal biodiversity of the terrestrial environment of the study area, with in 10 km radius from the mine site has been conducted during October, November and December' 2015 (Post-monsoon season).

1.3 METHODOLOGY ADOPTED FOR BIODIVERSITY STUDY

The main objective of survey was to describe the floral and faunal components of the study area. The sampling plots for floral inventory were selected randomly in the covering various habitats within the 10km radius from the project site. Desktop literature review was also conducted to identify the representative spectrum of threatened species, population and ecological communities listed by IUCN, WCMC, ZSI, BSI and Indian Wild Life Protection Act, 1972.

The objectives of the present study were as follows:-

1. To identify the floral and faunal diversity;
2. To identify the endangered species of flora and fauna, if any
3. To prepare conservation plan for Schedule I, if any
4. To mark eco-sensitive areas in the study area, if any.

1.4 FLORAL STATUS

Floral status was assessed in different habitat types of the mining study area. Quantitative data was collected using standard methods of Circular plot method followed by Mueller-Dombois and Ellenberg 1967, Kershaw, 1973. Status of tree, shrub, was quantified using

circular plots of sizes of 10 m radius. Annuals like herbs and grass were quantified within 1x1 plots (grass, herbs and others) plotted randomly within the every circular sample plots.

1.5 FAUNAL STATUS

Herpetofauna: - Status of herpetofauna was assessed using Intensive time Constrained search Method covering different micro habitats (Welsh, 1987) within the sample plots.

Birds: - Avifaunal status was assessed both in terrestrial and aquatic habitats. Total count or flock count method was adopted to assess the status of aquatic birds (Sridharan, 1989 and Bhupathy, 1991). Point count method was used to assess the status of terrestrial birds (Bibby et al., 1992 and Hutto et al., 1986) at every sample points, covering 50 m radius plots.

Mammals: - Status and distribution of different mammal species was quantified using, Direct count along the Line transect (Burnham et al. 1980) and indirect evidences within the circular plots of 15 m radius (Rodgers 1991, Sale and Berkmuller, 1988). Indirect evidences like, Pellet, dung, tracks and other signs were enumerated within the 15 m. radius plots for nocturnal species (Daniels, 1992).

Presence of different faunal species was also confirmed by interviewing the local people with pectoral colored field guide.

Fig. 1.1: Photographs during field survey

1.6 SAMPLING DETAILS

Sample intensity in different habitat types to assess the floral and faunal status in the project area has been tabulated in the following table:-

Table 1.1: Sampling Details

Components		Core Zone (Project Site)	Buffer Zone				SA
			RH	*WB*	*AG*	*FA*	
Plants	*Tree, Shrubs*	04	8	5	15	20	48
	Herbs, Grasses	04	8	5	15	20	48
Herpetofauna		04	8	5	15	15	43
Birds	Terrestrial	04	8	5	15	15	43
	Aquatic	--	--	5	--	03	8
Mammals		04	8	5	15	15	43
RH-Reverine habitat, WB- Water Body, AH- Agriculture Hedges, , FA- Forest Area,							

1.7 DATA ANALYSIS

Calculations for various parameters have been performed to understand phytosociology of the project site. Following formulas were used to perform various statistical calculations,

The data collected in the field was analyzed for secondary parameters such as density, frequency and abundance following standard phyto-sociological methods. Shannon-Wiener diversity index (Shannon and Wiener, 1963) was calculated for all life forms as follows:-

Table 1.2 : Estimation of Phyto-Sociological Parameters	
1	**Frequency (%)** = (No. of quadrats of occurrence of the species X 100) / Total No. of quadrats sampled
2	***Density** = Total No. of individuals of the species / Total No. of quadrats sampled
3	**Abundance** = Total No. of individuals of the species / No. of quadrats of Occurrence
4	**Relative Frequency** = (Frequency of the given species X 100) / Sum of all frequencies
5	**Relative Density** = (Density of the given species X 100) / Sum of all densities
6	**Relative Abundance** = (Abundance of species X 100) / Sum of all abundances
7	**Basal Area** = $(GBH)^2 / 4\Pi$
8	**Dominance** = Total Basal Area / Total area sampled
9	**Relative Dominance** = (Dominance of given species X 100) / Dominance of all species
10	**Important Value Index (I.V.I.)** = Relative Density + Relative Frequency + Relative Dominance
Note: *Density refers to the number of individuals per unit area of a site.	

1.8 STATISTICAL ANALYSIS

Shannon-Wiener diversity index (Shannon and Wiener, 1963) was calculated for all life forms following:-

Shannon- Wiener Information Function: $D = -\Sigma\, pi \ln pi$

Where: - i = an index for the number of species sampled, $p_i = n_i / N$ = percentage of species i in the entire sample (N) of individuals, and ln = natural log. Multiply the percentage (or proportion) of each species in the sample times the natural log of that same value, sum the products across all species, and then multiply by minus 1.

1.9 HABITATS OF THE STUDY AREA

Study area includes forest area and Agriculture. Landscape of the region is mainly dominated by Forest (Northern Tropical dry deciduas forest, Northern dry mixed deciduous forest- Jawahar Sagar Wildlife Sanctuary), except for part of agriculture fields, built-up areas and mining area.

1.10 BIODIVERSITY OF THE STUDY AREA

1.10.1 PROJECT SITE (CORE ZONE – CZ)

Existing mine site encompasses mix vegetation, mainly dominated by the *Prosopis juliflora* and other common herb, shrub and grass species. 5 species shrub, 12 species of herb and 3 species of grass were recorded in the core zone during the field survey. The dominant species among the shrubs was Vilayati Babool (*Prosopis juliflora)* and Kantkeri (*Solanum xanthocarpum*) was the dominant herb.

For the greenbelt development in existing mine site the proponent has planted many fruit trees, the details of the vegetation in the core zone (existing mine site are given in the following table.

Table 1.3: Flora Reported from the Core Zone (EXISTING MINE SITE)

S. No.	Common Name	Species Name	Family
		Tree	
1.	Neem	*Azadirachta indica*	Meliaceae
2.	Siris	*Albizia lebbeck*	Fabaceae
3.	Shisham	*Dalbergia sissoo*	Fabaceae
4.	Anar	*Punica granatum*	Lythraceae
5.	Amrood	*Psidium guajava*	Myrtaceae
6.	Papita	*Carica papaya*	Caricaceae
7.	Chiku	*Manilkara zapota*	Sapotaceae
8.	Aam	*Mangifera indica*	Anacardiaceae
9.	Sitafal	*Annona squamosa*	Annonaceae
		Shrubs	
1.	Aak	*Calotropis gigantea*	Asclepiadaceae
2.	Vilayati Babool	*Prosopis juliflora*	Fabaceae
3.	Dhatura	*Datura stramonium*	Solanaceae
4.	Raimunia	*Lantana camara*	Verbenaceae
5.	Tarwar	*Cassia auriculata*	Caesalpinioideae
		Herbs	
1.	Latjeera	*Achyranthes aspera*	Amaranthaceae
2.	Jangli chaulai	*Amaranthus spinosus*	Amaranthaceae
3.	Satyanasi	*Argemone mexicana*	Papaveraceae
4.	Aak	*Calotropis prosera*	Asclepiadaceae
5.	Doob Ghas	*Cynodon dactylon*	Poaceae
6.	Oontkata	*Echinops echinatus*	Asteraceae
7.	Badi Dudhi	*Euphorbia hirta*	Euphorbiaceae
8.	Van gobi, Jangali gobi	*Launaea procumbens*	Asteraceae

9.	Gajar Ghas	*Parthenium hysterophorus*	Asteraceae (Compositae)
10.	Kantkeri	*Solanum xanthocarpum*	Solanaceae
11.	Sarphonka	*Tephrosia purpurea*	Fabaceae
12.	Gokhru	*Tribulus terrestris*	Zygophyllaceae
Grass			
1.	Doob ghas	*Cynodon dactylon*	Poaceae
2.	Sheda Grass	*Dichanthium annulatum*	Poaceae
3.	Makra	*Dactyloctenium aegyptium*	Poaceae

Table 1.4: Phyto-Sociology of Core Zone (Shrub)

Vernacular Name	Scientific Name	#	@	Total no of individual	F	D	A	RF	RD	RA	IVI
Aak	*Calotropis procera*	4	3	7	75	1.75	2.33	25.00	18.42	14.51	57.93
Vilayati Babool	*Prosopis juliflora*	4	4	11	100	2.75	2.75	33.33	28.95	17.10	79.38
Dhatura	*Datura stramonium*	4	2	7	50	1.75	3.50	16.67	18.42	21.77	56.85
Raimunia	*Lantana camara*	4	2	11	50	2.75	5.50	16.67	28.95	34.20	79.82
Tarwar	*Cassia auriculata*	4	1	2	25	0.5	2.00	8.33	5.26	12.44	26.03
					300	**9.50**	**16.08**	**100.00**	**100.00**	**100.0**	**300.0**

#: Total No of quadrate studied, @: Total no of quadrate in which species occurred, F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Total of 05 shrub species belonging to 05 families were recorded in the core zone (existing mine site) during the survey. Shrub species commonly seen in the study area were *Lantana camara, Prosopis juliflora, Calotropis procera and Cassia auriculata.* The highest IVI for shrub at study area was recorded for *Lantana camara* (79.82), followed by *Prosopis juliflora* (79.38), *Calotropis procera* (57.93) and *Datura stramonium* (56.85). Shannon-Wiener diversity index (H') for shrub was 1.54.

1.10.2 BUFFER ZONE

Herb & Grasses

Total of 39 herb and grass species were recorded in the study area during the survey. Herb species commonly seen in the study area were *Euphorbia hirta, Amaranthus spinosus,*

Tephrosia purpurea, and *Achyranthes aspera.* The highest IVI for herb at study area was recorded for *Euphorbia hirta* (12.65), *Amaranthus spinosus* (11.05), followed by *Tridax procumbens* (10.89) and *Achyranthes aspera* (10.88), Shannon-Wiener diversity index (H') for herb and grass was 3.20.

Table 1.5: Important Value Index (IVI) for herb and grass species in the Buffer Zone

Scientific Name	#	@	F	D	A	RF	RD	RA	IVI
Acalypha indica	51	73	72.86	1.04	1.43	5.00	3.48	1.72	10.20
Achyranthes aspera	25	88	35.71	1.26	3.52	2.45	4.20	4.24	10.88
Adiantum raddianum	12	26	17.14	0.37	2.17	1.18	1.24	2.61	5.02
Aerva persica	9	23	12.86	0.33	2.56	0.88	1.10	3.08	5.05
Amaranthus spinosus	39	92	55.71	1.31	2.36	3.82	4.39	2.84	11.05
Amaranthus viridis	26	77	37.14	1.10	2.96	2.55	3.67	3.56	9.78
Apluda mutica	7	19	10.00	0.27	2.71	0.69	0.91	3.27	4.86
Argemone mexicana	33	63	47.14	0.90	1.91	3.23	3.01	2.30	8.54
Blumea lacera	21	45	30.00	0.64	2.14	2.06	2.15	2.58	6.78
Cassia occidentalis	28	52	40.00	0.74	1.86	2.74	2.48	2.24	7.46
Cassia tora	36	49	51.43	0.70	1.36	3.53	2.34	1.64	7.50
Cenchrus ciliarias	15	35	21.43	0.50	2.33	1.47	1.67	2.81	5.95
Cleome viscosa	18	47	25.71	0.67	2.61	1.76	2.24	3.14	7.15
Corchorus tridens	34	82	48.57	1.17	2.41	3.33	3.91	2.90	10.15
Croton bonplandianum	22	37	31.43	0.53	1.68	2.15	1.77	2.02	5.94
Echinops echinatus	23	54	32.86	0.77	2.35	2.25	2.58	2.83	7.65
Eragrostis ciliaris	22	33	31.43	0.47	1.50	2.15	1.57	1.81	5.53
Euphorbia hirta	41	112	58.57	1.60	2.73	4.02	5.34	3.29	12.65
Euphorbia milli	7	16	10.00	0.23	2.29	0.69	0.76	2.75	4.20
Euphorbia neriifolia	33	71	47.14	1.01	2.15	3.23	3.39	2.59	9.21
Indigofera cordifolia	36	81	51.43	1.16	2.25	3.53	3.86	2.71	10.10
Launaea procumbens	41	53	58.57	0.76	1.29	4.02	2.53	1.56	8.10
Ocimum americanum	29	47	41.43	0.67	1.62	2.84	2.24	1.95	7.03
Parthenium hysterophorus	35	77	50.00	1.10	2.20	3.43	3.67	2.65	9.75
Peristrophe bicalyculata	17	41	24.29	0.59	2.41	1.67	1.96	2.90	6.52
Phyla nodiflora	21	34	30.00	0.49	1.62	2.06	1.62	1.95	5.63
Phyllanthus fraternus	41	79	58.57	1.13	1.93	4.02	3.77	2.32	10.10
Physalis minima	12	19	17.14	0.27	1.58	1.18	0.91	1.91	3.99
Pteridium aquilinum	9	21	12.86	0.30	2.33	0.88	1.00	2.81	4.69
Sida acuta	24	33	34.29	0.47	1.38	2.35	1.57	1.65	5.58

Sida cordifolia	28	53	40.00	0.76	1.89	2.74	2.53	2.28	7.55
Solanum surattense	23	49	32.86	0.70	2.13	2.25	2.34	2.56	7.15
Solanum xanthocarpum	31	52	44.29	0.74	1.68	3.04	2.48	2.02	7.54
Sorghum halepense	13	57	18.57	0.81	4.38	1.27	2.72	5.28	9.27
Tephrosia purpurea	44	93	62.86	1.33	2.11	4.31	4.44	2.54	11.29
Tephrosia villosa	27	59	38.57	0.84	2.19	2.64	2.81	2.63	8.09
Tribulus terrestris	24	37	34.29	0.53	1.54	2.35	1.77	1.86	5.97
Tridax procumbens	45	87	64.29	1.24	1.93	4.41	4.15	2.33	10.89
Xanthium strumarium	19	30	27.14	0.43	1.58	1.86	1.43	1.90	5.19
			1458.57	29.94	83.08	100.00	100.00	100.00	300.00

#: Total no of quadrate in which species occurred, @:Total No of individual, , F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Shrubs

Total of 26 shrub species were recorded in the buffer zone of the study during the survey. Shrub species commonly seen in buffer zone of the study area were *Lantana camara, Prosopis juliflora, Cassia auriculata, Ipomoea carnea and Ricinus communis.* The highest IVI for shrub at study area was recorded for *Lantana camara* (28.07), followed by *Parthenium hysterophorus* (24.30), *Calotropis prosera* (22.71) and *Prosopis juliflora* (19.61). Shannon-Wiener diversity index (H') for shrub was 2.9.

Table 1.6 : Important value Index (IVI) for Shrub species in the buffer zone

Scientific Name	#	@	F	D	A	RF	RD	RA	IVI
Adhatoda vasica	17	36	24.29	0.51	2.12	3.51	3.69	5.30	12.51
Calotropis prosera	41	87	58.57	1.24	2.12	8.47	8.92	5.31	22.71
Capparis decidua	7	12	10.00	0.17	1.71	1.45	1.23	4.29	6.97
Carissa congesta	7	9	10.00	0.13	1.29	1.45	0.92	3.22	5.59
Cassia auriculata	36	81	51.43	1.16	2.25	7.44	8.31	5.63	21.38
Datura stramonium	23	35	32.86	0.50	1.52	4.75	3.59	3.81	12.15
Dhatura metal	29	46	41.43	0.66	1.59	5.99	4.72	3.97	14.68
Grewia tenax	16	21	22.86	0.30	1.31	3.31	2.15	3.29	8.75
Prosopis juliflora	28	72	40.00	1.03	2.57	5.79	7.38	6.44	19.61
Lantana camara	52	115	74.29	1.64	2.21	10.74	11.79	5.54	28.07
Mimosa hamata	27	39	38.57	0.56	1.44	5.58	4.00	3.62	13.19
Nerium oleander	19	42	27.14	0.60	2.21	3.93	4.31	5.53	13.77
Nyctanthes arbor-tristis	12	25	17.14	0.36	2.08	2.48	2.56	5.22	10.26
Opuntia dillenii	3	10	4.29	0.14	3.33	0.62	1.03	8.35	9.99

Parthenium hysterophorus	36	98	51.43	1.40	2.72	7.44	10.05	6.82	24.30
Sesbania sesban	28	38	40.00	0.54	1.36	5.79	3.90	3.40	13.08
Thevetia peruviana	24	41	34.29	0.59	1.71	4.96	4.20	4.28	13.44
Vitex negundo	19	40	27.14	0.57	2.11	3.93	4.10	5.27	13.30
Zizyphus nummularia	31	57	44.29	0.81	1.84	6.40	5.85	4.60	16.85
Ricinus communis	29	71	41.43	1.01	2.45	5.99	7.28	6.13	19.40
			691.43	13.93	39.94	100.0	100.0	100.0	300.00

#: Total no of quadrate in which species occurred, @:Total No of individual, , F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Table 1.7 : Important value Index (IVI) for tree species in the Buffer Zone

Scientific Name	#	@	F	D	A	RF	RD	RA	IVI
Acacia catechu	31	42	44.29	0.60	1.35	3.98	3.36	1.91	9.25
Acacia leucopholea	14	27	20.00	0.39	1.93	1.80	2.16	2.71	6.67
Acacia nilotica	29	33	41.43	0.47	1.14	3.72	2.64	1.60	7.97
Acacia senegal	15	22	21.43	0.31	1.47	1.93	1.76	2.06	5.75
Aegle marmelos	9	13	12.86	0.19	1.44	1.16	1.04	2.03	4.23
Ailanthus excelsa	12	33	17.14	0.47	2.75	1.54	2.64	3.87	8.05
Albizia lebbeck	12	23	17.14	0.33	1.92	1.54	1.84	2.70	6.08
Annona squamosa	14	27	20.00	0.39	1.93	1.80	2.16	2.71	6.67
Anogeissus pendula	22	31	31.43	0.44	1.41	2.82	2.48	1.98	7.29
Anogiessis latifolia	26	33	37.14	0.47	1.27	3.34	2.64	1.79	7.76
Azadirachta indica	11	19	15.71	0.27	1.73	1.41	1.52	2.43	5.36
Boswellia serrata	9	9	12.86	0.13	1.00	1.16	0.72	1.41	3.28
Butea monosperma	42	69	60.00	0.99	1.64	5.39	5.52	2.31	13.23
Carissa congesta	12	22	17.14	0.31	1.83	1.54	1.76	2.58	5.88
Cassia fistula	39	67	55.71	0.96	1.72	5.01	5.36	2.42	12.79
Cassia siamea	29	58	41.43	0.83	2.00	3.72	4.64	2.81	11.18
Dalbergia sissoo	13	22	18.57	0.31	1.69	1.67	1.76	2.38	5.81
Delonix regia	5	7	7.14	0.10	1.40	0.64	0.56	1.97	3.17
Dichrostachys cinerea	7	11	10.00	0.16	1.57	0.90	0.88	2.21	3.99
Diospyros melanoxylon	39	58	55.71	0.83	1.49	5.01	4.64	2.09	11.74
Erythrina indica	4	4	5.71	0.06	1.00	0.51	0.32	1.41	2.24
Feronia limonia	4	6	5.71	0.09	1.50	0.51	0.48	2.11	3.10
Ficus benghalensis	11	14	15.71	0.20	1.27	1.41	1.12	1.79	4.32
Ficus glomerata	9	10	12.86	0.14	1.11	1.16	0.80	1.56	3.52

Ficus religiosa	9	11	12.86	0.16	1.22	1.16	0.88	1.72	3.76
Flacourtia indica	2	3	2.86	0.04	1.50	0.26	0.24	2.11	2.61
Holoptelea integrifolia	14	19	20.00	0.27	1.36	1.80	1.52	1.91	5.23
Lannea coromandelica	36	52	51.43	0.74	1.44	4.62	4.16	2.03	10.82
Maytenus emarginata	11	28	15.71	0.40	2.55	1.41	2.24	3.58	7.23
Moringa oleifera	12	21	17.14	0.30	1.75	1.54	1.68	2.46	5.68
Morus alba	17	24	24.29	0.34	1.41	2.18	1.92	1.99	6.09
Phoenix sylvestris	14	23	20.00	0.33	1.64	1.80	1.84	2.31	5.95
Pithecellobium dulce	24	36	34.29	0.51	1.50	3.08	2.88	2.11	8.07
Pongamia pinnata	33	56	47.14	0.80	1.70	4.24	4.48	2.39	11.11
Prosopis cineraria	7	18	10.00	0.26	2.57	0.90	1.44	3.62	5.96
Prosopis juliflora	37	79	52.86	1.13	2.14	4.75	6.33	3.00	14.08
Salvadora persica	7	19	10.00	0.27	2.71	0.90	1.52	3.82	6.24
Sterculia urens	12	19	17.14	0.27	1.58	1.54	1.52	2.23	5.29
Syzygium cumini	31	42	44.29	0.60	1.35	3.98	3.36	1.91	9.25
Tamarindus indica	7	10	10.00	0.14	1.43	0.90	0.80	2.01	3.71
Terminalia bellirica	5	7	7.14	0.10	1.40	0.64	0.56	1.97	3.17
Terminalia arjuna	21	26	30.00	0.37	1.24	2.70	2.08	1.74	6.52
Wrightia tinctoria	34	61	48.57	0.87	1.79	4.36	4.88	2.52	11.77
Ziziphus mauritiana	28	35	40.00	0.50	1.25	3.59	2.80	1.76	8.15
		1249	**1112.86**	**17.843**	**71.10**	**100.00**	**100.00**	**100.00**	**300.00**

#: Total no of quadrate in which species occurred, @:Total No of individual, , F: Frequency (%), D: Density, A: Abundance, RF: Relative Frequency, RD: Relative Density, RA: Relative Abundance, IVI: Important Value Index

Trees

Total of 51 tree species were recorded in the buffer zone of the study during the survey. Tree species commonly seen in buffer zone of the study area were *Butea monosperma, Prosopis juliflora, Cassia fistula, Diospyros melanoxylon, Pongamia pinnata, Lannea coromandelica.* The highest IVI for shrub at study area was recorded for *Prosopis juliflora* (14.08) and *Butea monosperma* (13.23), followed by *Cassia fistula* (12.79), *Diospyros melanoxylon* (11.74) and *Lannea coromandelica* (10.82). Shannon-Wiener diversity index (H') for tree was 2.9.

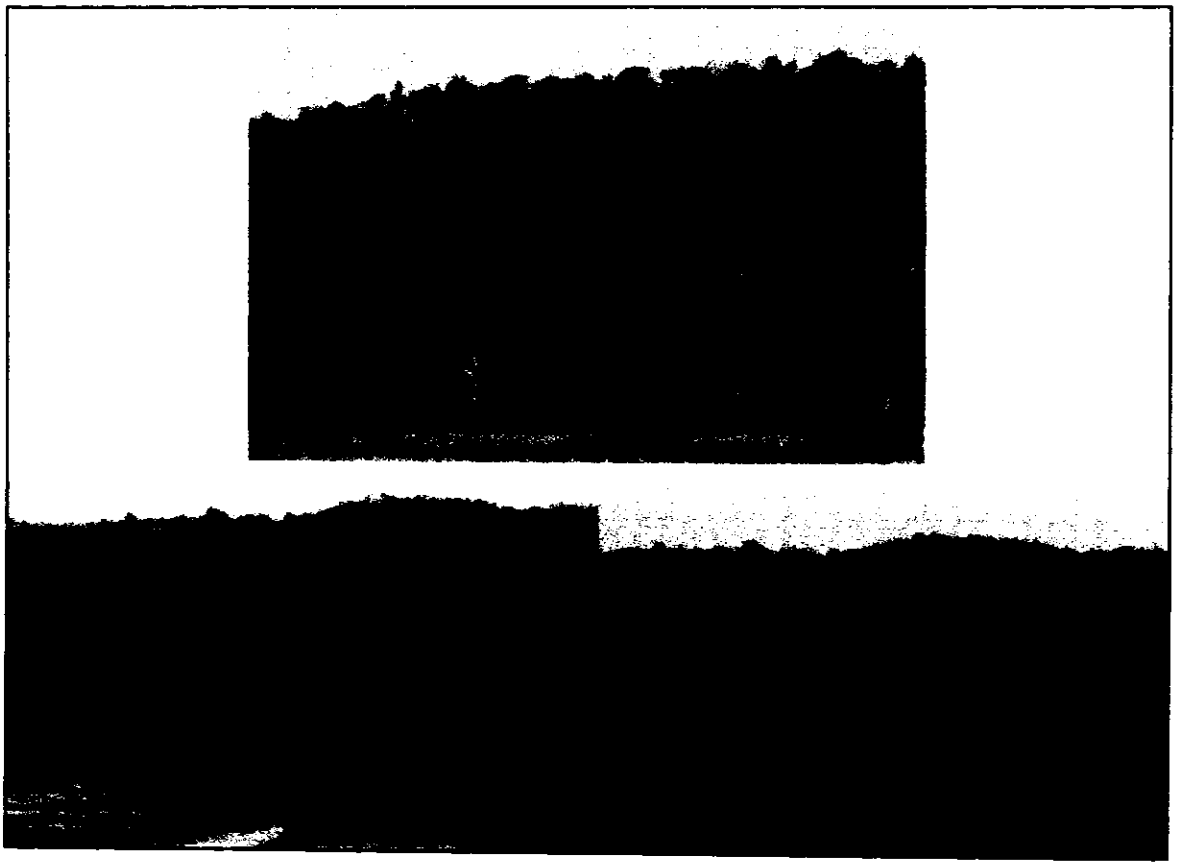


Fig. 1.2: Northern Tropical dry deciduas forest, Northern dry mixed deciduous forest in the study area

Table 1.8: Tree Species Observed in the forest area of buffer zone

S. No.	Vernacular Name	Scientific Name	Family
1.	Kadami, Haldu	*Adina cordifolia or Haldina cordifolia*	Rubiaceae
2.	Kaim	*Mitragyna parvifolia*	Rubiaceae
3.	Kadamb	*Anthocephalus cadamba*	Rubiaceae
4.	Mahua	*Madhuca longifolia*	Sapotaceae
5.	Kulu, Gum Karaya	*Sterculia urens*	Malvaceae
6.	Dhura, Dhau	*Anogeissus latifolia*	Combretaceae
7.	Salar, Salai	*Boswellia serrata*	Burseraceae
8.	Tendu	*Diospyros melanoxylon*	Ebenaceae
9.	Khirni	*Manilkara hexandra*	Sapotaceae
10.	Karanj	*Pongamia pinnata*	Fabaceae
11.	Bahera	*Terminalia bellirica*	Combretaceae
12.	Harad	*Terminalia chebula*	Combretaceae
13.	Amla	*Phyllanthus emblica*	Phyllanthaceae
14.	Arjun	*Terminalia arjuna*	Combretaceae
15.	Jhingan, Mohin	*Lannea coromandelica*	Anacardiaceae

1.10.3 FAUNAL DIVERSITY OF THE STUDY AREA

Herpetofauna

Core Zone

Table 1.9: Herpetofauna Reported from the Core Zone Area					
1	Oriental Garden Lizard	*Calotes versicolor*	Agamidae	-	LC
2	Bronze Grass Skink	*Eutropis macularia*	Scincidae	-	LRnt
3	Common Keeled Grass Skink	Mabuya carinata	Scincidae	-	LRnt

Buffer zone

Overall 7 species from 7 families were inventoried on the basis of direct and secondary sources. All species of turtles, one species of lizard and all snake species (Indian Star Tortoise) are included in the list based on the secondary sources (interviews of the local people). Details of the species reported from the study area are given below:-

Table 1.10 : Herpetofauna Reported from the Buffer Zone Area					
S. No. & Family	Species Name	Common English Name	Conservation Status		
			IUCN	CITES	IWPA
TOADS/ FROGS					
1 Bufonidae					
1	*Bufo melanostictus*	Common Indian Toad	VU	--	--
2. *Ranidae*					
2	*Hoplobatrachus tigerinus*	Indian Bull Frog	VU	App. II	Schedule-IV
TORTOISE / TURTLE					
3. *Testudinidae*					
3	*Geochelone elegans* *	Indian Star Tortoise	VU	App. II	--
LIZARDS					
4. *Gekkonidae*					
4	*Hemidactylus brookii.*	Spotted Indian House Gecko	LRlc	--	--
5	*Hemidactylus flaviviridis*	Yellow Bellied House Gecko	LRlc	--	--
5. *Agamidae*					
6	*Calotes versicolor*	Indian Garden Lizard	LRlc	--	--
6. *Scincidae*					
7	*Mabuya carinata*	Common Keeled Grass Skink	LRnt	--	--

Avifauna

Core zone

Only some common bird species like Common crow, Red-vented bulbul, Common myna, Rock Pigeon and Indian robin were sighted from the core zone.

Buffer zone

Totally 67 species of the birds belonging to 36 families were recorded from the buffer zone of the study area. A Schedule I species, *Pavo cristatus* (Indian peafowl) was reported from the hills of Amba Rani Forest Block and other habitats located close vicinity of the human habitation / villages. For the same, conservation plan is given at the end of this chapter. All the bird species reported from the study area enlisted in the following table:-

Table 1.11 : Avifauna Reported from the Buffer Zone of the Study Area

Family S. No.	Species S. No.	Family & Species	Common English Name	MGS	IWPA Schedule
1	**Phasianidae**				
	1.	*Francolinus pondicerisnus*	Grey Francolin	R	IV
	2.	*Pavo cristatus*	Indian Peafowl	R	I
2	**Picidae**				
	3.	*Dinopium benghalense*	Common Flamebacked Woodpecker	R	IV
3	**Upupidae**				
	4.	*Upupa epops*	Common Hoopoe	WV	IV
4	**Coraciidae**				
	5.	*Coracias benghalensis*	Indian Roller	R	IV
5	**Alcedinidae**				
	6.	*Alcedo hercules*	Common Kingfisher	R	IV
6	**Dacelonidae**				
	7.	*Halcyon smyrnensis*	White-throated Kingfisher	R	IV
7	**Meropidae**				
	8.	*Merops orientalis*	Green Bee-eater	R	IV
8	**Cuculidae**				
	9.	*Cuculus micropterus*	Indian Cuckoo	SV	IV
	10.	*Surniculus lugubris*	Drongo Cuckoo	SV	IV
	11.	*Eudynamys scolopacea*	Asian Koel	R	IV
9	**Centropodidae**				
	12.	*Centropus sinensis*	Greater Coucal	R	IV
10	**Psittacidae**				
	13.	*Psittacula cyanocephala*	Plum-headed Parakeet	R	IV
	14.	*Psittacula eupatria*	Alexandrine Parakeet	R	IV
	15.	*Psittacula krameri*	Rose-ringed Parakeet	R	IV
11	**Caprimulgidae**				
	16.	*Caprimulgus asiaticus*	Indian Nightjar	R	IV

12	**Columbidae**				
	17.	*Columba livia*	Rock Pigeon	R	IV
	18.	*Streptopelia senegalensis*	Laughing Dove	R	IV
	19.	*Streptopelia tranquebarica*	Red-collared Dove	R	IV
	20.	*Streptopelia decaocto*	Eurasian Collared Dove	R	IV
13	**Rallidae**				
	21.	*Gallinula chloropus*	Common Moorhen	R	IV
	22.	*Fulica atra*	Common Coot	R	IV
14	**Scolopacidae**				
	23.	*Actitis hypoleucos*	Common Sandpiper	R	IV
15	**Burhinidae**				
	24.	*Burhinus oedicnemus*	Eurasian Thick-knee	R	IV
16	**Charadriidae**				
	25.	*Himantopus himantopus*	Blackwinged Stilt	R	IV
	26.	*Vanellus malabaricus*	Yellow-wattled Lapwing	R	IV
	27.	*Vanellus indicus*	Red-wattled Lapwing	R	IV
17	**Laridae**				
	28.	*Sterna aurantia*	River Tern	R	IV
18	**Accipitridae**				
	29.	*Elanus caeruleus*	Black-shouldered Kite	R	IV
	30.	*Haliastur indus*	Brahminy Kite	R	IV
19	**Podicipedidae**				
	31.	*Tachybaptus ruficollis*	Little Grebe	R	IV
20	**Phalacrocoracidae**				
	32.	*Phalacrocorax niger*	Little Cormorant	R	IV
21	**Ardeidae**				
	33.	*Egretta garzetta*	Little Egret	R	IV
	34.	*Bubulcus ibis*	Cattle Egret	R	IV
	35.	*Ardeola grayii*	Indian Pond Heron	R	IV
22	**Ciconidae**				
	36.	*Ciconia episcopus*	Wooly-necked Stork	R	IV
	37.	*Anastomus oscitans*	Asian Open-billed Stork	R	IV
23	**Laniidae**				
	38.	*Lanius meridionalis*	Southern Grey Shrike	R	IV
	39.	*Lanius schach*	Long-tailed Shrike	R	IV
	40.	*Lanius vittatus*	Bay-backed Shrike	R	IV
24	**Corvidae**				
	41.	*Dendrocitta vagabunda*	Rufous Treepie	R	IV

	42.	*Corvus splendens*	House Crow	R	IV
	43.	*Pericrocotus cinnamomeus*	Small Minivet	R	IV
	44.	*Dicrurus macrocercus*	Black Drongo	R	IV
	45.	*Tephrodornis pondicerianus*	Common Woodshrike	R	IV
25	**Muscicapidae**				
	46.	*Copsychus saularis*	Oriental Magpie Robin	R	IV
	47.	*Saxicoloides fulicata*	Indian Robin	R	IV
26	**Sturnidae**				
	48.	*Sturnus pagodarum*	Brahminy Starling	R	IV
	49.	*Acridotheres tristis*	Common Myna	R	IV
27	**Certhiidae**				
	50.	*Salpornis spilonotus*	Spotted Creeper	R	IV
28	**Hirundinidae**				
	51.	*Hirundo smithii*	Wire-tailed Swallow	R	IV
29	**Pycnonotidae**				
	52.	*Pycnonotus leucotis*	White-eared Bulbul	R	IV
	53.	*Pycnonotus cafer*	Red-vented Bulbul	R	IV
30	**Cisticolidae**				
	54.	*Prinia socialis*	Ashy Prinia	R	IV
	55.	*Prinia inornata*	Plain Prinia	R	IV
31	**Zosteropidae**				
	56.	*Zosterops palpebrosus*	Oriental White-eye	R	IV
32	**Sylviidae**				
	57.	*Turdoides striatus*	Jungle Babbler	R	IV
	58.	*Turdoides malcolmi*	Large Grey Babbler	R	IV
	59.	*Turdoides caudatus*	Common Babbler	R	IV
33	**Alaudidae**				
	60.	*Galerida cristata*	Crested Lark	R	IV
34	**Nectariniidae**				
	61.	*Nectarinia asiatica*	Purple Sunbird	R	IV
35	**Passeridae**				
	62.	*Anthus rufulus*	Paddyfield Pipit	R	IV
	63.	*Lonchura malabarica*	Indian Silverbill	R	IV
	64.	*Passer domesticus*	House Sparrow	R	IV
	65.	*Ploceus philippinus*	Baya Weaver	R	IV
36	**Fringillidae**				
	66.	*Emberiza striolata*	House Bunting	R	IV
	67.	*Melophus lathami*	Crested Bunting	R	IV

R-Resident, WV – Winter Visitor, MGS –Migratory Status, CS: Conservation Status : NT - Near Threatened

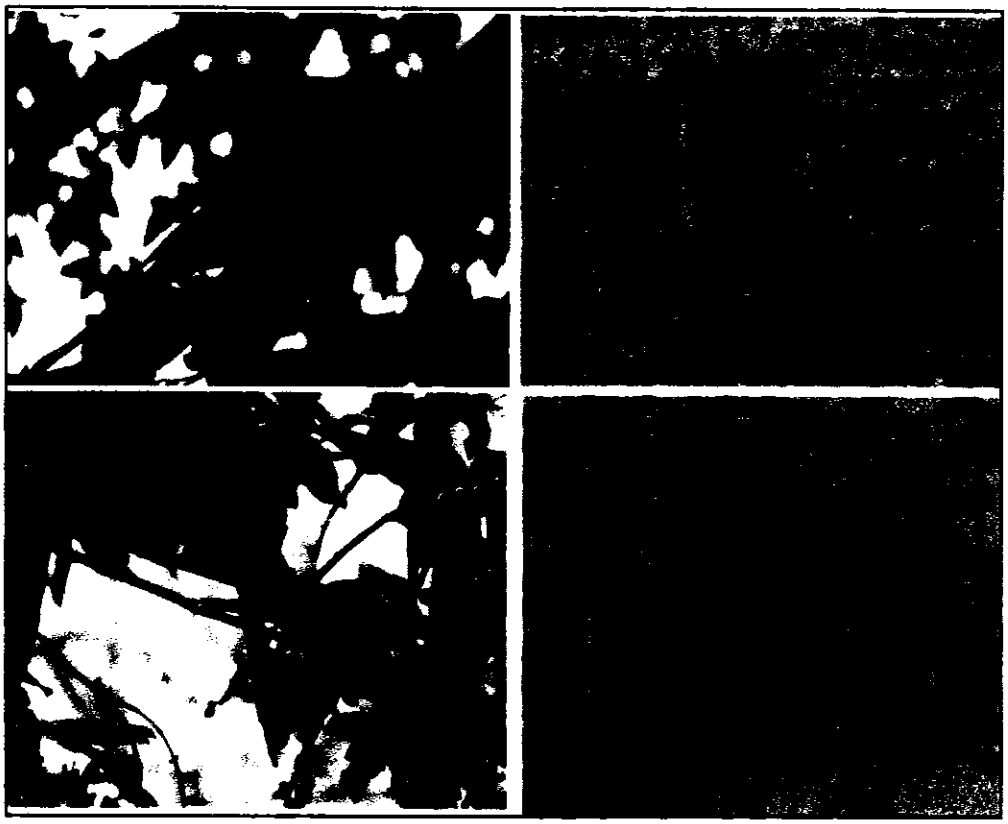


Fig. 1.3: Birds Observed in the study area

Clock - wise 1. Rufous tree pie (*Dendrocitta vagabunda*); 2. Grey francolin (*Francolinus pondicerianus*); 3. Indian Roller (*Coracias benghalensis*); 4. Rose-ringed Parakeet (*Psittacula krameri.*

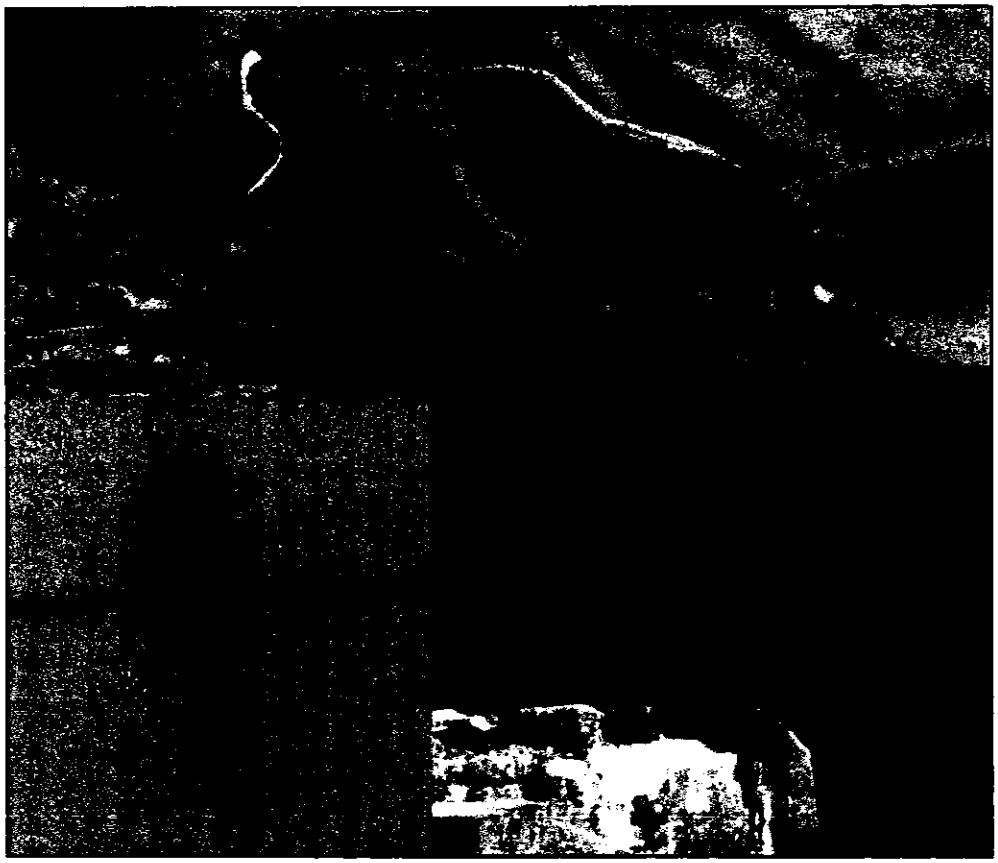


Fig. 1.4: Birds Observed in the study area

Clock – wise 1. Red-wattled lapwing (*Vanellus indicus*), 2. Jungle babbler (*Turdoides striata*), 3. Little Cormorant (Microcarbo niger). 4. Green bee-eater (*Merops orientalis*).

Mammals

Core Zone

Only two species, i.e. *Funambulus pennantii (*Five-Striped Palm squirrel) and *Tatera indica* (Indian Gerbill) were found in the core zone of the study area. This species is very common in the study area and usually uses wide variety of the habitats.

Buffer Zone

Overall 11 species of the mammals belonging to 11 different families were recorded from the buffer zone of the study area. Some species like, Striped Hyena, Small Indian Civet, wild pig and Indian Porcupine are included in the list based on the secondary sources (interview of local people). All the mammals reported from the study area given in the following table:-

Table 1.12 :List of Mammals Recorded from the Buffer Zone of the Study Area					
Family S. No.	Family/Genus/Species	Common Name	Conservation Status		
			IUCN	CITES	IWPA, 1972
1. Cercopithecidae					
1	*Semnopithecus entellus*	Common Langur	LRlc	App. I	Schedule-II
2. Bovidae					
2	*Boselaphus tragocamelus*	Nilgai	LRlc	--	Schedule-III
3. Suidae					
3	*Sus scrofa**	Wild Pig	LRlc	--	Schedule-III
4. Canidae					
4	*Canis aureus**	Jackal	LRlc	App. III	Schedule-II
5. Hyaenidae					
5	*Hyaena hyaena**	Striped Hyena	LRnt	--	Schedule-III
6. Felidae					
6	*Felis chaus**	Jungle Cat	LRnt	App. II	Schedule-II
7. Herpestidae					
7	*Herpestes edwardsii*	Grey Mongoose	LRlc	App. III	Schedule-IV
8. Leporidae					
8	*Lepus nigricollis*	Indian Hare	LRlc	--	Schedule-IV
9. Hystricidae					
9	*Hystrix indica**	Indian Porcupine	LRlc	--	Schedule IV
10. Sciuridae					
10	*Funambulus pennantii*	Five-Striped Palm squirrel	LRlc	--	Schedule IV
11. Muridae					
11	*Tatera indica*	Indian Gerbil	LRlc	--	Schedule V
12. Felidae					
11	*Panthera Pardus*	Leopard	VU	App. I	Schedule I

Note: * included in the list based on the secondary sources, LRlc – Lower Risk lest concern, LRnt-Lower Risk near threatened, VU-Vulnerable, App.- Appendix.

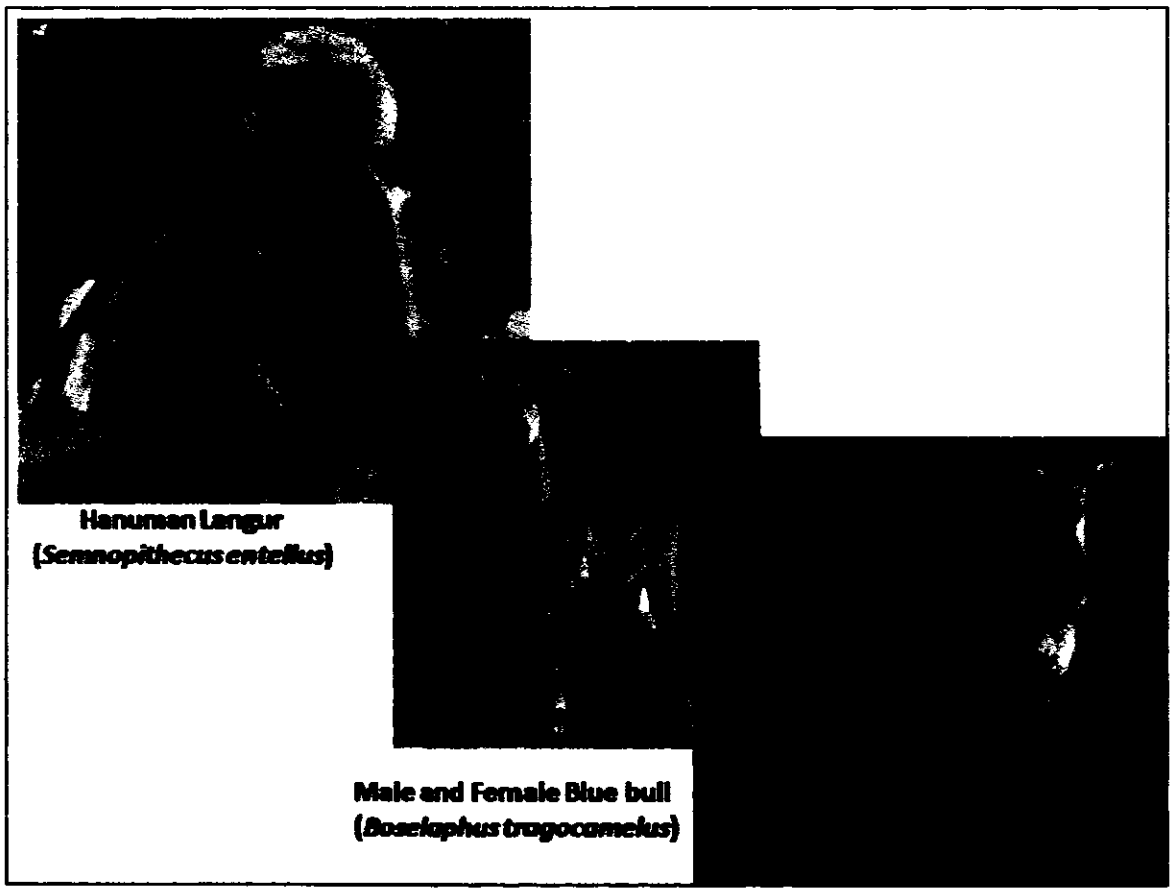


Fig. 1.5: Mammal Species reported from Buffer Zone

Endemic Fauna of the Study Area

None of the sighted animal species can be assigned endemic species category of the study area.

Migratory Birds & Winter Visitors in the Study Area

Maximum birds reported were resident. However, some common birds like Common Hoopoe is a winter visitor while Indian Cuckoo, Drongo Cuckoo and Plaintive Cuckoo are summer visitor. However, all these birds are locally migrant.

Status of the Forest, their category in the Study Area

Jawahar Sagar Wildlife Sanctuary/ Mukundra Hills Tiger Reserve having common boundary is located at a distance of 1.0 Kms of the existing mine lease area.

2.0 ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

2.1 BIOLOGICAL ENVIRONMENT

2.1.1 IMPACTS, EVALUATION AND MITIGATIONS

Potential or likely impacts due to the proposed mining may be, Loss of adjacent forest habitats and biodiversity, Loss of vegetation cover and biodiversity, Loss of aquatic ecosystem and biodiversity, Effects of heavy transportation on habitats and faunal groups, Impact on water and land components, Changes in ambient air quality and degradation of vegetation, Impact of Noise on faunal groups, Accidental mortality of faunal groups, Impact to threatened floral species, Impact to threatened faunal species, Impact on Animal movement. Keeping all this in mind the following mitigations have been suggested under environmental management plan.

With the above understanding of the role of plant species as bio-filter to control air pollution, appropriate plant species (mainly tree species) have been suggested conceding the area/site requirements and needed performance of specific species.

Impact	Evaluation	Mitigation
Loss of adjacent forest habitats and biodiversity	The expansion is coming up in the same lease area. The increase in the production capacity may affect the surrounding habitats & biodiversity.	As the expansion is coming in the same mine lease area (core zone) is not consists of any critical/ unique habitat or designated forest land vulnerable to the fragmentation or isolation. Therefore the proposed expansion project activities will not have any impacts like loss of true forest habitat, floral species and associated faunal diversity. However 33% area of the existing mine site is already covered under the green belt. Further impacts due to the expansion activities can be mitigated through effective and additional plantation with variety of species in the existing site and in the surrounding villages

Impact	Evaluation	Mitigation
Loss of vegetation cover and biodiversity (core zone)	The expansion is coming up in the same lease area. So there will no impact on as associated	There is no any clearing of existing sparse vegetation within the lease area so no major impact on floral composition and associated faunal species at local level. Now it was suggested that approx 800 trees (Local trees

	biodiversity of the core zone area.	species like: *Cassia fistula, Delbergia sissoo, Delonix regia, Polyalthia longifolia etc*) will be planted in the mine area and nearby villages, to reduce the impact of expansion activities in the surroundings of the existing mine site.

List of plant species suggested to plant and improve green belt in and around the existing mine

S. No.	Species Name	Local Name	Species Characters
1.	*Acacia nilotica*	Desi Babul	*WT, ST*
2.	*Albizzia lebbek*	Shiris	*WT*
3.	*Annona squamosa.*	Sitafal	*CT, FT, ST*
4.	*Azadirachta indica*	Neem	*CT, MT*
5.	*Dalbergia sissoo*	Sisam	*WT, ST*
6.	*Pongamia pinnata*	Karanj	*MT, CT*
7.	*Emblica officinalis*	Ambla	*CT, ST, FT*
8.	*Ficus bengalensis*	Bad or Vad	*CT, LT, FT*
9.	*Ficus religiosa*	Piplal	*CT, LT, FT*
10.	*Holoptelea integrifolia*	Churel	*WT, LT*
11.	*Lawsonia inermis*	Mehndhi	*Sh*
12.	*Mangifera indica*	Aam	*CT, LT, FT*
13.	*Pithecellobium dulce*	Jungal Jalebi	*CT, MT*
14.	*Syzygium cumini*	Jamun	*WT, FT*
15.	*Tamarindus indica*	Emli	*CT,MT, FT*
16.	*Terminalia arjuna*	Arjun	*WT, LT*
Species Characters: SH=Shrub; WT sp= Wild Tree species; CT sp= Common Tree species; FT = Fruit Tree; ST = Small Tree; LT = Large Tree and MT = Medium Tree.			

1. Overall 16 plants species have been suggested to grow in and around the mine lease area.

Impact	Evaluation	Mitigation
Changes in ambient air quality (dust & gases) and degradation of vegetation	Due to the proposed mining project transportation of material with the movement vehicles will increase by two folds of its existing in the lease area surroundings. Dust concentration is expected to increase	Greenbelt development program with specific plant species which can act as bio-filters can further reduce the level of pollutant concentration and also will improve the overall ambient air quality in and around the project environment. Provision of spraying water can help to reduce dust emission on roads. Moreover, the following tabulated plant species suggested includes few shrubs and trees species of wild, common and species of ornamental values for effective dust control. The level of dust control efficiency of these species ranges from minimum of 6.12% by *Acacia nilotica* to

	because of Heavy vehicle movements in the area.	maximum of 35.39% by *Holoptelea integrifolia*. The area of plantation suggested mainly focused along the road side where the vehicle pressure is likely to increase during the mining activities especially during sand transportation. In each location, a wider range plant species are suggested to maintain the floral diversity and improve the survival rate. Therefore, the species list includes predominately wild and few common tree species with high rate of dust control efficiency *(Cassia fistula-23.03%, Butea monosperma- 24.44%, Azadirachta indica -25.54. Polyalthia longifolia- 29.84%, Terminalia arjuna-30.54% and Holoptelea integrifolia 35.39%).* The location 2 includes the stretches of all the roads passing through the village area which are under the influences of project related activities mainly vehicle pressure due to transporting sand. A list of 11 species has been recommended to develop avenue plantation along the road sides. This list includes mainly common species of aesthetic values with colorful flowers and also fruit trees to attracts birds *Annona squamosa, Magifera indica, Ficus religiosa, Syzygium cumini,* are some of the fruit trees while *Delonix regia* (red), *Cassia fistula* (yellow) and *Butea monosperma* (bright orange) produce different colors of flowers in different seasons which can attracts lots of birds and insects in addition to increase the aesthetic value of the areas. These species are also control dust particulate matters effectively. Though *Peltophorum pterocarpum* and *Cassia siamea* are the addition two ornamental species not given in the list suggested to plant along the road sides of village area and mine lease area. These species will also increase the aesthetic value due bearing of colorful flowers and commonly used in avenue plantation.

List of Plant Species to Control Dust (Particulate matter) in and around the mine area

S. No.	Scientific Name	Common & Local Name	% of DC	Location		
				1	2	3
1.	*Annona squamosa*	Sitafal	12.09	*	*	
2.	*Magifera indica*	Aam	12.25			*
3.	*Thevetia peruviana (sh)*	Peeli Kaner	12.56	*	*	*

4.	*Ipomea carnea (sh)*	Beshram/Behaya	14.87	*	*	*
5.	*Hibiscus rosa- sinensis(Sh)*	Gurhal, Jasund,	21.09	*	*	
6.	*Bougainvilliea glavra(St)*	--	21.35			
7.	*Ficus religiosa*	Peepal	12.94	*	*	*
8.	*Syzygium cumini*	Jamun	14.39			*
9.	*Citrus limon*	Nimboo	15.96			
10.	*Delbergia sissoo*	Shesham	17.02	*	*	
11.	*Delonix regia*	Gulmohar	18.05			*
12.	*Moringa olieifera*	Sahajan	18.79			*
13.	*Aegle marmelos*	Bel	18.9	*	*	
14.	*Pithecolobium dule*	Jungle Jalebi	19.21	*	*	
15.	*Cassia fistula*	Amaltas	23.03	*	*	*
16.	*Butea monosperma*	Palas, Dhak	24.44	*	*	*
17.	*Azardirachta indica*	Neem	25.54	*	*	*
18.	*Polyalthia longifolia*	Ashoka	29.84	*	*	*
19.	*Terminalia catappa*	Desi Badam	30.12			*
20.	*Terminalia arjuna*	Arjun	30.54	*	*	

Locations: 1- both sides of the mining area, 2- Roads connecting mine lease, 3- Roads passing through nearest villages. Sh- shrub, St – Straggler. %DC – Percent of Dust Control efficiency.

Impact	Evaluation	Mitigation
Impact of Noise on faunal groups: Increase in noise level in the project area may affect the faunal groups in term of their normal behaviors like; feeding, resting and breeding/nesting (especially avifauna).	The main sources of noise in the mining activities will be of mining equipment and vehicular movement associated. The standard prescribed by the Occupational Safety and Health Administration (OSHA) is 90 db not more than 8 hrs. Exposures for the worker However, no such conditions and any standard limitations have been available for any animal group. However, intensive afforestation program with	1. Some of the plants species listed in above different table also perform vital role in control noise pollution due to their thick and fleshy leaves and vibrating nature (Sexena 1991). A total of seven species were identified as species which are able to absorb So_2 emission also. 2. Therefore those species listed below are suggested to grow in and around the villages and other public places like schools, hospitals, health Centre and temples of nearby villages. 3. In addition, following the afforestation programs suggested above in different locations in and around the mining sites, road sides, village and other area in different phases will further minimize the noise level and also provide habitat for many avifauna & other faunal groups and improve the overall faunal diversity of the surrounding area.

	appropriate plant species can take care of this localized and short term disturbance in the long run.	

List of plant species to control Noise pollution and absorb gas (SO_2 emission)

S. No.	Scientific Name	Common & Local Name	Performance		Location	
			CN	OGE	1	2
1.	*Aegle marmelos*	Bel	*			*
2.	*Azardirachta indica*	Neem	*	+	*+	*+
3.	*Diospyros melanoxylon*	Tendu	*		*	
4.	*Ficus bengalensis*	Banyan, Vad	*		*	*
5.	*Ficus religiosa*	Peepal	*	+	*+	*+
6.	*Polyalthia longifolia*	Ashoka	*	+	+	*+
7.	*Terminalia catappa*	Desi Badam	*		*	*
8.	*Terminalia arjuna*	Arjun	*	+	*+	+

* CN –Control Noise level, OGE – Absorb Gas emission (+ So_2), Locations: 1- roads crossing villages, 2 – Public places (schools, hospitals, health centre and temples)

Impact	Evaluation	Mitigation
Accidental mortality of faunal groups	One of the likely impacts that would affect the animal species is road mortality due to vehicle movements/ transportation. Low abundance status of mainly amphibians and mammals, the expected impact in the form of road kill on these faunal groups may not be very high.	Faunal survey in the study area reported low abundance and species richness of all faunal groups, therefore increasing vehicle movements due to proposed expansion and transportation of materials may not have high impact. However the following implication will further reduce possibility of this type of impacts:- 1. It is suggested to dugout 1m width and depth of trenches on either side of the roads which are under intensive use and these trenches can be connected with culverts at regular intervals (at 0.5 km distance) to facilitate lesser vertebrates to cross the road without any accidental kill. 2. The rain water stagnated in the trenches will also retain moisture level for longer period to support the road side plantation to gain faster growth rate. 3. Further it is suggested to put sign boards and provide strict instructions to the drivers to maintain speed limits of the vehicles which will reduce the road mortality rate as well as spillage of material.

Impact to threatened floral species	Among faunal species, present survey reported from buffer zone of the project (Indian peafowl) area. These species may be affected due to habitat degradation and fragmentation which will ultimately have impact on population status.	A conservation plan for same is prepared separately. However, these species is very common and usually uses wide variety of habitat types like agriculture areas, grasslands and open fallow land including urban human dominated areas which are widely available in the study area and beyond it.

CONSERVATION PLAN FOR INDIAN GRAY MONGOOSE (*Herpestes edwardsii*)

3.1 INTRODUCTION

The Indian gray mongoose (Herpestes edwardsii), also known as the Common grey mongoose, is predominantly found in Sri Lanka and Southern India although the species can also be found in other locations such as Iran, Saudi Arabia, other areas of India, and some areas of southeast China. Unlike other forms of wildlife, the Indian gray mongoose is often found close to the dwellings of humans, particularly in areas of tall grass and trees. They are also found in areas of dense vegetation as well as in cultivated farmland. The animal creates its den in burrows and holes and occasionally under rocks and crags. It often lives alone or in the companionship of another of its species. Although very curious, it is rare to see the mongoose venture far away from its den and natural habitat.

Their coloring is typically a tawny grayish brown color with their underside being lighter than their upper body. The Indian gray mongoose typically lives about 12 years in captivity. The mongoose is an avid predator and is capable of defending itself against a variety of species. However, the primary predators of the Indian gray mongoose are the leopard as well as the snakes which the mongoose has been known to engage in fierce battle.

The Common gray mongoose, as its name suggests, is the most common species of mongoose and is not considered endangered. The species is listed as a Least Concern meaning that there is no immediate risk that the mongoose will become extinct. Although this species is not in immediate danger, there are other species of mongoose which are listed as endangered.

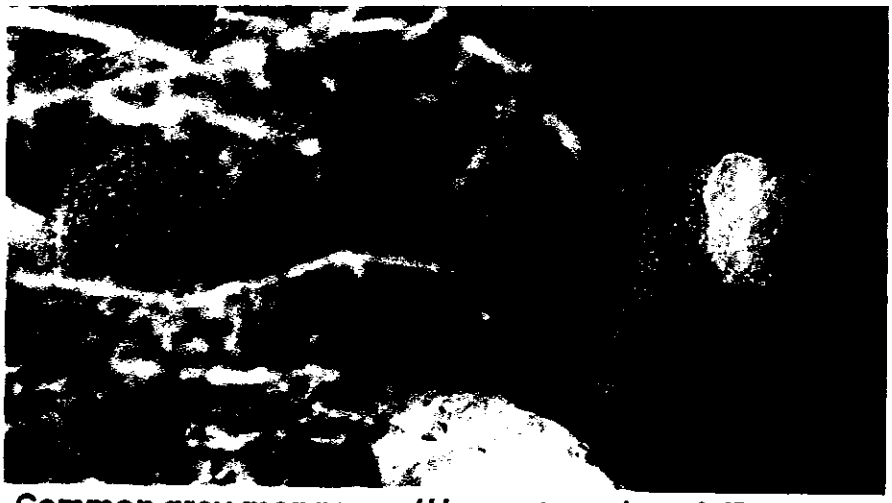
The lease area of Sandstone Mine is situated near Village(s) Dhaneshwar and Sutara, Tehsil and District – Bundi (Rajasthan). The lease area falls within the Geological Survey of India Toposheet no. 45 O/12. The geographical location of the mine is as under:-

Latitude	25°02' 53.10"N to 25°04' 40.78" N
Longitude	75°32' 29.21"E to 75°36' 01.12" E

Scientific classification

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Carnivora
Family:	Herpestidae

Subfamily:	Herpestinae
Genus:	Herpestes
Species:	*H. edwardsii*



Common grey mongoose (*Herpestes edwardsii*)

Fig. 1.6: Mongoose in the forest of the buffer zone of the study area

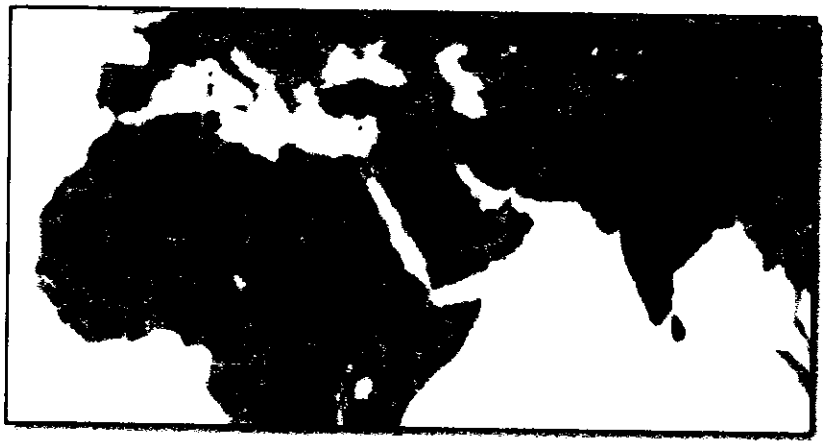


Fig. 1.7: Indian grey mongoose range

3.2 Study Approach

2 individuals were observed in the Buffer zone of the study area has been reported as a habitat of Schedule II species commonly known as Nevla, more effort was made to assess their status in term of movements and habitat use in and around the study area. At first, a detailed biological survey of the core zone and buffer zone (10 km radius from periphery of the proposed sand stone mining project) was carried out to understand the status distribution of the species in the study area. Also, questionnaire survey was carried out to understand the recent status of Nevla sightings and their movements. Overall, 8 people

from five villages were interviewed randomly. The conclusion of the survey discussed the potential sightings & habitat use, and movement and food habits of Nevla in the study area.

3.2.1 PHYSICAL TRAITS

The Indian gray mongoose is typically between 14 and 17 inches in length or 36 and 45 centimeters. The tail length of the mongoose is usually about the length of the body, about 17 inches or 45 centimeters. Its long tail length allows for the mongoose to be a very apt climber because of its added ability to balance. The species weighs between 2 and 4 pounds or 0.89 and 1.7 kilograms with the females being significantly smaller than the males.

3.2.2 BEHAVIOR

It frequents alike the open country and low jungles, being found in dense hedgerows, thickets, holes in banks etc ; and it is very destructive to such birds as frequent the ground. Not unfrequently it gets access to tame pigeons, rabbits, or poultiy, and commits great havoc, sucking the blood only of several. It also hunts for, and devours, the eggs of partridges, quails, and other ground-laying birds; and it will also kill rats, lizards, and small snakes.

3.2.3 HABITAT USE

The habitat and ecology of the Indian Grey Mongoose is known from few studies, however, it has been recorded in disturbed areas, in dry secondary forests, and thorn forests (Shekhar 2003), but seems to be a commensal with humans as well. This species was often recorded near human settlements by Shekhar (2003) in a survey in central India during 2002-03, where it was seen near garbage bins, garbage dumps, scavenging on carrion, and on roads. The species seems to be most common in disturbed areas, in dry secondary forests and thorn forests. This species has been found up to 2,100 m (Corbet and Hill 1992) and feeds on insects and snakes (Santiapillaiet al. 2000).

3.2.4 MATING BEHAVIOR

Mongooses have an anal sac used in communication. Males spray only during the mating season. Mongooses display an adapted behavior to deposit the spray at nose height on vertical objects. Indian gray mongooses raise one leg, spraying the urine down the object to be marked. In addition, they may spray high on the object by rearing up on the forepaws into a handstand position and ejecting the secretions. The secretions of the scent glands are potent and can radiate a large distance, like that of the skunk *Mephitis mephitis*.

3.2.5 REPRODUCTION

Shetty et al. (1995) observed mating behavior of Indian gray mongooses in captivity. Social hierarchy was evident, and the dominant male and female were observed and reported to mount more often than subordinate animals. There was no significant change in mounting with females in estrus. Herpestes edwardsi reproduces rapidly, with females giving birth to two or three litters per year. Litters typically contain from 2 to 4 young. The gestation period is 60 to 65 days with parturition occurring in May or June and October to December. Females have four to six mammae.

Breeding interval: Indian gray mongooses breed two to three times a year.

Breeding season: Copulation occurs in March, August and October.

Range number of offspring: 2 to 4.

Range gestation period: 60 to 65 days.

3.2.6 FOOD HABITS

The Indian gray mongoose has a varied diet consisting of rats, mice, other rodents, small birds, bird's eggs, invertebrates and lizards. They are also known to kill snakes including cobras which require a great deal of speed and agility. It is one of the only species that is known for its ability to kill these deadly snakes as well as other poisonous snake species. Their ability to kill these potentially fatal animals is due to their speed as well to their exceptionally thick, course coat.

Animal Foods: birds; mammals; amphibians; reptiles; fish; eggs; insects; terrestrial non-insect arthropods; aquatic crustaceans

Plant Foods: roots and tubers; seeds, grains, and nuts; fruit

Primary Diet: omnivore

Conservation Status

IUCN	:	Least Concern (IUCN ver. 3.1)
IWPA	:	Schedule II
CITES	:	Appendix III

3.2.7 MAJOR THREATS

This species has no major threats occurring across the whole of its range; however, it does experience some regional threats. Shekhar (2003) notes that the grey mongoose is often captured and sold as a pet. Gypsies from northern India use hook snares to capture individuals for skins, which are then sold in local markets in Nepal (Shekhar 2003). All

mongoose species are in demand for the wildlife trade (Van Rompaey and Jayakumar 2003): the meat is eaten by several tribes and the hair is used for making shaving brushes, paint brushes, and good luck charms (Hanfee and Ahmed 1999).

3.3 MANAGEMENT AND CONSERVATION ACTIONS

The Indian Grey Mongoose is listed on CITES Appendix III in India (Wozencraft 2005). In 2002 in India, the government upgraded the Mongoose species, to Part II of Schedule II of Wildlife (Protection) Act 1972. In central India people consider the mongoose to be sacred and thus it is not killed there (Shekhar 2003). This species is found in numerous protected areas. Field surveys, ecological studies, habitat protection and monitoring of threats are needed.

As people found out that mongooses were rat and snake killers, they were domesticated to control rats, mice and snakes in and around houses.

Positive Impacts: pet trade; research and education; controls pest population

Threats to the Nevla in the area are:-

1) Habitat loss, specially the shortage of Forests in and around the villages for providing shade during hot summer months.
2) Shortage of drinking water for the animal during the hot summer days.
3) Casualties caused by eating chemically treated agricultural crop seeds.
4) Illegal hunting by some communities.

In the study area, all the villages surveyed are against hunting or poaching of the people. Nevla conservation plan has to address these threats.

Conservation Measures: Direct and indirect approach is required to provide effective conservation, which is recommended as under:-

1. The awareness about the various laws and acts of Wildlife (Protection) Act, 1972, in the local community is lacking. Proper sensitization regarding the pros and cons of such could divert them from poaching.
2. A proper rehabilitation strategy is a must for various tribal communities actively engaged in poaching, as these tribes do not change their profession even after repetitive confiscation also.
3. Increasing the tree cover in the buffer area for shelter and food for Nevla. This will be achieved by planting of tree groves (a group of trees that grow close together, generally without many bushes or other plants) in buffer area. Some local species of trees will be planted. Planting of tree groves in school compounds in the villages of buffers area will be planted as per the plantation programme.

4. By conducting awareness programmes (community and school level) for conservation of Nevla in the area and also through organizing competitions during "Wildlife Week" and "Van Mahotsave" celebrations.
5. Some provision of rewards to informers for the control of poaching and illegal trade in wildlife.
6. Carrying out census and research projects to know the potential threats and population status of the species.
7. Provision of veterinary care for injured or sick animal.
8. Another way to help preserve the Schedule species is to create society dedicated to ecological ethics. All the conservation measures will be implemented with the help of and in the consultation of the district forest department, Bundi (Raj.).
9. Wildlife conservation and its importance is must to teach the school children. The awareness from such level could give better result. Curriculum of environment studies should include more chapters on the local wildlife, rather the national and international issues.

All above activities will be carried out with the consultation of local forest department and Gram panchayat of respective villages.

1. **Plantation- approximately 250 tree/year plants of local plant species for five years.**

Plants species / verities will be suggested by the local forest department and plant saplings will be distributed in project villages as per the above mentioned schedule (year wise).

Awareness programme for "Nevla" conservation will be scheduled in a year in five (nearest to project site) schools every year.

During awareness programme following activities will be arranged at the various village level schools as mentioned above (year wise),

- "Essay writing on Nevla"
- "Drawing competition (Nevla picture)

Further Suggestions/recommendations:

- To carry annual census research projects to ecology and habitat use by Nevla.
- By making provision of veterinary care injured or sick deformed Nevla.

The proponent has proposed a sum of Rs. 200000/- for the "Nevla" conservation plan under the following heads:-

S. No.	Work or Activity	Year wise expenditure in Rs.				
		I Year	II Year	III Year	IV Year	V Year
1	Plantation- 100 trees (Cost of sapling will be changed per year).	2,500	3,000	3,500	4,000	4,000

2	Digging cost of pit	12,500	12,500	12,500	12,500	12,500
3	Small water tank or tanka – 50 in number @ 1000/- per tank + (Repair & maintenance cost)	50,000	8,000	8,000	8,000	8,000
4	One awareness programme for "Nevla" conservation will be scheduled in 3 months.	2,500	2,500	2,500	2,500	2,500
5	3 cash prizes @ 2000 in a year will be awarded to the informer of poachers.	6,000	5,000	5,000	5,000	5,000
	Total	**73,500**	**31,000**	**31,500**	**32,000**	**32,000**

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CONSERVATION PLAN FOR INDIAN PEAFOWL (*Pavo Cristatus*)

4.1 INTRODUCTION

The lease area of Sandstone Mine is situated near Village(s) Dhaneshwar and Sutara, Tehsil and District - Bundi (Rajasthan). The lease area falls within the Geological Survey of India toposheet no. 45 O/12. The geographical location of the mine is as under:-

Latitude	25°02' 53.10"N to 25°04' 40.78" N
Longitude	75°32' 29.21"E to 75°36' 01.12" E

Peacock or Indian peafowl (Pavo cristatus) is a familiar and universally known large pheasant. It is a National Bird of India, belongs to Schedule I of the Wildlife (Protection) Act 1972 was reported from the some villages of the study area. The male has a spectacular glossy green long tail feathers that may be more than 60 percent of the bird's total body length. These feathers have blue, golden green and copper colored ocelli (eyes). The long tail feathers are used for mating rituals like courtship displays. The feathers are arched into a magnificent fan shaped form across the back of the bird and almost touching the found on both sides. Females do not have these graceful tail feathers. They have the fan like crest with whitish face and throat, chestnut brown crown and hind neck, metallic green upper breast and mantle, white belly and brown back rump and tail. Their primaries are dark brown.

CLASSIFICATION

Kingdom	:	Animalia
Phylum	:	Chordata
Class	:	Aves
Order	:	Galliformes
Family	:	Phasianidae
Genus	:	Pavo
Species	:	*Pavo cristatus*
Vernacular name	:	Indian Peafowl

Fig. 1.8: Male Peacock observed in the buffer zone of the study area.

4.2 STUDY APPROACH

Buffer zone of the study area has been reported as a habitat of Schedule I species *Pavo cristatus* commonly known as peacock, more effort was made to assess their status in term of movements and habitat use in and around the study area. At first, a detailed biological survey of the core zone and buffer zone (10 km radius from periphery of the proposed sandstone mining project) was carried out to understand the status distribution of the species in the study area. Also, questionnaire survey was carried out to understand the recent status of peacock sightings and their movements. Overall, 8 people from seven villages were interviewed randomly. The conclusion of the survey discussed the potential sightings & habitat use, and movement and food habits of peacock in the study area.

4.2.1 HABITAT USE

No any peacock was sighted in the core zone. All the direct sightings of the peacock were located near the human dominated and forest areas. This species is well adapted to natural village environment setting. According to the villagers, peacock is present in both, village and forest areas. Day time they temporarily move towards the surrounding agriculture areas for feeding while during night time roosts on the trees present in the village.

People of villages pointed out that, some peacocks present in the nearby Hills, hide in the rocky caves in the night time and they never come to villages while some of the roosting on the trees present in the agriculture hedges.

4.2.1 LIFE CYCLE

Call Call : Kee-ow, Kee-ow, Kee-ow, Ka-an, Ka-an, Ka-an, Kok-kok, Kok-kok, cain-kok

Breeding : April-September (Project area)

Nest site : On ground in undergrowth (wild), On buildings by semi-feral birds in villages

Body length : 180-230 cm

Weight : 2750-6000 gm

Habitat : In the undergrowth in deciduous forests near streams Tall trees for roosting

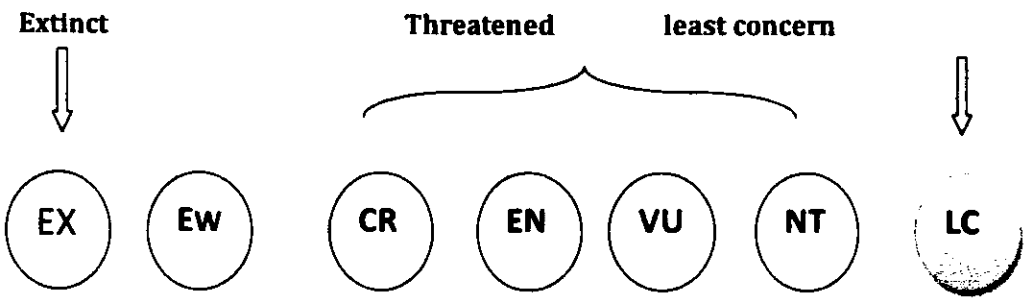
4.2.3 FOOD HABITS

Pea fowls are omnivores, eating plant parts, flower petals, seed heads, insects and other arthropods, reptiles and amphibians. In the study area, dense tree canopy cover supports good insect diversity which is very common food for peafowl.

4.2.4 CONSERVATION AND RELATIONSHIP WITH MAN

The great beauty and popularity of the Indian Peafowl has ensured its protection throughout most of its native ranges. It is a National bird of India. The peafowl is prominent in the mythology and folklore of the Indian people. The Hindus consider the bird to be sacred because of its association with Lord Krishna who used to wear its feather as crown (Mor Mokut). It is also associated with the God Kartikeya, son of the Lord Shiva and Parvati and brother of Lord Ganesh. It is "Vaahan" (transport) of Lord Kartikeya.

CONSERVATION STATUS



IUCN	:	Least Concern
IWPA	:	Schedule I
CITES	:	Not listed

4.3 BUFFER ZONE AS A PEACOCK HABITAT

Present survey of the peafowl in the buffer zone of the project site cleared that; peafowl is using both, village adjacent habitats and forest habitats of the buffer zone. However, the following points can give an insight on the overall status of peafowl in the study area and thereby plan for better management strategies related to proposed project activities.

People of the surveyed villages were well aware of the habits and habitats of peafowl in the study area. Moreover, local people are against hunting and poaching of the Peacocks. In the buffer zone, peafowl uses agriculture (adjacent to village) and forest habitats as a feeding and breeding ground. Some of the peacocks are taking shelter in the village adjacent habitats while some prefer to rocky forest hills. It clearly indicates that, peafowl normally uses human associated and forest habitats.

From above study, it has been visualized that, the proposed project will not have any significant impact on peacock in terms of their normal movements and other activities. However, it is necessity to take some management options like habitat improvement in the villages located in the vicinity of the project site. So, habitat improvement programme (plantation of local plant species) will be undertaken indifferent villages located in the close vicinity of the project area. Under this programme saplings will be distributed in the nearby villages with the consultation of the local forest department.

4.4 THREATS

Threats to the peacocks in the area are:-

1. Habitat loss, specially the shortage of tall trees in and around the villages for roosting and for providing shade during hot summer months.
2. Shortage of drinking water for the birds during the hot summer days.
3. Casualties caused by eating chemically treated agricultural crop seeds.
4. Illegal hunting by some communities.
5. In the study area, all the villages surveyed are against hunting or poaching of the people.
6. Peacock conservation plan has to address these threats.

4.5 CONSERVATION MEASURES

Direct and indirect approach is required to provide effective conservation, which is recommended as under:-

1. Increasing the tree cover in the buffer area for shelter and roosting of peacocks. This will be achieved by planting of tree groves (a group of trees that grow close together, generally without many bushes or other plants) in buffer area. Some local species such as Neem, Siris, Amaltash, Ardu, Shesham, Dhak, Peepal tree etc. will be planted. Planting of tree groves in school compounds in the villages of buffers area will be planted as per the plantation programme.
2. By conducting awareness programmes (community and school level) for conservation of peacocks in the area and also through organizing competitions during "Wildlife Week" and "Van Mahotsave" celebrations.
3. Some provision of rewards to informers for the control of poaching and illegal trade in wildlife.
4. Carrying out census and research projects to know the potential threats and population status of the species.
5. Provision of veterinary care and cages for injured or sick deformed birds.
6. Suggest strategies to minimize negative impacts of changing environment in nearby area of peacock populations and to promote conservation of peacock habitats.
7. Another way to help preserve the endangered species is to create society dedicated to ecological ethics. All the conservation measures will be implemented with the help of and in the consultation of the district forest department, Bundi (Raj.).
8. With the objective of effectively protecting the wild life and to control poaching, smuggling and illegal trade in wildlife and its derivatives, the Government of India enacted Wild Life (Protection) Act 1972. The Act was amended in January 2003 and punishment and penalty for offences under the Act have been made more stringent.

   For above mentioned activities, proponent has proposed a sum of Rs. 100,000/- for the "Peacock" conservation plan under the following heads up to three years in consultation of local forest department.

Expenditure Budget for Five Years For Peacock Conservation							
S. No.	**Activity**	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**5th Year**	**Budget (INR)**
1	*Plantation- approximately 200 saplings/year for five years (@ Rs. 50/- per saplings)*						
Amount Rs.		10,000	10,000	10,000	10,000	10,000	*50,000/-*
Villages		Karundi	Bazari	Khari	Dabi	Ganeshpura	
2	*Awareness programme for "Peacock" conservation will be scheduled in a year in five schools every year.*						
Amount Rs.		10,000	10,000	10,000	10,000	10,000	*50,000/-*
Schools of		Dhaneshwar	Sutara	Jasaliya	Gudha	Rajpura	
Total Budget							**Rs. 1,00,000/-**
							(Rupees One Lakh Only)

All above activities will be carried out with the consultation of local forest department and Gram Panchayat of respective villages.

2. **Plantation- approximately 200 tree/year plants of local plant species for five years.**
   Plants species / verities will be suggested by the local forest department and plant saplings will be distributed in project villages as per the above mentioned schedule (year wise) Once the plantation will be done.

3. **Awareness programme for "Peacock" conservation will be scheduled in a year in five (nearest to project site) schools every year.**
   During awareness programme following activities will be arranged at the various village level schools as mentioned above (year wise),
   - "Essay writing on Peacock"
   - "Drawing competition (Peacock picture)

Further Suggestions/recommendations:

- ✓ To carry annual census research projects to ecology and habitat use by peacock.
- ✓ By making provision of veterinary care and cages for injured or sick deformed birds.

CONSERVATION PLAN FOR LEOPARD (*Panthera pardus fusca*)

5.1 Introduction

The Indian leopard (*Panthera pardus fusca*) is a leopard subspecies widely distributed on the Indian subcontinent. The species Panthera pardus is listed as Vulnerable on the IUCN Red List because populations have declined following habitat loss and fragmentation, poaching for the illegal trade of skins and body parts, and persecution due to conflict situationsLeopards don't need much water. They survive from the moisture they get from eating their prey.

CLASSIFICATION

Kingdom	Animalia
Phylum	chordata
Class	Mammalia
Order	Carnivora
Family	Felidae
Genus	Panthera
Species	pardus
Subspecies	Fusca (Meyer), 1974

5.2 Study Approach

Buffer zone of the study area has been reported as a habitat of Schedule I species *Panthera pardus fusca* commonly known as leopard, more effort was made to assess their status in term of movements and habitat use in and around the study area. At first, a detailed biological survey of the core zone and buffer zone (10 km radius from periphery of the proposed project) was carried out to understand the status distribution of the species in the study area. Also, questionnaire survey was carried out to understand the recent status of *Panthera pardus fusca* sightings and their movements. Overall, 20 people from different villages were interviewed randomly. The conclusion of the survey discussed the potential sightings & habitat use, and movement and food habits of leopard in the study area.

5.3 Characteristics, Habitat, Life Cycle and Diet

Characteristics

Characteristics		
	Male	Female
Body Size	4 ft 2 in (127 cm) to 4 ft 8 in (142 cm)	3 ft 5 in (104 cm) and 3 ft 10 in (117 cm)
Tail	2 ft 6 in (76 cm) to 3 ft (91 cm)	2 ft 6 in (76 cm) to 2 ft 10.5 in (87.6 cm)
Weight	110 and 170 lb (50 and 77 kg).	64 and 75 lb (29 and 34 kg).

5.4 Behavior:

Leopards are nocturnal animals, meaning they are active at night. During the day, they rest in thick brush or in trees. Leopards are solitary, preferring to live alone. Leopards are elusive and solitary. They are known for their ability in climbing, and have been observed resting on tree branches during the day, dragging their kills up trees and hanging them there, and descending from trees headfirst. They are powerful swimmers, although are not as disposed to swimming as some other big cats, such as the tiger. They are very agile, and can run at over 58 kilometers per hour (36 mph), leap over 6 m (20 ft) horizontally, and jump up to 3 m (9.8 ft) vertically. They produce a number of vocalizations, including grunts, roars, growls, meows, and purrs. Males are larger and heavier than females.

Reproduction & life cycle	
Sexual Maturity:	24-28 months for both males and females, reproduction uncommon prior to 33-36 months
Gestation:	90-106 days; interbirth interval 14-39 months
Litter Size	Range 1-3
Kittens produce capacity	Range 1 to 6
Birth weight	430-1000 gm
Stay with mother	18-24 months

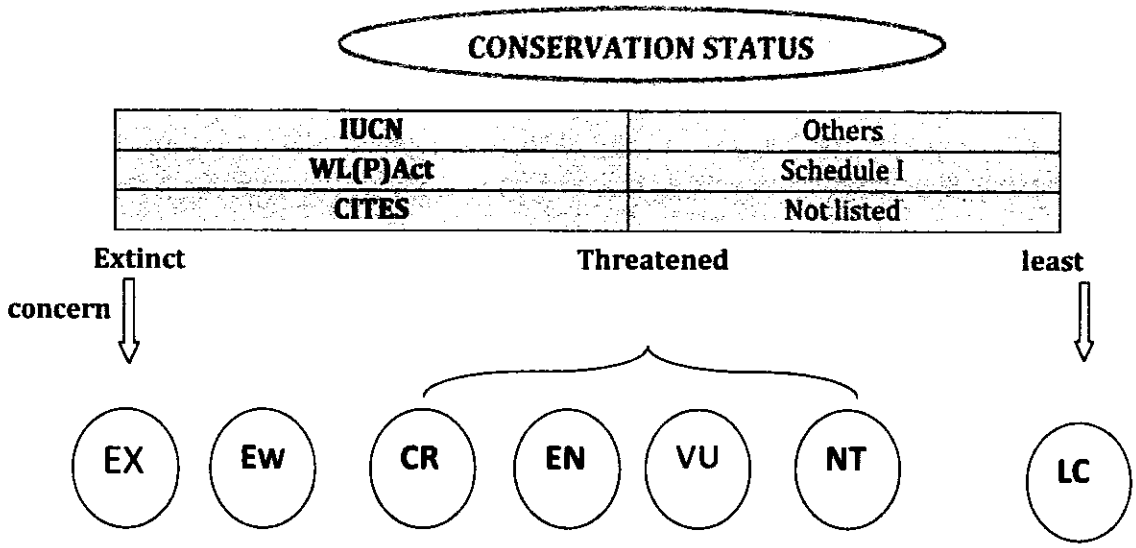
Leopards' ears can hear five times more sounds that the human ear. The leopard's spots are called rosettes because they look like roses

5.4.1 Diet:

Because of their opportunistic nature, leopards tend to consume almost anything that comes in their way. They have a flexible diet pattern. Leopards eat small hoof stock such as gazelle, impala, Deer. On occasion, they may also hunt monkeys, rodents and birds. They often bring their prey up into the branches of a tree to eat it and protect it from other predators and scavengers.

5.5 Conservation and Relationship with Man

Hunting of Indian leopards for the illegal wildlife trade is the biggest threat to their survival. They are also threatened by loss of habitat. A significant immediate threat to wild leopard populations is the illegal trade in poached skins and body parts.



5.6 Perceived threats:

Hunting of Indian leopards for the illegal wildlife trade is the biggest threat to their survival. They are also threatened by loss of habitat. A significant immediate threat to wild leopard populations is the illegal trade in poached skins and body parts.

5.7 Conservation measures needed:

In view of the above threats to the leopard in the area the measures needed for their conservation in the area were discussed with the officers of Forest and Wildlife department. Written suggestions of the Forests and Wildlife Department for conservation of the leopard in the buffer areas were also obtained. Accordingly it is proposed to take the following conservation measures in the buffer area of the project.

5.8 Details of the proposed conservation measures:

A) Protection of existing habitat:

Surrounding forests can be consider as good habitat for panther

B) Protection of existing water holes and development of new water holes:

Drinking water is not available during pinch period (April-June) in most of the area the panther to in the agriculture fields where water Is drawn through tube wells. This unwanted movement creates many problems like- It increase chances of human-panther conflict. This over movement makes animal prone to road accident. To address this problem, it needs to create of well spersed well designed, ecologically suitable water holes. For that purpose a sum of Rs. 10.50 Lacs is to be spent.

C) Strategy to enhance fodder Production:

To enhance more fodder production a mix of nitrogen-fixing legume is also desirable. To ensure more fodder production, two tier systems is desirable. Trees can be planted at appropriate interval to develop fodder production. The best fodder tree as follows:

S. No	Species	Habits	Part useful as fodder
1	Khejari(*Prosopis cineraria*)	Tree	Leaves, Fruits
2	Babool(*Acacia nilotica*)	Tree	Leaves, Fruits
3	Pipal(Ficus religiosa)	Tree	Leaves, Fruits
4	Bargad(*F.benghalensis*)	Tree	Leaves, Fruits
5	Sahajana(*Moringa oleifera*)	Tree	Leaves, Fruits, seeds
6	Ber(*Ziziphus mauritiana*)	Tree	Leaves, Fruits, seeds

D) Public Awareness and Education:

Panther is a zoo-fobic species among community; it is not a new species because it has been living since centuries. It is beneficial to agro-ecosystem too. To highlight importance status of panther, a public awareness and education campaign will be launched in the area. Slide slow, pamphlets, meetings, exhibition etc. will be helpful for this. An amount of Rs. **0.75** Lac is proposed for this activity.

E) Promotion of Eco-Tourism:

Panther conservation area has great potential for development of eco tourism compact lodging facilities will be developed around the nearby villages. For the same local people will be trained as eco-guides so that they can earn their live hood. Local people will be promoted in various activities related with eco-tourism so that socio-economic status can be raised. To develop basic infrastructure for that and watering an amount of Rs.1.00 Lacs is needed.

S. No	Activity / Awareness programme	Budget(In INR)
1	Protection of existing water holes and development of4 new water holes with cost including digging, filling by water tanker and maintenance expenses	10,00,000
2	Plantation- approximately 200 saplings/ (@ Rs. 250/- per saplings with cost include i.e. digging watering maintenance)	50,000
3	Public Awareness and Education (pamphlets, meeting, slide show etc.)	75,000
4	Promotion of Eco-Tourism	1,00,000
	Total	**12,25,000**

CONSERVATION PLAN FOR SLOTH BEAR (*Melursus ursinus*)

6.1 Introduction

The **sloth bear** (*Melursus ursinus*), also known as the **labiated bear** is an insectivorous bear species native to the Indian subcontinent. The sloth bear evolved from ancestral brown bears during the Pleistocene and shares features found in insect-eating mammals through convergent evolution. The population isolated in Sri Lanka is considered a subspecies. Compared to brown and black bears, sloth bears have lankier builds, long, shaggy coats that form a mane around the face, long, sickle-shaped claws, and a specially adapted lower lip and palate used for sucking insects. Sloth bears breed during spring and early summer and give birth near the beginning of winter. They feed on termites, honeybee colonies, and fruits. Sloth bears sometimes attack humans who encroach on their territories. Historically, humans have drastically reduced their habitat and diminished their population by hunting them for food and products such as their bacula and claws. These bears have been used as performing pets due to their tameable nature. The sloth bear is listed as Vulnerable by the IUCN due to habitat loss and poaching..

CLASSIFICATION

Kingdom	Animalia
Phylum	chordata
Class	Mammalia
Order	Carnivora
Sub Order	Caniformia
Family	Ursidae
Genus	Melursus
Species	M. ursinus

6.2 Characteristics, Habitat, Life Cycle and Diet

Characteristics

Sloth bears are distinguished from Asian black bears by their lankier builds, longer, shaggier coats, pale muzzles, and white claws. Adults are medium-sized bears weighing around 130 kg (290 lb) on average, though weight can range variously from 55 to 124 kg (121 to 273 lb) in females and from 80 to 192 kg (176 to 423 lb) in males. They are 60–90 cm (2.0–3.0 ft) high at the shoulder, and have a body length of 1.4–1.9 m (4.6–6.2 ft). Females are smaller than males, and have more fur between their shoulders.

Sloth bear muzzles are thick and long, with small jaws and bulbous snouts with wide nostrils. They have long lower lips which can be stretched over the outer edge of their noses, and lack upper incisors, thus allowing them to suck up large numbers of insects. The premolars and molars are smaller than in other bears, as they do not chew as much vegetation. In adults, the teeth are usually in poor condition, due to the amount of soil they suck up and chew when feeding on insects. The back of the palate is long and broad, as is typical in other ant-eating mammals. The paws are disproportionately large, and have highly developed, sickle-shaped, blunt claws which measure 10 cm (4 in) in length. Their toe pads are connected by a hairless web. They have the longest tail in the bear family, which can grow to 15–18 cm (6–7 in). Their back legs are not very strong, though they are knee-jointed, and allow them to assume almost any position The ears are very large and floppy. The sloth bear is the only bear with long hair on its ears.

Sloth bear fur is completely black (rusty for some specimens), save for a whitish Y- or V-shaped mark on the chest. This feature is sometimes absent, particularly in Sri Lankan specimens. This feature, which is also present in Asian black bears and sun bears, is thought to serve as a threat display, as all three species are sympatric with tigersThe coat is long, shaggy, and unkempt, despite the relatively warm environment in which the species is found, and is particularly heavy behind the neck and between the shoulders, forming a mane which can be 30 cm (12 in) long. The belly and underlegs are almost bare

6.3 Behavior:

Adult sloth bears may travel in pairs, with the males being gentle with cubs. They may fight for food. They walk in a slow, shambling motion, with their feet being set down in a noisy, flapping motion. They are capable of galloping faster than running humans. Although they appear slow and clumsy, both young and adult sloth bears are excellent climbers. They climb to feed and to rest, though not to escape enemies, as they prefer to stand their ground. Sloth bear mothers carry cubs up to 9 months old on their backs instead of sending their cubs up trees as the primary defense against attacks by predators, such as tigers, leopards, and other bears. They are capable of climbing on smooth surfaces and hanging upside down like sloths. They are good swimmers, and primarily enter water to play. To mark their territories, sloth bears scrape trees with their forepaws, and rub against them with their flanks. Sloth bears have a great vocal range. Gary Brown, in his Great Bear Almanac, lists over 25 different sounds in 16 different contexts. Sounds such as barks, screams, grunts, roars, snarls, whickers, woofs,

and yelps are made when angered, threatening, or when fighting. When hurt or afraid, they shriek, yowl, or whimper. When feeding, sloth bears make loud huffing and sucking noises, which can be heard over 100 m away. Sounds such as gurgling or humming are made by bears resting or sucking their paws. Sows emit crooning sounds to their cubs. The species is the most vociferous when mating, and make loud, melodious calls when doing so. Sloth bears do not hibernate. They make their day beds out of broken branches in trees, and rest in caves during the wet season. Sloth bears are the most nocturnal of bears, though sows become more active in daytime when with cubs

6.4.1 REPRODUCTION

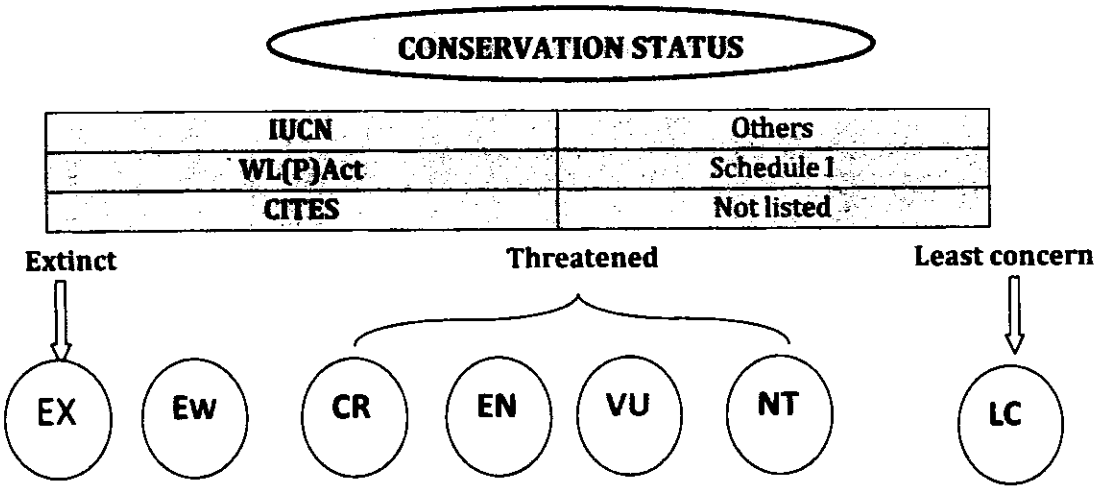
The breeding season for sloth bears varies according to location: in India, they mate in April, May, and June, and give birth in December and early January, while in Sri Lanka, it occurs all year. Sows gestate for 210 days, and typically give birth in caves or in shelters under boulders. Litters usually consist of one or two cubs, or rarely three. Cubs are born blind, and open their eyes after four weeks. Sloth bear cubs develop quickly compared to most other bear species: they start walking a month after birth, become independent at 24–36 months, and become sexually mature at the age of three years. Young cubs ride on their mother's back when she walks, runs, or climbs trees until they reach a third of her size. Individual riding positions are maintained by cubs through fighting. Intervals between litters can last

6.4.2 Diet:

Sloth bears are expert hunters of termites, which they locate by smell. On arriving at a mound, they scrape at the structure with their claws till they reach the large combs at the bottom of the galleries, and disperse the soil with violent puffs. The termites are then sucked up through the muzzle, producing a sucking sound which can be heard 180 m away. Their sense of smell is strong enough to detect grubs 3 ft below ground. Unlike other bears, they do not congregate in feeding groups. They rarely prey on other mammals. Sloth bears may supplement their diets with fruit and plant matter; in March and April, they eat the fallen petals of mowha trees and are partial to mangoes, sugar cane, jackfruit, and the pods of the golden shower tree. Sloth bears are extremely fond of honey. When feeding their cubs, sows are reported to regurgitate a mixture of half-digested jack fruit, wood apples, and pieces of honeycomb. This sticky substance hardens into a dark yellow, circular, bread-like mass which is fed to the cubs. This "bear's bread" is considered a delicacy by some of India's natives

6.5 Conservation and Relationship with Man

Hunting of Indian sloth bear for the illegal wildlife trade is the biggest threat to their survival. They are also threatened by loss of habitat.



6.6 Perceived threats:

Population threats;-

Sloth bear populations in India appear to be significantly threatened by poaching. Gall bladders and other parts from poached bears are typically exported. Other threats include the capture of live bears (mainlycubs, after the mother is killed) and some killing o fnuisance bears. Like the trade in parts, the extent of theseactivities varies regionally.

H.S. Pabla (Joint Director of the Wildlife Institute of India, Dehra Dun, Uttar Pradesh,in litt. 1993) indicated that capture of sloth bears forstreet shows is still a concern in Madhya Pradesh. Likewise, the Wildlife Protection Society of India (in litt.1996) reported a "thriving business in captive street entertainment bears" in a heavy tourist area of UttarPradesh, as well as some export of live sloth bears to Pakistan for bear baiting (fights with dogs).

Habitat threats:-

Loss of forested areas outside parks and reserves poses a major threat to sloth bears because it causes population fragmentation, thereby leaving small, nonviable populations within the parks. A high degree of dispersion among protected areas with sloth bears is eviden. Furthermore, habitat degradation outside the parks, caused by overgrazing, overharvest of forest products

(cutting timber, lopping branches, collecting fruits and honey)

6.7 Conservation measures needed:

In view of the above threats to the Sloth bear in the area the measures needed for their conservation in the area were discussed with the officers of Forest and Wildlife department. Written suggestions of the Forests and Wildlife Department for conservation of the sloth bear in the buffer areas were also obtained. Accordingly it is proposed to take the following conservation measures in the buffer area of the project.

6.8 Details of the proposed conservation measures:

A) Protection of existing habitat:

Surrounding forests can be considered as good habitat for sloth bear.

B) Protection of existing water holes and development of new water holes:

Drinking water is not available during pinch period (April-June) in most of the area the bear to in the agriculture fields where water Is drawn through tube wells. This unwanted movement creates many problems like- It increase chances of human-bear conflict. This over movement makes animal prone to road accident. To address this problem, it needs to create of well spersed well designed, ecologically suitable water holes. For that purpose a sum of Rs. 5.0 Lacs is to be spent.

C) Strategy to enhance fodder Production:

Fruit bearing plant species will be developed.

D) Public Awareness and Education:

Education should emphasize the importance of maintaining entire forest ecosystems of which sloth bears and other large mammals are a part. Charismatic mega fauna like tigers, rhinos, and elephants naturally garner the most attention. In developing a conservation ethic that protects these species against habitat degradation and poaching, sloth bears will gain protection as well.

To highlight importance status of sloth bear, a public awareness and education campaign will be launched in the area. Slide slow, pamphlets, meetings, exhibition etc. will be helpful for this. An amount of Rs. **0.75** Lac is proposed for this activity.

E) Promotion of Eco-Tourism:

Sloth bear conservation area has great potential for development of eco tourism compact lodging facilities will be developed around the nearby villages. For the same local people will be trained as eco-guides so that they can earn their live hood. Local

people will be promoted in various activities related with eco-tourism so that socio-economic status can be raised. To develop basic infrastructure for that and watering an amount of Rs.1.00 Lacs is needed.

Budgetary Details

1	Protection of existing water holes and development of 2 new water holes with cost including digging, filling by water tanker and maintenance expenses	5,00,000
2	Plantation- approximately 200 saplings/ (@ Rs. 250/- per saplings with cost include i.e. digging watering maintenance)	50,000
3	Public Awareness and Education (pamphlets, meeting, slide show etc.)	75,000
4	Promotion of Eco-Tourism	1,00,000
	Total	**7,25,000**

(एस० आर० यादव)
उप वन संरक्षक (वन्यजीव)
मुकन्दरा राष्ट्रीय उद्यान
कोटा

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ANNEXURE - XIV

By Speed Post

No. J-11015/154/2015-IA.II (M)
Government of India
Ministry of Environment, Forest & Climate Change
Impact Assessment Division
***

Indira Paryavaran Bhavan,
Vayu Wing, 3rd Floor, Aliganj,
Jor Bagh Road, New Delhi-110 003
Telefax: 24695304
Email: sridhar-mef@nic.in

Dated: 11th June, 2015

To

M/s Kanhaiyalal Rameshwar Das
B-72, Ballabh Nagar,
Kota-324007, Rajasthan

Tel. No. 0744-2501311; Fax: 0744-2501711
Email: arorasundar@yahoo.com

Sub.:- Sandstone Mine with production capacity of Existing –80,000 TPA (ROM), After Expansion – 2,50,000 TPA (ROM) of M/s Kanhaiyalal Rameshwar Das at village – Dhaneshwar & Sutara, Tehsil & District – Bundi, Rajasthan (618.34 ha)- TOR regarding.

Ref:- Online proposal no. IA/RJ/MIN/27482/2015.

Sir,

This has reference to above mentioned proposal for determining the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, the Proponent had submitted information in the prescribed format (Form-1) along with a Pre-feasibility Report. The proposal was considered by the Reconstituted Expert Appraisal Committee in its 33rd meeting held during May 15th, 2015.

2. The proposal of M/s Kanhaiyalal Rameshwar Das is for Sandstone Mine with enhancement production capacity of 2,50,000 TPA (ROM) in the mine lease area of 618.34 ha. The mine is located at Village – Dhaneshwar & Sutara, Tehsil & District – Bundi, Rajasthan for an area of 618.34 ha. The geographical co-ordinates of the site are Latitude: 25°02'53.10" to 25°04'40.78"N and Longitude: 75°32'29.21" to 75°36'01.12" E and is covered by Survey of India Toposheet No. 45 O/12.

3. The mining lease area of 618.34 ha consists of 289.0 ha of Govt. waste land, 150.0 ha of Private Khatedari land, 104.34 ha of Diversified Forest land and 75.0 ha of Grazing land. The mining is being carried out by opencast semi-mechanized method as per the approved mining plan. The estimated Project cost will be Rs. 8.0 Crore. It has been proposed to produce approximately 2,50,000 TPA (ROM) of Sandstone. Total mineable reserve available is 10.70 MT. The expected life of mine will be 42.80 years. Total waste and overburden generated during the plan period will be 6.14 lac m^3. The mineral will be

transported through trucks/ tippers. It was reported by the Project Proponent that there is no court case/ litigation pending against the Project.

4. It is also brought to the knowledge of Committee that the Jawahar Sagar Wildlife Sanctuary exists just adjacent to mine lease in south direction. Committee suggested that application to NBWL should be made immediately. Also, detailed precautionary measures towards conservation of wild life should be mentioned in EIA/EMP Report.

5. Based on the information content in the documents submitted and the presentation made before the Committee for mining projects, the following TOR are prescribed for undertaking detailed EIA study:-

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.

2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.

3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.

4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

5) Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or

administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study rea will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State

Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season) ; December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of

mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

6. Besides the above, the below mentioned general points are also to be followed:-

a) All documents to be properly referenced with index and continuous page numbering.
b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
d) Where the documents provided are in a language other than English, an English translation should be provided.
e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

7. The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

8. The prescribed TORs would be valid for a period of three years for submission of the EIA/EMP reports, as per the O.M. No. J-11013/41/2006-IA.II(I) dated 22.3.2010, 22.08.2014, 08.10.2014 and 07.11.2014.

9. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

Yours faithfully,

(Dr. U. Sridharan)
Director (S)

Copy to:

1). **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi
2). **The Secretary**, Department of Mines & Geology, Government of Rajasthan Secretariat, Jaipur.
3). **The Secretary**, Department of Environment, Government of Rajasthan, Secretariat, Jaipur.
4). **The Secretary**, Department of Forest, Government of Rajasthan, Secretariat,

Jaipur.

5. **The Additional Principal Chief Conservator of Forests,** Ministry of Environment, Forest and Climate Change, Regional Office (CZ), Kendriya Bhawan, 5th Floor, Sector "H", Aliganj, Lucknow – 226020.
6. **The Member Secretary,** Rajasthan State Pollution Control Board, 4, Institutional area, Jhalana, Doongri, Jaipur.
7. **The Controller General,** Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur - 440 001
8. **The District Collector, Bundi** District, State of Rajasthan.
9. **Guard File.**
10. **MoEF website.**

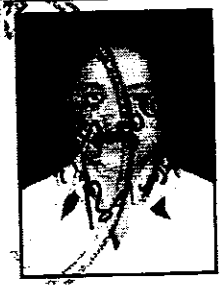
(Dr. U. Sridharan)
Director (S)

ANNEXURE - XV

अनुज्ञप्ति प्ररुप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)
(See article 3(a) to (d) of Part 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1,2,3,4,5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञप्ति
Licence to possess : (c) for use,explosives of class 1, 2,3,4,5,6 or 7 in a magazine



अनुज्ञप्ति सं. (Licence No.) : E/NC/RJ/22/226(E9879)
वार्षिक फीस रुपए (Annual Fee Rs): 5000/-

1. Licence is hereby granted to

M/S KANHAIYA LAL RAMESHWAR DASS (अधिभोगी / Occupier : Ashok bassi), RISHABH BHAWAN NEW COLONY,GUMANPURA, KOTA (RAJ), Town/Village - , District-, State-, Pincode - 324007

को अनुज्ञप्ति अनुदत्त की जाती है।

2. अनुज्ञप्तिधारी की प्रास्थिति | Status of licensee : **Individual**

3. अनुज्ञप्ति निम्नलिखित प्रयोजनों के लिए विधिमान्य है। Licence is valid only for the following purpose. : possess for use of **Nitrate Mixture, Safety Fuse, Detonating Fuse, Electric and/or Ordinary Detonators,** - के उपयोग के लिए

4. अनुज्ञप्ति विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।
Licence is valid for the following kinds and quantity of explosives: -- (क) (a)

क Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2 ,0	0	2000 Kg.
2.	Safety Fuse	6 ,1	0	15000 Mtrs
3.	Detonating Fuse	6 ,2	0	15000 Mtrs
4.	Electric and/or Ordinary Detonators	6 ,3	0	20000 Nos.

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञप्ति के लिए]
(b) Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)] : **2 times as above.**

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञप्त परिसर की पुष्टि होती है।
The licensed premises shall conform to the following drawing(s): रेखाचित्र क्र. (Drawing No.) E/NC/RJ/22/226(E9879) दिनांक (Dated) 04/10/1993

6. अनुज्ञप्ति परिसर निम्नलिखित पते पर स्थित हैं। The licensed premises are situated at following address:
Survey No(s). 660 , ग्राम (Town/Village) : DHANESHWAR **पुलिस थाना (Police Station) : Bundi**
जिला (District) **BUNDI** राज्य (State) **Rajasthan** पिनकोड (Pincode)
दूरभाष (Phone) ई. मेल (E-Mail) फैक्स (Fax)

7. अनुज्ञप्ति परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं। The licensed premises consist of following facilities. : **NA**

8. अनुज्ञप्ति समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबध्दों के अधीन रहते हुए अनुदत्त की जाती है।
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures.

1. उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
2. अनुज्ञप्ति प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञप्ति की शर्तें और अतिरिक्ति शर्तें।
Conditions and Additional Conditions of this licence signed by the licensing authority.
3. दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञप्ति तारीख 31 मार्च 1995 तक विधिमान्य रहेगी। This licence shall remain valid till **31st day of March 1995.**

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपवर्णित इस अनुज्ञप्ति की शर्तों का अधिक्रमण करने या यदि अनुज्ञप्त परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरुप नहीं पाए जाने पर निलंबित या प्रतिसंहृत की जा सकती है, जहां वह लागू हो।
This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

Sd/-

तारीख | The Date - 04/10/1993

संयुक्त मुख्य विस्फोटक नियंत्रक | **Joint Chief Controller of Explosives**
North Circle, Faridabad

नवीनीकरण के पृष्ठांकन के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख Date of Renewal	समाप्ति की तारीख Date of Expiry	अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प Signature of licensing authority and stamp
19/03/2014	31/03/2019	Dy. Chief Controller of Explosives, Jaipur उप मुख्य विस्फोटक नियंत्रक जयपुर

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दांडिक अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

ANNEXURE - XVI

मैसर्स कन्हैयालाल रामेश्वर दास की सेण्ड स्टोन खनन परियोजना, एम.एल. नं. 47/94, क्षेत्रफल 618.34 हेक्टेयर, निकट ग्राम धनेश्वर एवं सूतडा, तहसील एवं जिला बून्दी में प्रस्तावित उत्पादन क्षमता विस्तार (80 हजार टन प्रतिवर्ष से 250000 प्रतिवर्ष) के संबंध में दिनांक 11/05/2016 को आयोजित जन सुनवाई का कार्यवृत्त

वन एवं पर्यावरण मंत्रालय, भारत सरकार द्वारा जारी पर्यावरणीय प्रभाव आंकलन अधिसूचना दिनांक 14.09.2006, के प्रावधानों के अन्तर्गत जिला कलेक्टर कार्यालय बून्दी के आदेश क्रमांक 22 दिनाक 30/03/2016 एवं 23 दिनांक 04/04/2016 की अनुपालना में मैसर्स कन्हैयालाल रामेश्वर दास की खनन परियोजना एम.एल. नं. 47/94 निकट ग्राम धनेश्वर एवं सूतडा, तहसील एवं जिला बून्दी में प्रस्तावित उत्पादन क्षमता विस्तार (80 हजार टन प्रतिवर्ष से 250000 प्रतिवर्ष) की पर्यावरणीय स्वीकृति हेतु जनसुनवाई दिनांक 11.05.2016 को दोपहर 11 बजे जिला कलक्टर, बून्दी के प्रतिनिधि श्री रामजीवन मीणा, अतिरिक्त जिला कलक्टर, बून्दी की अध्यक्षता में अटल सेवा केन्द्र, ग्राम पंचायत मुख्यालय धनेश्वर पंचायत समिति तालेडा जिला बून्दी के परिसर में आयोजित की गई।

जनसुनवाई में उपस्थित व्यक्तियों का विवरण मय हस्ताक्षर परिशिष्ठ "अ" में सलंग्न है। जनसुनवाई बाबत् विज्ञप्ति दिनांक 05.04.2016 को कोटा दैनिक भास्कार एवं राजस्थान पत्रिका समाचार पत्रों में प्रकाशित करवाई गई थी। जिसकी प्रतियां परिशिष्ठ "ब" में सलंग्न है।

बैठक की कार्यवाही प्रारम्भ करते हुए श्री अमित शर्मा, क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, कोटा ने सभी आगुंतको का स्वागत करते हुए वन एवं पर्यावरण मंत्रालय, भारत सरकार द्वारा जारी पर्यावरणीय प्रभाव आंकलन अधिसूचना दिनांक 14.09.2006 के अन्तर्गत जनसुनवाई की आवश्कता/प्रक्रिया के बारे में अवगत करवाया एवं अध्यक्ष महोदय की अनुमति से प्रस्तावित परियोजना के संबंध में विस्तृत प्रस्तुतिकरण हेतु मैसर्स कन्हैयालाल रामेश्वर दास के प्रतिनिधि को आमंत्रित किया।

उक्त प्रस्तुतिकरण के समाप्त होने के बाद क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, कोटा ने उपस्थित जनसमुदाय को उनके आक्षेप/सुझाव दिये जाने हेतु आमंत्रित किया।

उपस्थित जनसमुदाय द्वारा दिये गये सुझावों/आक्षेपों का विवरण निम्नानुसार है–

1. सर्वप्रथम श्री रामस्वरूप मीणा निवासी ग्राम धनेश्वर के द्वारा खनन क्षेत्र में की जा रही ब्लास्टिंग के कारण क्षेत्र के मकानो में हो रहे नुकसान के बारे में अपनी परेशानी जाहिर की गई । उन्होंने बताया की मुख्य परेशानी ब्लास्टिंग का समय निर्धारित नहीं होने के कारण होती हैं।

2. श्री साहब सिंह पूर्व पंचायत सदस्य के द्वारा खनन कार्यो के कारण क्षेत्र के आर्थिक व सामाजिक विकास के संबंध में जानकारी दी गई एवं कहा गया की क्षेत्र में खनन गतिविधियों को चालू रखा जाना इलाके के विकास के लिए अत्यन्त आवश्यक है उन्होनें कहा की खननकर्ताओ के द्वारा क्षेत्र में वृक्षारोपण को और बढाया जाना चाहिए तथा खनन कार्यो में लगे हुए श्रमिक परिवारो के बच्चो को शिक्षा संबंधित सुविधाएं सुनिश्चित किये जाने की जिम्मेदारी खननकर्ताओ को लेनी चाहिए।

3. श्री नरेश निवासी धनेश्वर के द्वारा खनन कार्यो में स्थानीय लोगो को अधिक से अधिक रोजगार देनी संबंधी बात कही गई ।

4. श्री मुकेश सुवालका एवं अन्य निवासी धनेश्वर के द्वारा बूंदी सिलिका कम्पनी नामक फर्म से हो रही परेशानी के संबंध में लिखित आवेदन दिया गया जिसकी मूल प्रति संलग्न की जा रही है।

5. श्री सुरेश सुवालका निवासी धनेश्वर के द्वारा खनन क्षेत्र में हो रही ब्लास्टिंग से क्षेत्र के मकानो में पड रही दारारों एवं बच्चो को संभावित खतरे के संबंध में जानकारी दी गयी। उन्होंने बताया की इस क्षेत्र के पास ही एक स्कूल संचालित है जिसमें कि लगभग 200 बच्चे पढते हैं। अतः ब्लास्टिंग कार्य से स्कूल एवं बच्चो को भी खतरा हैं । ब्लास्टिंग का समय निर्धारित नहीं होना समस्या का सबसे बढा कारण हैं।

6. श्री मुकेश कुमार मीणा निवासी धनेश्वर के द्वारा कहा गया की धनेश्वर सूतडा क्षेत्र ने उनन गतिविधियों के कारण क्षेत्र का आर्थिक व सामाजिक विकास संभव हो पाया है। खननकर्ताओ को क्षेत्र के आर्थिक एवं सामाजिक विकास के कार्यो को और बढाये जाने की आवश्यकता है।

उक्त विचारो के संबंध में परियोजना प्रस्तावक के प्रतिनिधि द्वारा बताया गया कि उनके द्वारा खनन कार्यो हेतु संबंधित विभाग डीजीएमएस की अनुमति एवं डीजीएमएस के निर्धारित मानको के अनुरूप नियंत्रित रूप से ब्लास्टिंग की जाती है तथा भविष्य में भी उनके द्वारा इस बाबत् निर्धारिक मापदण्डो का पालन किया जावेगा। इसके अलावा उन्होने कहा की मैसर्स कन्हैयालाल रामेश्वर दास के द्वारा क्षेत्र के आर्थिक एवं सामाजिक विकास हेतु विभिन्न गतिविधियां सतत् रूप से की जाती रही हैं। परियोजना के वर्तमान विस्तार में भी आर्थिक एवं सामाजिक दायित्वों के बारे में प्रस्तावना दी गयी हैं । जिनकी पूर्ण रूप से पालना की जावेगी ।

जनसुनवाई की कार्यवाही के दौरान जिला कलेक्टर बूंदी के प्रतिनिधि श्री मीणा के द्वारा उपस्थित जनसमुदाय को अपने अन्य सुझावो अथवा आक्षेपो हेतु पुनः आमंत्रित किया गया। अन्त में उनके द्वारा बताया गया की उनके द्वारा उठायी गई समस्याओं को जन सुनवाई के कार्यवृत्त में शामिल किया जावेगा तथा भारत सरकार के वन, पर्यावरण एवं जलवायु परिवर्तन मंत्रालय नई दिल्ली को जन सुनवाई की फोटोग्राफी एवं विडियोग्राफी के साथ प्रेषित किया जावेगा।

अन्त में क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, कोटा ने अतिरिक्त जिला कलक्टर की अनुमति से जनसुनवाई की समाप्ति की घोषणा की।

(अमित शर्मा)
क्षेत्रीय अधिकारी
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल,
कोटा

(रामजीवन मीणा)
अतिरिक्त जिला कलक्टर,
जिला बून्दी

R.O. P.C.B. Kota
जनसुनवाई की कार्यवाही
विवरण में शामिल करें।
Dy. Tehsil
ADM

Page:
Date:

सेवा में
श्रीमान् जिला कलेक्टर साहेब

विषय- कुन्दनी सिलीका कम्पनी से हमें जो परेशानी है

1. ब्लास्टींग
2. प्रदूषण

1. ब्लास्टींग- होने से हमारी समस्या है की हमारे घरों की छत पर दरारे व दिवारों पर दरारे होगई है जब ब्लास्टींग होती तब हमारे बच्चे घरों के बाहर आकर डर भयभीत होगये है जैसे उनको लगता है जैसे कोई भूकम्प आया हो ब्लास्टींग से हमारे घरों की छत से बरसात मे पानी टपकता है और सारा घर बच्चे परेशान होते है और बच्चे स्कूल नही जा पाते है शिक्षा की प्रबन्ध नही है इस कम्पनी शिक्षा का कोई भी स्कूल नही खोला है।

2. प्रदूषण- ब्लास्टींग से जो प्रदूषण होता है जिससे हमारा, हमारे बच्चे जैसी भयंकर बिमारी से मजबूर परेशान है, जिसकी तरफ से कम्पनी के कोई उपचार नही है

शिवकुमार चेजारा - 7742328282

रामलाल
सुरेश/रामलाल
किशन
मुकेश
रामलाल
9649652044

धीरज

बीरम

महा परिवार

रामकरण

मोबा- 9828405211

मनोहरलाल

बीरम

मुन्ना

देवदयाल

रोहिता

उपस्थिति पंजिका

दिनांक 11.05.2016 को मेसर्स Kanhaiya Lal Rameshwar Dass(एम.एल. नं. 47/94) के लिये कार्यालय राजस्थान राज्य प्रदूषण नियंत्रण मण्डल,कोटा (राज.) द्वारा जारी पत्र कमांक RSPCB/RO KOTA/KBU-1450/30 दिनांक 04.04.16 की पालना में स्थान Atal Sewa Kendra, Gram Panchayat Dhaneshwar, Dist.Bundi पर आयोजित की गई जनसुनवाई में उपस्थित आमजन की सूची

कम संख्या	नाम	पता	हस्ताक्षर
1.	देवीलाल	धनेश्वर	देवीलाल
2.	[illegible]	ADM Bundi	[illegible]
3.	Amit Sharma	EE & RO RSPCB, Kota	[illegible]
4.	S.S. Arora	7-A, Rallaka Nagar, Kota	[illegible]
5.	छाजीलाल	धनेश्वर	छाजीलाल
6.	कालूराम	"	[illegible]
7.	विनयलाल	"	[illegible]
8.	उदयलाल	धनेश्वर	[illegible]
9.	दुर्गालाल	"	[illegible]
10.	[illegible]	"	[illegible]

	नाम	पता	हस्ताक्षर
11.	[illegible]	[illegible]	[illegible]
12.	[illegible]	[illegible]	[illegible]
13.	बाबूलाल	[illegible]	[illegible]
14.	[illegible]	[illegible]	[illegible]
15.	रामलाल	[illegible]	[illegible]
16.	मुकेश [illegible]	[illegible]	मुकेश [illegible]
17.	[illegible]	[illegible]	[illegible]
18.	सुनिल [illegible]	[illegible]	[illegible]
19.	[illegible]	[illegible]	[illegible]
20.	[illegible]	[illegible]	[illegible]
21.	[illegible]	[illegible]	[illegible]
22.	[illegible]	[illegible]	[illegible]
23.	मुकेश [illegible]	"	[illegible]
24.	शांतीलाल	[illegible]	[illegible]
25.	[illegible]	[illegible]	[illegible]
26.	[illegible]	[illegible]	[illegible]

	नाम	पता	हस्ताक्षर
27.	सोनम	[illegible]	[illegible]
28.	[illegible]	[illegible]	[illegible]
29.	[illegible]	[illegible]	[illegible]
30.	[illegible]	[illegible]	[illegible]
31.	सुरेश	[illegible]	सुरेश
32.	[illegible]	[illegible]	[illegible]
33.	[illegible]	[illegible]	[illegible]
34.	[illegible]	[illegible]	[illegible]
35.	[illegible]	[illegible]	[illegible]
36.	प्रेमप्रकाश	[illegible]	[illegible]
37.	[illegible]	[illegible]	[illegible]
38.	[illegible]	[illegible]	[illegible]
39.	[illegible]	[illegible]	[illegible]
40.	[illegible]	[illegible]	[illegible]
41.	[illegible]	[illegible]	[illegible]
42.	[illegible]	[illegible]	[illegible]

	[illegible]	[illegible]	[illegible]
43	दुर्गाशंकर	[illegible]	[illegible]
44	[illegible]	[illegible]	[illegible]
45	महावीर	[illegible]	[illegible]
46	[illegible]	[illegible]	[illegible]
47	[illegible]	[illegible]	[illegible]
48	[illegible]	[illegible]	[illegible]
49	[illegible]	[illegible]	[illegible]
50	[illegible]	[illegible]	[illegible]
51	[illegible]	[illegible]	[illegible]
52	[illegible]	[illegible]	[illegible]
53	[illegible]	[illegible]	[illegible]
54	[illegible]	[illegible]	[illegible]
55	[illegible]	[illegible]	[illegible]
56	[illegible]	[illegible]	[illegible]
57			

क्रमांक	नाम	पद	हस्ताक्षर
58	Neha Bhargava	EESPL Jaipur	Neha
59	Vikrant Mahendra	Entegra, Jaipur	Vikrant
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5

क्षेत्रीय कार्यालय

राजस्थान राज्य प्रदूषण नियंत्रण मण्डल

[illegible] नं. 8, इन्द्रप्रस्थ औद्योगिक क्षेत्र, कोटा–324004 दूरभाष: 0744-2490873

क्रमांक: [illegible]/क्षेत्र कोटा/ [illegible]–1450/30 दिनांक: 04.04.2016

[illegible] के लिए [illegible]

[illegible] के [illegible] किया जाता है कि [illegible] नाथ, [illegible], [illegible] 47/[illegible] [illegible] द्वारा [illegible] खनन परियोजना [illegible] के [illegible] (50000 टन से 250000 टन प्रतिवर्ष) के सम्बन्धित [illegible] हेतु आवेदन, भारत सरकार के वन, पर्यावरण एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली के समक्ष प्रस्तुत किया गया है।

[illegible] के द्वारा उक्त खनन परियोजना के लिए पर्यावरणीय [illegible] हेतु आवेदन मय दस्तावेजों के राजस्थान राज्य प्रदूषण [illegible] के समक्ष प्रस्तुत किया गया है।

[illegible] के उक्त परियोजना हेतु वन, पर्यावरण एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली [illegible] दिनांक 14.09.2006 के प्रावधानों के अनुसरण में जन सुनवाई हेतु [illegible] की सूचना प्रकाशित कर 30 दिवस का नोटिस दिया जाना अपेक्षित है।

[illegible] परियोजना के संबंधित पर्यावरणीय प्रभाव आकलन रिपोर्ट एवं संबंधित कार्यपालक सार निम्न [illegible] (1) [illegible] जिला कलक्टर, बूंदी। (2) कार्यालय, जिला परिषद, [illegible] (3) [illegible] राजस्थान प्रदूषण नियंत्रण मण्डल, कोटा। (4) सदस्य सचिव, [illegible] पर्यावरण [illegible] संस्थानिक क्षेत्र, झालावाड़ रोड, जयपुर। (5) [illegible] बूंदी। (6) कार्यालय, जनपद अधिवक्ता, खान एवं भू-विज्ञान [illegible] बूंदी। (7) पर्यावरण विभाग, राजस्थान सरकार, सचिवालय, [illegible] को सूचित किया जाता है कि [illegible] के पर्यावरणीय [illegible] के लिए जन सुनवाई [illegible] दिनांक 11.05.2016 को [illegible] 11.00 [illegible] सुनवाई / आपत्ति प्रस्तुत कर सकते हैं। [illegible] 30 दिवस के [illegible] कोटा में भी प्रस्तुत कर सकते हैं।

[illegible] से: क्षेत्रीय अधिकारी

ANNEXURE - XVII

INDIA NON JUDICIAL

५०० रु. Rs 500

सत्यमेव जयते

भारत

पाँच सौ रुपये FIVE HUNDRED RUPEES

DEED OF PARTNERSHIP

THIS DEED OF PARTNERSHIP is made and entered into this Tenth day of January, in the year Two Thousand Two by and between :

1. Shri Kishan Ghatiwala
   S/o Late Shri Kanhaiya Lal Ghatiwala
   r/o K-9, Duryadas Path,
   C-Scheme, Jaipur

   OF THE FIRST PART

2. Shri Anil Ghatiwala
   S/o. Late Shri Giriraj Ghatiwala
   r/o. Krishna Bhawan, Chaura Rasta,
   Jaipur for and on behalf of
   M/s Giriraj Ghatiwala (HUF) representing
   as Karta thereof

   OF THE SECOND PART

3. Shri Hari Ballabh Ghatiwala
   S/o Late Shri Kanhaiya Lal Ghatiwala
   r/o Krishna Bhawan,
   Chaura Rasta, Jaipur

   OF THE THIRD PART

4. Shri Mohan Lal Ghatiwala (Ajmera)
   S/o Late Shri Gopi Chand Ghatiwala
   r/o 7-A BALLABH NAGAR,
   Kota

   OF THE FOURTH PART

5. Shri Suraj Mal Bansal
   S/o Late Shri Rameshwar Das
   r/o 7, Purohit Gopi Nath Marg, Jaipur
   For and on behalf of M/s Suraj Mal (HUF)
   representing as Karta thereof

   OF THE FIFTH PART

6. Shri Navneet Bansal
   S/o Shri Chandra Bihari Bansal
   r/o 7, Purohit Gopi Nath Marg
   Jaipur

   OF THE SIXTH PART

Contd....2..

7. Shri Ashok Bansal
S/o Shri Gulab Chand Bansal
r/o Kumari , Kota

OF THE SEVENTH PART

A N D

8. Shri Jai Vardhan Bansal
S/o Shri Chandra Bihari Bansal
r/o 7, Gopi Nath Marg,
Jaipur

OF THE EIGHTH PART

(each of them hereinafter referred to as 'the partner' and all of them collectively referred to as 'the partners' AND party of first part to party of fourth part collectively as A - Group and party of fifth part to eighth part collectively as B-Group).

THAT WHEREAS Late Shri Kanhaiya Lal Ghatiwala had been holding the mining lease of 10 Sq. K.M. of sand stone quarries at village Dhaneshwar, Sutara etc. Tehsil and District Bundi AND the said Late Shri Kanhaiya Lal Ghatiwala alongwith party of fifth part, party of sixth part & Smt. Santosh Devi Ghatiwala W/o Late Shri Girraj Ghatiwala had been carrying on business in partnership for the smooth and efficient working and systematic devalopment of the above mentioned mine under the name and style of M/S. KANHAIYALAL RAMESHWAR DAS on the terms and conditions set forth in the deed of partnership executed by and between them on 28.10.1984 AND WHEREAS the said Smt. Santosh Devi Ghatiwala retired from the firm w.e.f. 1.4.1990 AND FURTHER WHEREAS the party of first, second and third parts were admitted into the partnership w.e.f. 1.4.1990 and the parties of first, second, third, fifth and sixth parts alongwith Late Shri Kanhaiya Lal Ghatiwala were since then carrying on business in partnership on the terms and conditions set forth in the deed of partnership executed by and between them on 5th day of April, 1990 as varied by deed of partnership executed by and between them on 1st day of July, 1992. AND WHEREAS the party of Seventh and Eighth parts offered themselves to be admitted as working partners in the firm as from 1st day of April, 1996 to which looking to business exigencies and other diversed valid reasons the other partners agreed to and so the parties of seventh and eight parts were admitted into partnership as from 1st day of April, 1996 as varied by deed of partnership executed by and between them on 1st day of April, 2000.

AND WHEREAS the said Shri Kanhaiya Lal Ghatiwala has expired his last on 4th day of January, 2002 and by virtue of clause (12) of partnership deed dated 1-4-2000 the partnership did not dissolve on his death but continued to subsist amongst surviving partners AND WHEREAS the said Shri Kanhaiya Lal Ghatiwala made a will dated 23-4-1996 under which he bequeathed 50% of said mining lease rights amongst parties of first to third parts and 50% of the said mining lease rights amongst parties of fifth part to eighth part subject to approval of said change by competent authorities of Government. AND FURTHER WHEREAS he bequeathed his share in partnership amongst parties of first to third parts and to party of fourth part for acting as working partner on his admission in partnership and directed them to adjust their respective shares in the partnership as per his wishes to which parties of first to third part agreed and party of fourth part offered himself to be admitted as working partner in the partnership as from 5-1-2002 to which all the partners consented and agreed to and the parties hereto have been carrying on the business in partnership as from the said fifth day of January, 2002 on the terms and conditions set forth herein below :

NOW THIS DEED OF PARTNERSHIP witnesseth and it is hereby agreed amongst the parties hereto as follows :-

1. That the business shall be continued to be carried on under the name and style of M/s. KANHAIYALAL RAMESHWAR DAS (hereinafter referred to as 'the firm') provided that if mutually decided upon and consented by the partners the business may be carried on under any other name and style in place of or in addition to the said firm name.

Contd....3..

2. That the principal place of the business of partnership shall be at Kota in the state of Rajasthan and the business of partnership may be extended to and or carried on at any other place or places, state or states, country or countries, whatsoever as the partners may from time to time at any time determine and agreed upon.

3. That the business of the firm shall be that of prospecting, mining, carrying and working of the mines and quarries for the extraction, refinement, processing and sale of sand stone slabs and other metal ores, minerals and things of all types and description in the state of Rajasthan and such other state or states place or places, as partners may from time to time at any time agree upon.

4. That the partners hereby declare that this reconstituted partnership was commenced with effect from the 5th day of January, 2002.

5 That the partnership shall be partnership at will and it shall be open to either of the partners of A Group or partners of B - Group to determine or terminate the partnership at any time hereafter by giving clear six months' notice in writing in this behalf to partners of other Group. The partnership shall be deemed to have determined or terminated on the expiry of clear six months' from the date of such notice is served by partners of one group determining or terminating the partnership on the partners of other group, provided however that for the purpose of this clause, the said notice shall be deemed to have been properly and effectively served on the date, it is delivered or caused to be delivered by hand or if posted (and it shall be posted under a registered cover, acknowledgement due at the regular business or residential address of the partner on whom this intended to be served) on the date it is received by the other Group of partners. It is specifically agreed that except as provided hereinabove no partner shall have right to dissolve, determine or terminate the partnership in any manner whatsoever. Any partner, however shall have right to retire from the partnership by giving clear six months notice in writing to the other partners in the manner laid down hereinabove and thereafter such partner shall be deemed to have been retired from the partnership on the expiry of said period of six months.

Provided that in case of reconstitution of firm on retirement of any partner or due to any other reason whatsoever the share of partners of A - group and of partners of B - group shall be so adjusted amongst them that each group shall always have 50 : 50 share in the partnership.

6. That the capital required for the purposes of the business of firm shall be brought in by the partners in such manner and in such proportions as may be mutually decided and between them. It is agreed by and between the partners that interest @ 18% p.a. or at such other rate as may be mutually agreed upon or as may be prescribed under Section 40(b) of I.T.Act, 1961 shall be payable by partnership on the amount standing to the credit of capital account of the partners. Such interest payable shall be credited to their respective account at the close of year.

7. That the mining lease of 10 Sq.K.M. of Dhaneshwar Sutra etc. sand stone quarries were in the name of Late Shri Kanhaiya Lal Ghatiwala 50% of which he bequeathed amongst party of first part to third parts and 50% of said mining lease rights amongst the parties of fifth part to eighth parts subject to approval of said change by competent authorities of Government. It is expressly agreed that party of first part to party of third part shall take steps expeditely to get the aforesaid leases or licences for the said Sand Stone quarries transferred in the name of the firm. It is also expressly agreed that pending the said transfer of the lease and or

Contd....4..

Ashok Bansal

Ghatiwala

Surajmal Bansal

Ashok Bansal

licences in the name of the firm as aforesaid and in case for the lack of Government approval or otherwise for any reasons, it is not possible or it is not considered advisable or expedient to have the said lease and or licence transferred in the name of the firm as aforesaid (i) all the rights and privilege attached to the said lease and licences and all obligation arising therefrom shall be deemed to be that of the firm (ii) all the deeds, instruments and documents executed in connection with the working, purchase and sales and generally in connection with the said lease and/or license by or in the name of any of the partners shall be deemed to have been executed by and on behalf of the firm, and (iii) all the payments made and the moneys received in the name of any partner with respect to and in connection with the said lease or license shall be deemed to be payments and receipts of the firm and shall be duly accounted for in the books of the firm.

8. It is specifically agreed amongst the partners that no partner shall engage himself directly or indirectly in the business of processing, mining or trading of sand stone or other dimensional stones without the written consent of other partners. In case of breach of this condition made by any partner he shall be deemed to have been retired from the firm on the date of receiving a notice to the said effect signed by all the partners of either of A-group or B-group.

9. It is specifically agreed that party of fourth part has been admitted in the partnership as working partner and shall remain partner in the firm so long he agrees to and acts as a full time working partner. In case he expresses his inability in writing not to act as working partner in the firm to the other partners of A - group he shall be deemed to have retired from the firm from the date of his communication to them and his share in the partnership firm shall be devided amongst other partners of group - A as may be mutually decided.

It is also specifically agreed that party of fourth part either on his retirement or on dissolution of firm under clause (5) or otherwise, he shall only be entitled to the capital standing to his credit and his share in profits of the firm till date of retirement or dissolution of firm. The party of fourth part belonging to A - Group of partners shall have no right in the surplus which may arise or accrue on realisation of assets of partnership at the time of dissolution of firm or in the mining lease right of A - Group or in goodwill of the firm. These rights of A - Group of partners shall belong to party of first part to party of third part in the proportion of their respective ratio of share in the partnership firm which bears to 50% of their aggregate right.

10. That the net divisible profits of the firm after providing interest on capital shall belong to and be shared by and the losses of the firm shall be borne by the partners in the following proportions viz.,

Party of the first part	20%
Party of the second part	11%
Party of the third part	11%
Party of the fourth part	8%
Party of the fifth part	18.75%
Party of the sixth part	9.5%
Party of the seventh part	12.5%
Party of the eighth part	9.25%

However it is specifically agreed by and between the parties hereto that profit/loss for the period from 1-4-2001 to 4-1-2002 and from 5-1-2002 to 31-3-2002 shall be shared by respective partners on time basis.

Contd....5..

Sunil Bansal

Ashok Bansal

licences in the name of the firm as aforesaid and in case for the lack of Government approval or otherwise for any reasons, it is not possible or it is not considered advisable or expedient to have the said lease and or licence transferred in the name of the firm as aforesaid (i) all the rights and privilege attached to the said lease and licences and all obligation arising therefrom shall be deemed to be that of the firm (ii) all the deeds, instruments and documents executed in connection with the working, purchase and sales and generally in connection with the said lease and/or license by or in the name of any of the partners shall be deemed to have been executed by and on behalf of the firm, and (iii) all the payments made and the moneys received in the name of any partner with respect to and in connection with the said lease or license shall be deemed to be payments and receipts of the firm and shall be duly accounted for in the books of the firm.

8. It is specifically agreed amongst the partners that no partner shall engage himself directly or indirectly in the business of processing, mining or trading of sand stone or other dimensional stones without the written consent of other partners. In case of breach of this condition made by any partner he shall be deemed to have been retired from the firm on the date of receiving a notice to the said effect signed by all the partners of either of A-group or B-group.

9. It is specifically agreed that party of fourth part has been admitted in the partnership as working partner and shall remain partner in the firm so long he agrees to and acts as a full time working partner. In case he expresses his inability in writing not to act as working partner in the firm to the other partners of A - group he shall be deemed to have retired from the firm from the date of his communication to them and his share in the partnership firm shall be devided amongst other partners of group - A as may be mutually decided.

It is also specifically agreed that party of fourth part either on his retirement or on dissolution of firm under clause (5) or otherwise, he shall only be entitled to the capital standing to his credit and his share in profits of the firm till date of retirement or dissolution of firm. The party of fourth part belonging to A - Group of partners shall have no right in the surplus which may arise or accrue on realisation of assets of partnership at the time of dissolution of firm or in the mining lease right of A - Group or in goodwill of the firm. These rights of A - Group of partners shall belong to party of first part to party of third part in the proportion of their respective ratio of share in the partnership firm which bears to 50% of their aggregate right.

10. That the net divisible profits of the firm after providing interest on capital shall belong to and be shared by and the losses of the firm shall be borne by the partners in the following proportions viz.,

Party of the first part	20%
Party of the second part	11%
Party of the third part	11%
Party of the fourth part	8%
Party of the fifth part	18.75%
Party of the sixth part	9.5%
Party of the seventh part	12.5%
Party of the eighth part	9.25%

However it is specifically agreed by and between the parties hereto that profit/loss for the period from 1-4-2001 to 4-1-2002 and from 5-1-2002 to 31-3-2002 shall be shared by respective partners on time basis.

Contd....5..

Sunil Bansal

Ashok Bansal

17. That any disputes or difference that may at any time arise between the partners or their legal heirs, executors and administrators with regard to the construction meaning and effect of this deed or any part thereof or respecting the accounts profits or losses of the business or the rights and or the liabilities of the partners under this deed of partnership or the dissolution, determination or termination of the partnership or any other matter relating to the firm shall be referred to arbitration in accordance with the provisions of the Arbitration Act and the rules made thereunder relating to the arbitration for the time being in force in Rajasthan. This deed shall be deemed to be an agreement to submit to the Arbitration.

It is specifically agreed that in case the dispute or difference of partnership is referred to arbitration in accordance with this clause, the day to day business of partnership shall be conducted jointly by two partners of firm i.e. one from A - group and other from B - group each of who may be nominated by respective group for the purposes of smooth running of business without effecting any rights or liabilities of partners inter-se as provided in this deed of partnership.

IN WITNESS WHEREOF the parties hereto have hereunto set and subscribed their respective hands and seals the day and year first hereinabove written.

Witnesses :

1. (OMPRAKASH RAWAT)

2. (MANOJ KE NYATI)

1. Party of the first part

2. Party of the Second part

3. Party of the third part

4. Party of the fourth part

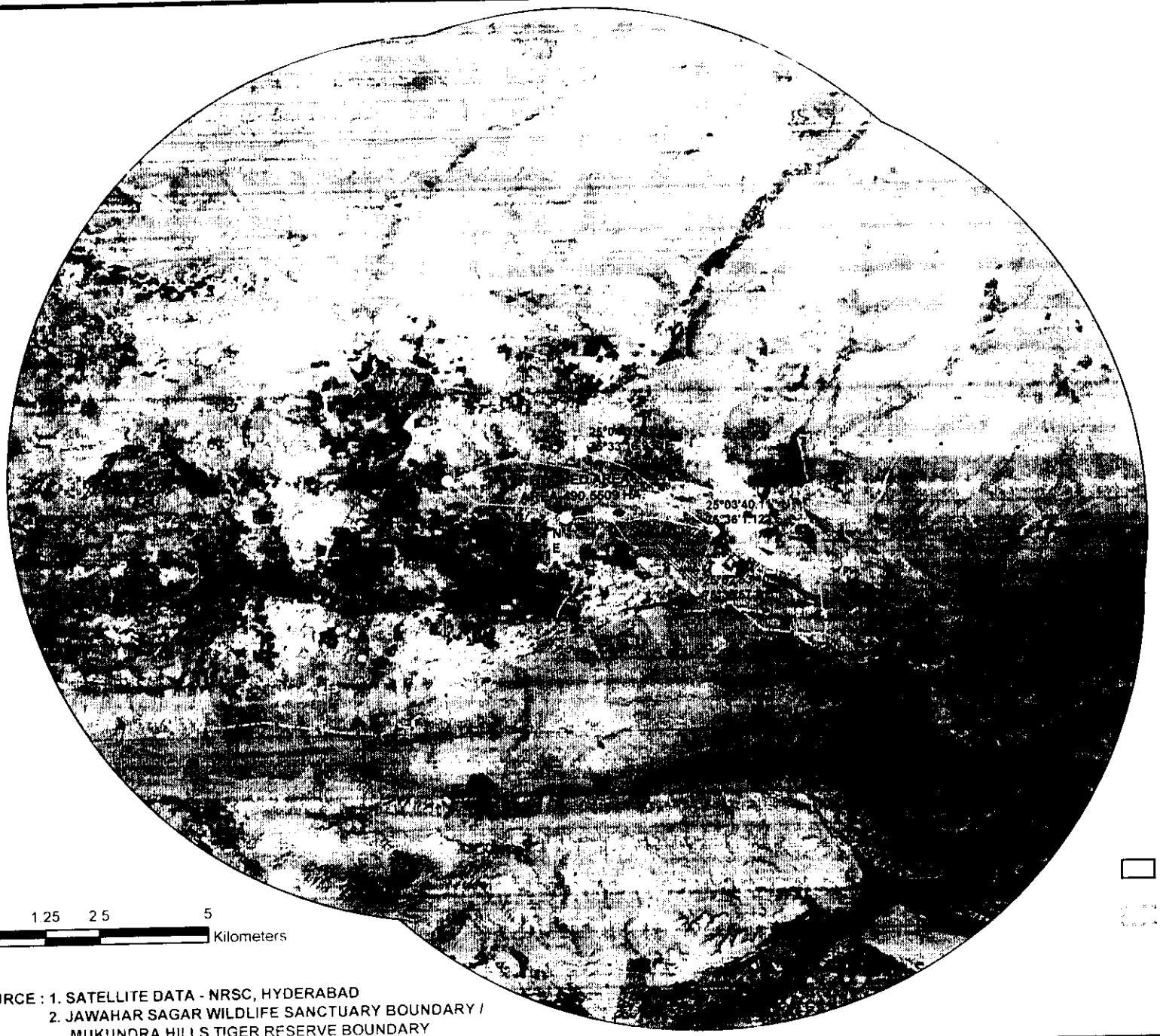
5. Party of the fifth part

6. Party of the sixth part

7. Party of the seventh part

8. Party of the eighth part

LEASE AREA & ECOLOGICAL FEATURES ON SATELLITE DATA



LEGEND

LEASE AREA

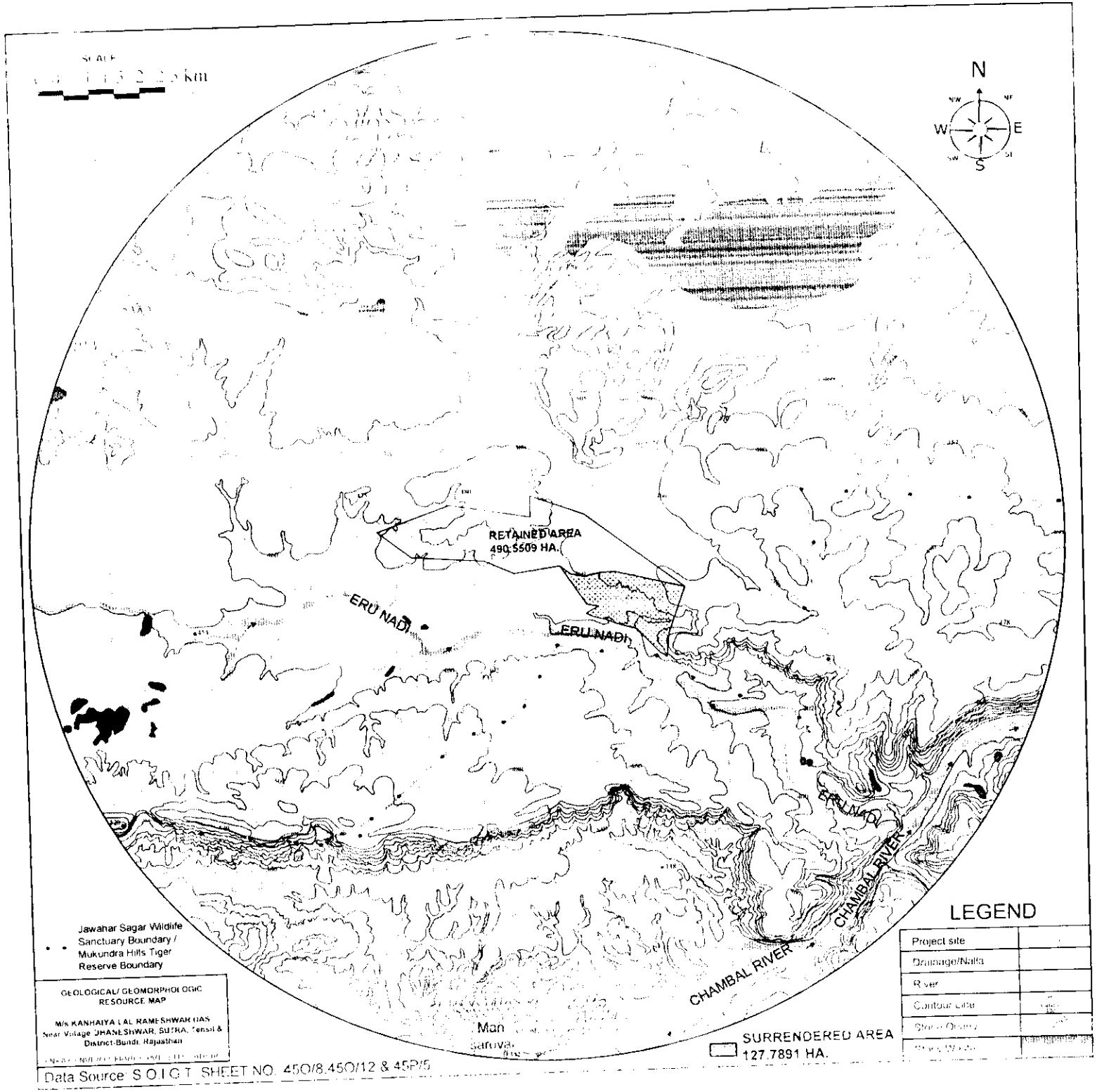
10 KM STUDY AREA

JAWAHAR SAGAR WILDLIF
SANCTUARY BOUNDARY

SURRENDERED AREA
127.7891 HA.

SOURCE : 1. SATELLITE DATA - NRSC, HYDERABAD
2. JAWAHAR SAGAR WILDLIFE SANCTUARY BOUNDARY /
MUKUNDRA HILLS TIGER RESERVE BOUNDARY

ANNEXURE - XVIII



ANNEXURE XIX

ANNEXURE - XX

R.S.T. No.
C.S.T. No. 2033 / 01271

Phone : 2501311
Fax : 0744-2501711

KANHAIYALAL RAMESHWAR DAS

MINE OWNERS : PATTI, FARSHI, POLISHED ACID & ALKALI PROOF SAND STONES

Ref. No. :

B-72, Vallabh Nagar,
KOTA - 324 007 (Raj.)

ENVIRONMENT POLICY

TO ENSURE CLEAN, GREEN AND HEALTHY ENVIRONMENT THROUGH

- Efficient use of natural resources, energy, plant and equipment
- Reduction in emissions, noise, waste and green house gases
- Promotion to Reuse and recycling of wastes
- Continual improvement in environment management with proper systems to prevent, mitigate and control environmental impacts due to operations across the value chain and in local community
- Building awareness amongst all stakeholders including employees, customers, vendors etc. on environmental issues

For Kanhaiya Lal Rameshwar Dass

(S.S.ARORA)

Authorized signatory

Date :

R.S.T. No. 2033 / 01271
C.S.T. No.

ANNEXURE - XXI

Phone : 2501311
Fax : 0744-2501711

KANHAIYALAL RAMESHWAR DAS

MINE OWNERS : PATTI, FARSHI, POLISHED ACID & ALKALI PROOF SAND STONES

STANDARD OPERATING PROCESS

Ref. No. :

74-B-72, Vallabh Nagar,
KOTA - 324 007 (Raj.)

To Review Assignment of Responsibility for Ensuring Timely Compliance of Provisions of Various Statutes

It was informed to all the Partners of the Firm that with a view to have a proper system of timely and effective compliance of provisions of various statues application to the organization and its regular reporting to the Board, the Firm had assigned responsibilities to compliance of relevant statuary provisions.

The Firm has last reviewed the legal compliance responsibility assignment in its meeting dated 06.11.16 and hence the same needs to be reviewed. A statement showing the responsibilities assignment for compliance of various statutory provisions applicable to the company as proposed are as under:-

S. No.	Relevant Acts/ Rules	Functional Person Responsible
1.	Air (Prevention and Control of Pollution) Act, 1981	Sh.Surajmal Bansal, Partner
2.	Water (Prevention and Control of Pollution) Act, 1974	Sh.Surajmal Bansal, Partner
3.	Environment Protection Act, 1986	Sh.Surajmal Bansal, Partner
4.	Any other Rules, Regulations and Notifications related to their functional responsibility.	Sh.Surajmal Bansal, Partner
5.	Compliance of regulatory requirements	Sh.Surajmal Bansal, Partner
6.	Overall compliance Management	Sh.Surajmal Bansal, Partner

Certified True Copy

S.S. Arora

(Authorized Signatory)

M/S. Kanhaiya Lal Rameshwar Das

o. 2033 / 01271
o.

ANNEXURE - XXII

Phone : 25
Fax : 0744-

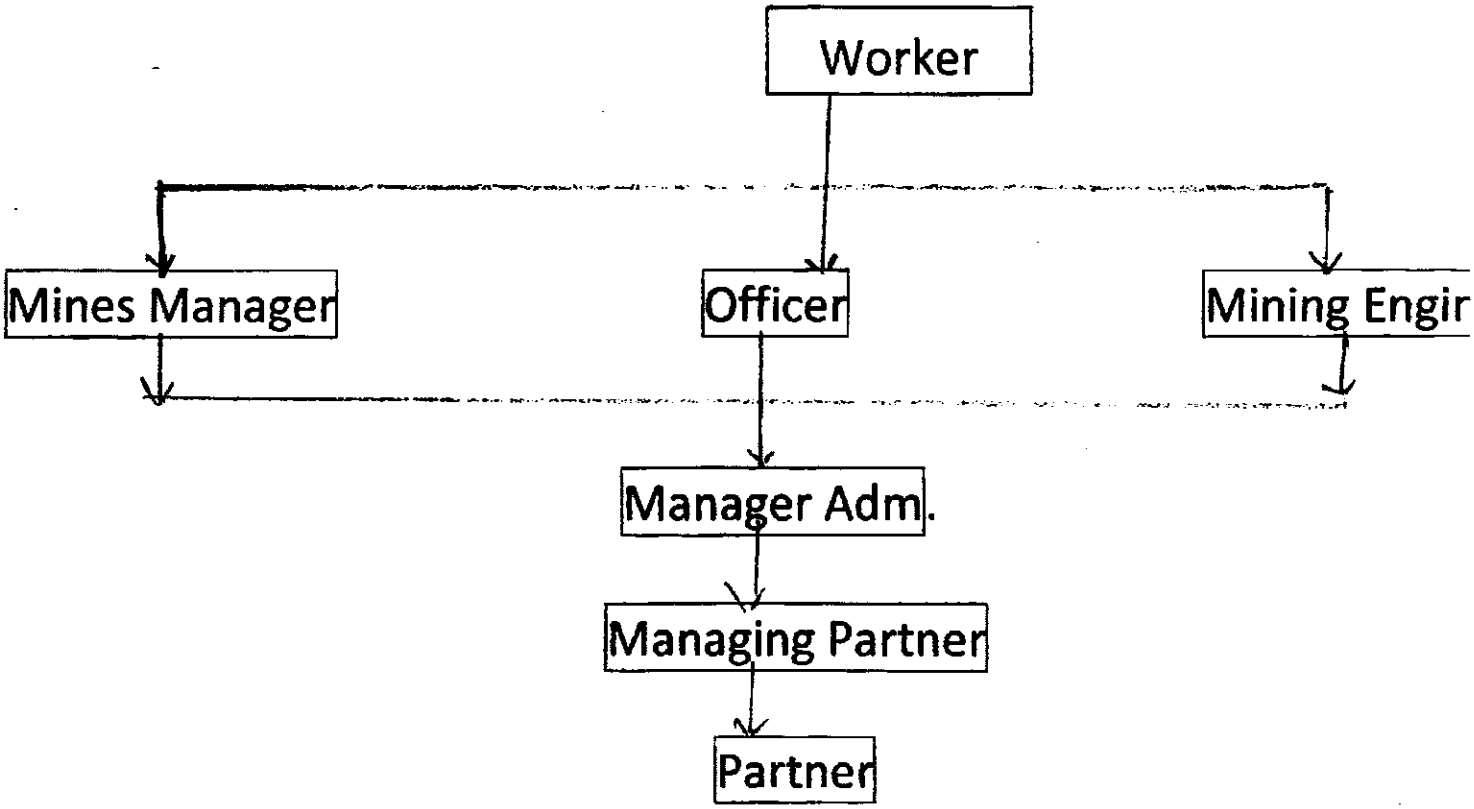
ANHAIYALAL RAMESHWAR DA

OWNERS : PATTI, FARSHI, POLISHED ACID & ALKALI PROOF SAND ST

D. :

7-A ~~B-72~~, Vallabh N
KOTA - 324 00

HIERARCHIAL SYSTEM OR ADMINISTRATIVE ORDER OF THE COMPA



For Kanhaiya Lal rameshwar Dass

(S.S.ARORA)
AUTHORISED SIG.

ANNEXURE - XXIII

R.S.T. No.
C.S.T. No. 2033 / 01271

Phone : 2501311
Fax : 0744-2501711

KANHAIYALAL RAMESHWAR DAS

MINE OWNERS : PATTI, FARSHI, POLISHED ACID & ALKALI PROOF SAND STONES

Ref. No. :

B-72, Vallabh Nagar,
KOTA - 324 007 (Raj.)

NON- COMPLIANCE REPORTING SYSTEM

- In case of violations of environmental norms, the case will be put up to the highest authority
- The directions will be conveyed to respective person for taking up the necessary corrective action
- Monitoring of the action taken as per the instruction from authority will be regularly carried out to ensure compliance

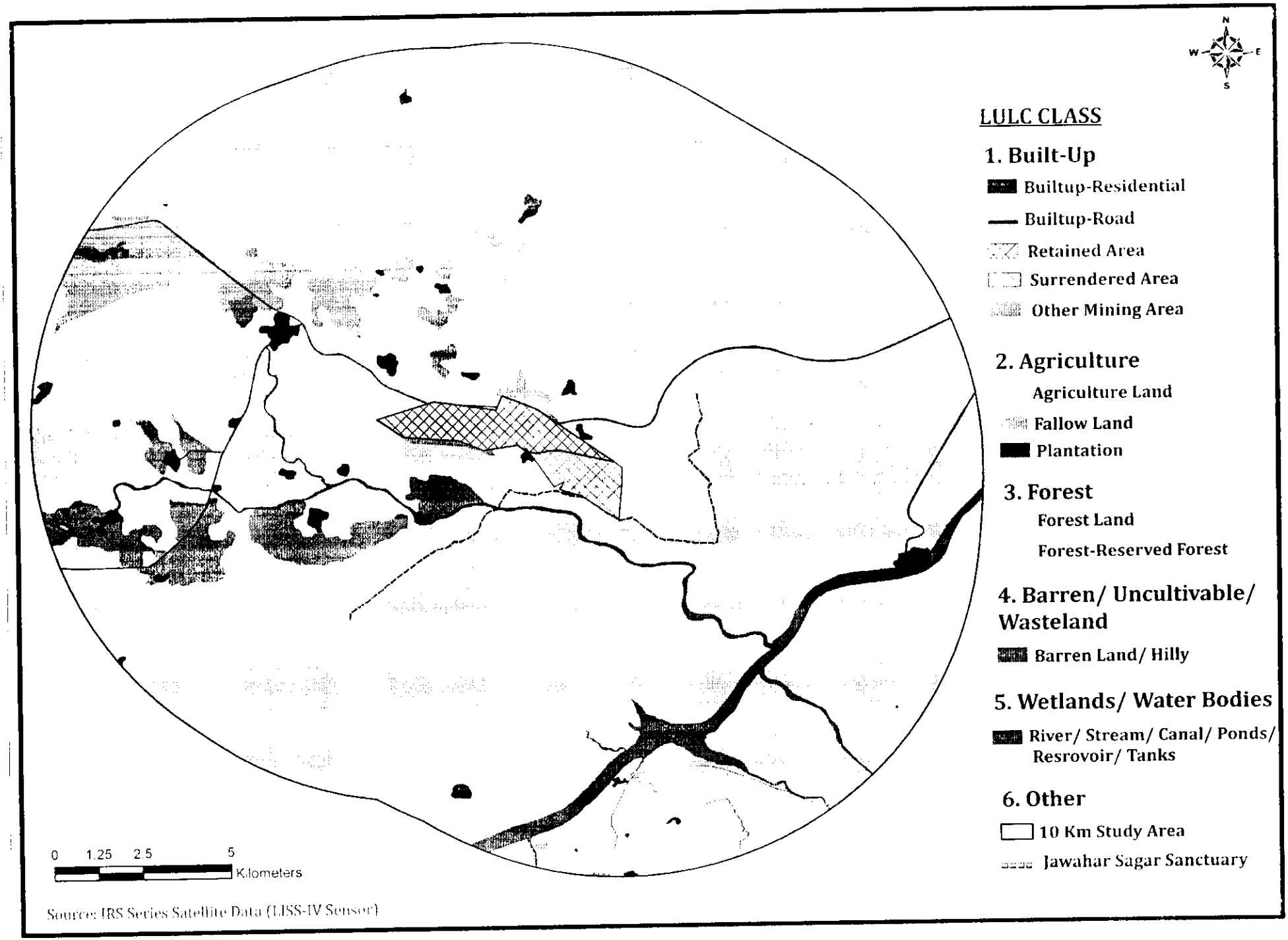
For Kanhaiya Lal Rameshwar Dass

(S.S.ARORA)

Authorized signatory

Date :

LULC MAP OF SANDSTONE MINE, DHANESHWAR (M.L.No. - 47/94)



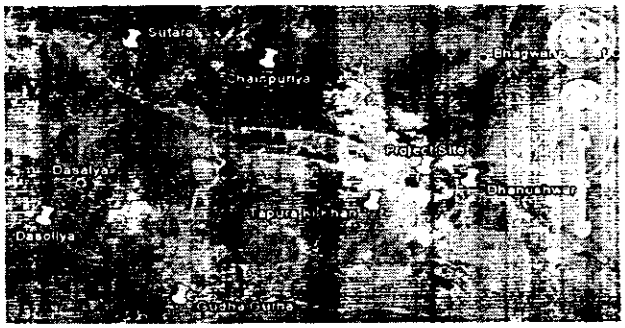
ANNEXURE - XXV

ENVIRONMENTAL DATA GENERATION REPORT

For

M/s: Kanhaiyalal Rameshwar Das.

Sandstone Mine Situated at Village - Dhaneshwar & Sutara,
Tehsil- District –Bundi.
RAJASTHAN.



Season: Post Manson/Winter
(October-2015 to December -2015)

Sponsor

M/s. Enkay Enviro Services Pvt Ltd
L-G-6, Lower Ground Floor, Corporate Park,
Gopal Bari, Ajmer Road,
Jaipur – 302 001

CONDUCTED BY:

VISON LABS
Analytical Service & Environnemental Consultants

Recognized by MoEF&CC, GOI, Sr.no.1680 (E),QCI-NABET,ISO 9001:2008
H.No.16-11-23/37/A, 2nd Floor,
N-mart Building, Opp: R.T.A Office,
Musaarambagh, Hyderabad.
Tel Fax: 040 – 24544320, 24558363.
Website: visonlabs.com
Email info@visonlabs.com & vison.labs@gmail.com

R E P O R T

For

Kanhaiyalal Rameshwar Das.

Sandstone Mine Situated at Village - Dhaneshwar & Sutara,
Tehsil- District –Bundi.
RAJASTHAN.

For and behalf of Vison Labs

Approved By	:	T Laxmikanth Reddy
Signed	:	
Position	:	Chief Executive
Date	:	7th January - 2016

This report has been prepared by Vison Labs with all reasonable skill, care and diligence within the terms of the contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known, any such party relies on the report at their own risk.

1.0 SCOPE OF WORK

M/s. Enkay Enviro Services Pvt Ltd entrusted the job of environmental monitoring, sampling analysis and data generation to M/s Vison Labs, Hyderabad as per EESPL/ADM/WO/002-M/Gen./2015-16/001/VL-000 dated 23.09.2015 for the postman soon and winter season 2015-2016.

Monitoring of Meteorological Data, Ambient Air Quality, Water quality, Soil Quality and Ambient Noise Quality measurement are part of the scope of work given to M/s Vison Labs. The environmental monitoring has been carried out at the following locations with Co-Ordinates:

A] Meteorological Station at Project Site. N 25^{0}04'12.7" E 75^{0}35'00.3"

B] Ambient Air Quality Locations:

Location Code	Location Name	Sample Collection Details	Co-ordinates
AAQ -1	Project Site	Project Site	N 25^{0}04'12.7" E 75^{0}35'00.3"
AAQ - 2	Gudha	Mr.Mulchand Ji S/o Mr.Kesridas Ji	N 25^{0}02'56.2" E 75^{0}33'04.9"
AAQ - 3	Chainpuriya	Narayan Ji S/o Mathura Lal	N 25^{0}05'07.6" E 75^{0}33'40.2"
AAQ - 4	Dhaneshwar	Shiv Kumar S/o Hathi Ram	N 25^{0}04'06.3" E 75^{0}35'23.1"
AAQ - 5	Tapura Ki Khan	Mr.Shamlal	N 25^{0}03'54.0" E 75^{0}35'11.5"
AAQ - 6	Dasoliya	Hari Shankar S/o madan Das	N 25^{0}03'41.2" E 75^{0}31'46.5"
AAQ - 7	Sutara	Chotulal S/o Narayan Ji	N 25^{0}05'20.4" E 75^{0}32'45.2"

C] Ambient Noise Quality Locations:

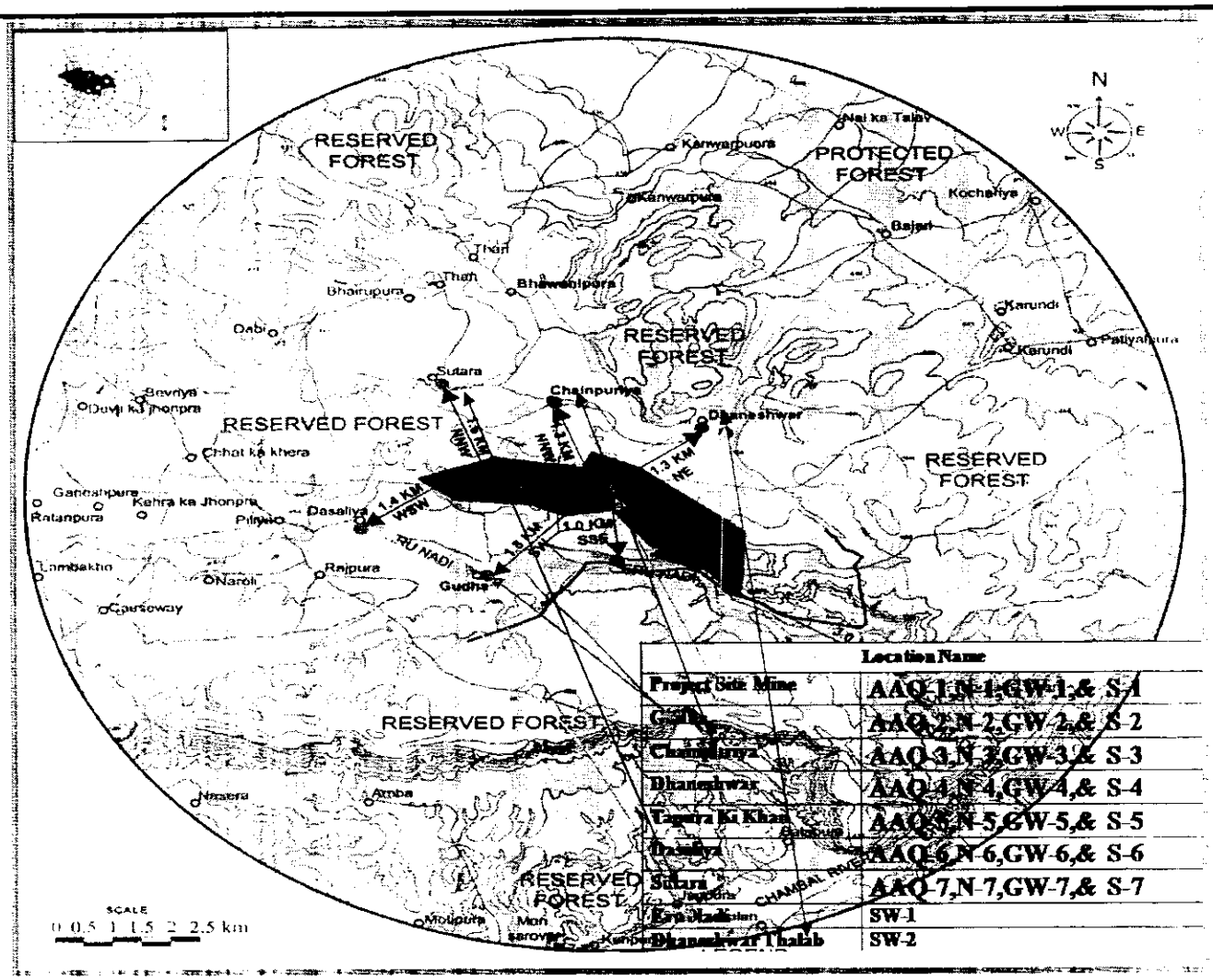
Location Code	Location Name	Location Details	Co-ordinates
N – 1	Project Site Mine	Project Site	N 25^{0}04'12.7" E 75^{0}35'00.3"
N – 2	Gudha	Rajakiya Madyamik Vidyalaya	N 25^{0}02'55.4" E 75^{0}33'02.4"
N – 3	Chainpuriya	Near Anganwadi Seva Khendru	N 25^{0}05'08.7" E 75^{0}33'33.6"
N – 4	Dhaneshwar	Prathamic Arogya Kendru	N 25^{0}04'10.1" E 75^{0}35'26.4"
N – 5	Tapura Ki Khan	Prathamika Vidyalay	N 25^{0}03'47.0" E 75^{0}35'09.7"
N – 6	Dasoliya	Prathamika Vidyalay	N 25^{0}03'46.8" E 75^{0}31'44.3"
N – 7	Sutara	Madyamic Vidyalay	N 25^{0}05'13.4" E 75^{0}32'40.6"

D] Water Quality Locations:

Location Code	Location Name	Location Details	Co-ordinates
GW-1	Project Site Mine	Project Site	N 25^{0}04'16.4" E 75^{0}35'08.6"
GW-2	Gudha	Rajakiya Madyamik Vidyalaya	N 25^{0}02'55.2" E 75^{0}33'04.9"
GW-3	Chainpuriya	Near Anganwadi Seva Khendru	N 25^{0}05'09.4" E 75^{0}33'35.2"
GW-4	Dhaneshwar	Prathamic Arogya Kendru	N 25^{0}04'7.0" E 75^{0}35'18.4"
GW-5	Tapura Ki Khan	Prathamika Vidyalay	N 25^{0}03'34.2" E 75^{0}35'20.4"
GW-6	Dasoliya	Prathamika Vidyalay	N 25^{0}03'47.2" E 75^{0}31'45.2"
GW-7	Sutara	Madyamic Vidyalay	N 25^{0}05'12.9" E 75^{0}32'41.5"
SW-1	Eru Nadi	--	N 25^{0}02'56.7" E 75^{0}32'55.5"
SW-2	Dhaneswar Thalab	--	N 25^{0}05'12.3" E 75^{0}35'31.5"

E] Soil Quality Locations:

Location Code	Location Name		Co-ordinates
S – 1	Project Site Mine	Project Site	N 25^{0}04'09.4" E 75^{0}35'01.7"
S – 2	Gudha	Rajakiya Madyamik Vidyalaya	N 25^{0}02'55.2" E 75^{0}33'04.9"
S – 3	Chainpuriya	Near Anganwadi Seva Khendru	N 25^{0}05'12.7" E 75^{0}33'37.4"
S – 4	Dhaneshwar	Prathamic Arogya Kendru	N 25^{0}04'16.2" E 75^{0}35'29.2"
S – 5	Tapura Ki Khan	Prathamika Vidyalay	N 25^{0}03'51.0" E 75^{0}35'12.7"
S – 6	Dasoliya	Prathamika Vidyalay	N 25^{0}03'48.4" E 75^{0}31'44.3"
S– 7	Sutara	Madyamic Vidyalay	N 25^{0}05'06.1" E 75^{0}32'41.4"



Location Name	
Project Site Mine	AAQ-1,N-1,GW-1,& S-1
Gudha	AAQ-2,N-2,GW-2,& S-2
Chainpuriya	AAQ-3,N-3,GW-3,& S-3
Dhaneshwar	AAQ-4,N-4,GW-4,& S-4
Tagura Ki Khan	AAQ-5,N-5,GW-5,& S-5
Dasaliya	AAQ-6,N-6,GW-6,& S-6
Sutara	AAQ-7,N-7,GW-7,& S-7
Kanwarpura	SW-1
Dhaneshwar Thalab	SW-2

10 Km Map Showing Baseline Study Area and Air Noise, Water, Soil sampling locations

MONITORING AND ANALYSIS METHODOLOGY

The consultant had Pre-identified the monitoring stations for Meteorological Data, Air, Water, Soil and Noise. Time bound program for carrying out fieldwork was prepared and was followed as far as possible. The IS methods are followed to decide the monitoring stations, analysis of different sample and also alternative methods are used, where the cross verification is required, alternative methods are used.

Meteorological Data:

An auto weather monitoring station was installed during the study period to record various meteorological parameters on hourly basis to understand the wind pattern, Temperature variation, solar insulation and relative humidity variation etc.

Ambient Air Quality Monitoring:

Fine Particulate Samplers (FPS) has been used for $PM_{2.5}$ Sampling. Respirable Dust Samplers (RDS) with gaseous attachment have been used for PM_{10} Sampling. RDS with Gaseous attachment assembly is used for the collection of gaseous pollutants such as SO_2 & NO_2. The details of the instrument used for sampling, testing methods are given below:

Ambient Air monitoring instruments

Instrument	Make	Model No.	Range and Sensitivity	
Respirable Dust Sampler (RDS)	M/s. ECO TECH Instruments Pvt. Ltd/Respirable dust Sampler Envirotech make and Aero Viron Instruments	COMBO-AAS-271/Enviro Tech APM-460	2.3 m^3/hr ±0.03 m^3/min (PM-10) 1.0m^3/hr ($PM_{2.5}$) ±0.03 m^3/min	0 – 3 LPM ± 0.2 LPM (gases)

Testing Method to be followed for Ambient Air Quality

Particular		Testing Method to be Followed
Ambient Air Monitoring Parameter		
A	PM 10	IS-5182 (part – 23) 2006
B	PM 2.5	RTI(Research Triangle Institute) (Gravimetric Ana Revision-07 Aug14-2003)
C	SO_2 (Sulfur Dioxide)	IS 5182 (Part – II) 2001, with Improved West & Gaeke Method
D	NO_2 (Oxides of Nitrogen)	Modified Jacobs – Hochheiser Method / Arsenite Method (IS 5182 Part IV)2011
E	Carbon Monoxide	NDIR Spectroscopy method

Noise Level Measurement

Instant sound level meter is used for the collection of data related to noise at an interval of one hour per reading. Noise level for 24 hours was conducted during one week period at pre-decided location. The details of the instrument used for the sampling is mentioned in the separate annexure under the heading of Details of instruments & Apparatus.

Noise (Sound) Measuring Instrument

Instrument	Make	Model No.	Instrument Identification	Detection Limit
Integrated Sound Level Measurement Instrument Standard Accessories	HTC	SL-1352	EHS.INST/156	Lo 30-80dB Hi 80-130dB

Testing Method to be followed

Particular		Testing Method to be Followed
Noise Level Measurement		
A	Noise Level in dB (A) for continuous 24 hours at 1 hour interval	IS:9876 2001, IS:4758,1968,IS:4954 1968

Water and Soil Quality Survey

Water samples were collected in Pre-sterilized sampling container. Chemical and Metals analysis was carried out as per standard Methods for water and Surface water Analysis, Published by AWWA, APHA, etc.

Quality Assurance

VISON LABS is accredited and Recognized by Ministry of Environment Forests Climate Change, GOVT. OF INDIA, NABL, NABET, OSHAS, and follows quality systems as per ISO 9001:2008. The QA/QC procedures are laid prior to sample collection and analysis. It includes the standard procedures of sample collection, preservation, transportation and laboratory analysis with all documented procedures and continuous monitoring of Quality Control Division.

Results of Survey Data

The Survey results of Meteorological Data, Ambient Air Quality, Ambient Noise Monitoring, Soil and Water Sampling analysis are presented below.

Meteorological Data

Percentage frequencies of wind in 16 directions have been computed from the recorded data during the study period [1st October 2015 to 31st December 2015] for 24 hourly intervals to plot wind rose. Fig. Represents the summary of the wind pattern is given blow of the study period. The hourly meteorological data recorded is given in **Annexure-I.**

THE SUMMARY OF THE WIND PATTERN

S.No	Wind Direction	0.5-2.1 Speed m/s	>= 2.1 Speed m/s	Total
1	N	58	10	68
2.	NNE	43	9	52
3.	NE	12	2	14
4.	ENE	10	2	12
5.	E	4	1	5
6.	ESE	9	2	11
7.	SE	17	2	19
8.	SSE	29	1	30
9.	S	25	4	29
10.	SSW	40	7	47
11.	SW	29	10	39
12.	WSW	26	4	30
13.	W	11	4	15
14.	WNW	15	4	19
15.	NW	19	3	22
16.	NNW	24	3	27
Sub-Total				439
Calms				1768
Missing/Incomplete				1
Total				2208

SITE SPECIFIC WIND ROSE

The predominant wind direction during this Study period is observed to be blowing all directions Wind speed during this period is 0.27 m/s. Calm wind during this period 80.11 %. The recorded meteorological data for the study period at project site is given below.

Month	Temperature (^{0}C)		Relative Humidity (%)		Rainfall in mm		Wind Speed mph	
	Max	Min	Max	Min	Max	Total	Max	Min
October - 2015	41.4	15.7	81.4	7.7	0	0	10	<1.0
November - 2015	32.6	13.4	69.5	6.8	0	0	9	<1.0
December – 2015	36.4	8.6	87.6	6.8	0	0	8	< 1.0

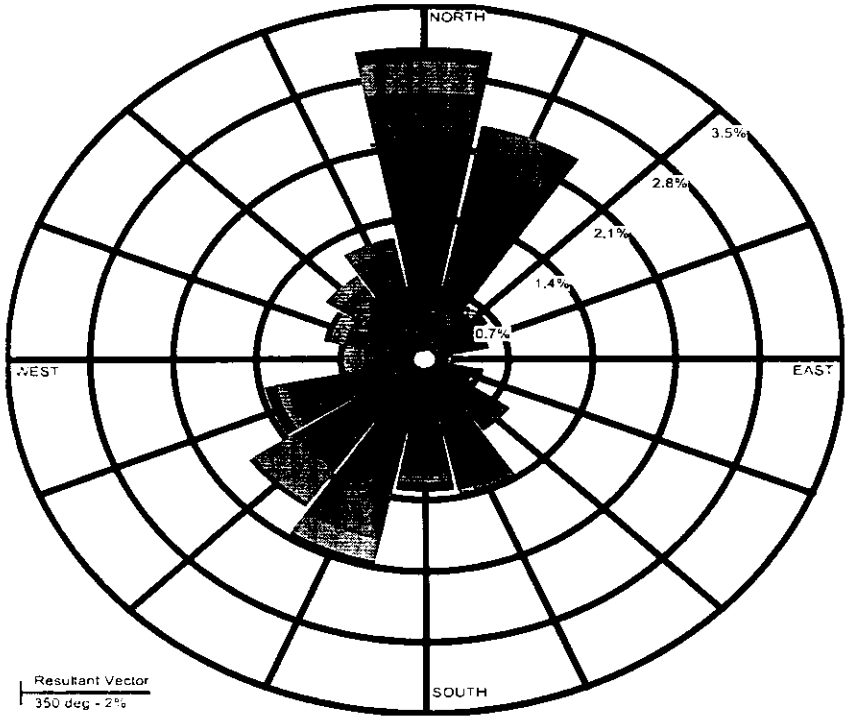
WIND ROSE PLOT

Station # 12 - Kanhaiyalal Rameshwar Das,Bundi, , RJ

DISPLAY

Wind Speed
Direction (blowing from)

COMMENTS



WIND SPEED (m/s)

>= 11.1
8.8 - 11.1
5.7 - 8.8
3.6 - 5.7
2.1 - 3.6
0.5 - 2.1
Calms 80.07%

DATA PERIOD

Start Date: 10/1/2015 - 00:00
End Date: 12/31/2015 - 23:00

TOTAL COUNT	CALM WIND
2207 hrs.	**80.07%**

AVG WIND SPEED

0.27 m/s

COMPANY NAME

MODELER

DATE

1/4/2016

PROJECT NO

haiyalal Rameshwar

Windrose Environmental Software

Ambient Air Quality Monitoring Tested Results

The Ambient Air Quality has been monitored at seven locations as per work order. The tables showing Ambient Air Quality tested Results in three months Postman soon and winter season.

Location Name : Project Site (Mine-AAQ-1)					**Sampling Duration 24 hrs period**	
Date		**PM_{10} µg/m^3**	**$PM_{2.5}$ µg/m^3**	**SO_2 µg/m^3**	**NO_2 µg/m^3**	**CO µg/m^3**
Standards		**100 max**	**60 max**	**80 max**	**80 max**	**2000 max**
October - 2015						
1st Week	05.10.2015	42.2	21.9	4.9	18.6	856
	06.10.2015	35.0	19.4	4.6	14.5	654
2nd Week	12.10.2015	39.8	18.8	5.8	16.9	586
	13.10.2015	40.5	20.9	5.3	18.9	695
3rd Week	19.10.2015	34.7	16.8	4.6	16.3	824
	20.10.2015	31.9	15.0	5.0	18.4	766
4th Week	26.10.2015	36.8	17.2	5.6	20.1	694
	27.10.2015	33.5	16.9	5.9	16.9	468
November -2015						
5th Week	02.11.2015	35.9	19.1	5.4	18.4	792
	03.11.2015	34.8	17.5	5.9	17.3	830
6th Week	09.11.2015	32.9	16.4	5.6	16.9	884
	10.11.2015	42.5	22.3	5.3	18.2	965
7th Week	16.11.2015	35.6	18.5	5.8	18.0	756
	17.11.2015	33.1	17.1	6.0	16.9	889
8th Week	23.11.2015	38.9	19.0	5.3	19.6	965
	24.11.2015	31.8	16.5	6.4	21.5	1022
December - 2015						
9th Week	30.11.2015	35.9	18.2	5.3	23.5	986
	01.12.2015	38.1	20.0	5.8	22.4	1012
10th Week	07.12.2015	43.1	22.4	6.1	20.1	976
	08.12.2015	40.5	21.3	5.3	21.9	1124
11th Week	14.12.2015	35.6	16.3	5.8	18.9	998
	15.12.2015	38.7	19.7	5.6	20.5	1056
12th Week	21.12.2015	35.4	17.3	5.9	19.9	1084
	22.12.2015	30.9	16.4	5.5	21.5	985
13th Week	28.12.2015	35.7	17.2	6.4	20.6	1066
	29.12.2015	39.1	20.4	5.9	22.8	1008
Arithmetic mean		**36.7**	**18.6**	**5.6**	**19.2**	**882.3**
Maximum		**43.1**	**22.4**	**6.4**	**23.5**	**1124**
Minimum		**30.9**	**15**	**4.6**	**14.5**	**468**
Standard Deviation		**3.4**	**2.1**	**0.5**	**2.2**	**167.2**
98th percentile		**42.8**	**22.4**	**6.4**	**23.2**	**1121**

Location Name : Gudha (AAQ-2)					Sampling Duration 24 hrs period	
Date		PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO µg/m^3
Standards		100 max	60 max	80 max	80 max	2000 max
October - 2015						
1St Week	07.10.2015	46.5	24.6	4.6	16.5	658
	08.10.2015	48.9	24.9	4.9	14.2	657
2nd Week	14.10.2015	39.9	22.3	5.1	13.6	649
	15.10.2015	42.5	22.1	5.3	18.9	725
3rd Week	21.10.2015	48.9	25.9	5.7	14.2	694
	22.10.2015	43.2	23.8	5.1	16.9	841
4th Week	28.10.2015	48.9	28.4	4.9	18.2	869
	29.10.2015	41.7	22.5	4.5	17.0	792
November -2015						
5th Week	04.11.2015	46.2	26.8	4.9	16.9	830
	05.11.2015	49.7	27.3	4.7	18.4	879
6th Week	11.11.2015	43.2	23.3	5.0	13.1	946
	12.11.2015	41.5	22.8	4.6	18.4	936
7th Week	18.11.2015	40.7	22.4	4.9	14.7	1020
	19.11.2015	38.5	20.4	4.3	17.3	994
8th Week	25.11.2015	46.0	24.4	4.7	19.9	1045
	26.11.2015	47.3	25.1	4.9	18.4	976
December - 2015						
9th Week	02.12.2015	37.9	20.1	4.9	16.3	984
	03.12.2015	46.2	23.6	5.2	19.4	1028
10th Week	09.12.2015	41.0	23.0	5.0	15.8	1306
	10.12.2015	43.5	22.6	5.6	16.7	1065
11th Week	16.12.2015	46.9	24.9	5.1	13.8	984
	17.12.2015	40.7	22.4	4.9	18.9	1040
12th Week	23.12.2015	38.5	22.3	5.6	17.6	1065
	24.12.2015	43.8	23.7	5.8	18.1	984
13th Week	30.12.2015	48.9	28.4	5.2	19.0	1245
	31.12.2015	50.2	27.6	5.7	17.3	1360
Arithmetic mean		**44.3**	**24.1**	**5.0**	**16.9**	**945.1**
Maximum		**50.2**	**28.4**	**5.8**	**19.9**	**1360**
Minimum		**37.9**	**20.1**	**4.3**	**13.1**	**649**
Standard Deviation		**3.8**	**2.3**	**0.4**	**1.9**	**187.9**
98th percentile		**50.0**	**28.4**	**5.8**	**19.7**	**1333**

Location Name : Chainpuriya (AAQ-3)					Sampling Duration 24 hrs period	
Date		PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO µg/m^3
Standards		100 max	60 max	80 max	80 max	2000 max
October - 2015						
1st Week	07.10.2015	32.5	17.2	4.2	12.5	658
	08.10.2015	30.6	15.6	4.6	11.6	564
2nd Week	14.10.2015	35.4	19.8	4.8	13.2	485
	15.10.2015	30.6	15.9	4.5	14.8	659
3rd Week	21.10.2015	29.9	15.8	4.1	16.2	548
	22.10.2015	35.6	19.6	4.6	12.5	569
4th Week	28.10.2015	33.6	19.5	4.3	13.7	620
	29.10.2015	35.9	19.4	4.5	12.9	546
November -2015						
5th Week	04.11.2015	33.0	19.1	4.3	12.6	510
	05.11.2015	35.4	19.5	4.9	13.4	468
6th Week	11.11.2015	36.9	19.9	4.5	14.5	568
	12.11.2015	32.5	17.9	4.1	12.4	548
7th Week	18.11.2015	29.9	16.4	4.3	13.0	469
	19.11.2015	31.2	16.5	4.6	12.9	658
8th Week	25.11.2015	32.9	17.4	4.2	11.7	658
	26.11.2015	36.5	19.3	4.8	13.2	752
December - 2015						
9th Week	02.12.2015	34.8	18.4	4.8	16.5	640
	03.12.2015	30.9	15.8	5.1	14.1	766
10th Week	09.12.2015	36.6	20.5	4.6	13.4	862
	10.12.2015	38.4	20.0	4.9	12.6	825
11th Week	16.12.2015	31.9	16.9	5.2	13.9	869
	17.12.2015	35.7	19.6	4.9	15.8	942
12th Week	23.12.2015	36.0	20.9	5.3	16.9	884
	24.12.2015	32.3	17.4	5.1	17.3	762
13th Week	30.12.2015	31.9	18.5	5.4	15.4	830
	31.12.2015	35.8	19.7	5.2	16.1	886
Arithmetic mean		33.7	18.3	4.7	14.0	674.8
Maximum		38.4	20.9	5.4	17.3	942
Minimum		29.9	15.6	4.1	11.6	468
Standard Deviation		2.5	1.6	0.4	1.7	146.7
98th percentile		37.7	20.7	5.4	17.1	914.0

Location Name : Dhaneshwar (AAQ-4)					Sampling Duration 24 hrs period	
Date		PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO µg/m^3
Standards		100 max	60 max	80 max	80 max	2000 max
October - 2015						
1st Week	09.10.2015	48.9	25.9	6.5	18.5	1056
	10.10.2015	51.6	26.3	4.9	14.6	1124
2nd Week	16.10.2015	54.5	30.1	5.8	19.9	1336
	17.10.2015	56.3	29.3	6.1	16.8	1148
3rd Week	23.10.2015	49.7	26.8	4.6	18.5	1225
	24.10.2015	51.0	28.1	5.8	19.3	1088
4th Week	30.10.2015	53.7	31.0	5.3	20.1	1240
	31.10.2015	52.0	28.6	6.7	18.4	1060
November -2015						
5th Week	06.11.2015	53.5	31.0	5.6	20.1	1152
	07.11.2015	54.8	30.1	5.4	19.4	1168
6th Week	13.11.2015	55.9	30.6	5.2	20.0	1245
	14.11.2015	48.5	26.9	5.9	19.4	1186
7th Week	20.11.2015	42.6	23.4	6.1	18.6	1324
	21.11.2015	50.0	26.5	5.8	17.3	1241
8th Week	27.11.2015	47.6	25.2	6.0	19.3	1365
	28.11.2015	42.8	22.0	5.3	20.4	1422
December - 2015						
9th Week	04.12.2015	48.9	25.9	5.7	18.6	1124
	05.12.2015	51.3	26.2	6.2	19.3	1365
10th Week	11.12.2015	50.4	28.2	5.8	20.5	1248
	12.12.2015	46.8	24.3	6.5	22.0	1420
11th Week	18.12.2015	48.7	25.0	6.4	19.9	1365
	19.12.2015	49.0	27.2	6.1	21.5	1248
12th Week	25.12.2015	51.3	29.8	6.9	23.8	1185
	26.12.2015	53.4	28.6	5.8	21.0	1358
13th Week	01.01.2016	49.9	28.9	5.3	22.6	1322
	02.01.2016	55.8	30.7	6.2	23.4	1289
Arithmetic mean		50.7	27.6	5.8	19.7	1242.5
Maximum		56.3	31	6.9	23.8	1422
Minimum		42.6	22	4.6	14.6	1056
Standard Deviation		3.6	2.5	0.5	2.0	108.7
98th percentile		56.1	31.0	6.8	23.6	1421.0

Location Name : Tapura Ki Khan (AAQ-5)					Sampling Duration 24 hrs period	
Date		PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO µg/m^3
Standards		100 max	60 max	80 max	80 max	2000 max
October - 2015						
1St Week	05.10.2015	29.9	15.8	4.6	11.6	652
	06.10.2015	30.5	15.6	4.9	14.2	548
2nd Week	12.10.2015	27.6	15.5	5.1	12.3	538
	13.10.2015	25.9	13.5	4.3	11.9	640
3rd Week	19.10.2015	21.6	11.4	4.9	10.5	562
	20.10.2015	35.6	19.6	4.6	14.2	523
4th Week	26.10.2015	30.5	17.7	4.8	12.3	596
	27.10.2015	32.9	18.1	4.2	11.9	522
November -2015						
5th Week	02.11.2015	28.9	16.8	4.1	13.4	624
	03.11.2015	26.5	14.6	4.6	12.0	568
6th Week	09.11.2015	30.4	16.4	4.9	12.6	594
	10.11.2015	31.9	17.5	4.8	13.8	680
7th Week	16.11.2015	33.0	18.2	4.6	11.8	614
	17.11.2015	29.7	15.7	4.7	12.6	579
8th Week	23.11.2015	31.5	16.7	4.3	10.9	563
	24.11.2015	30.0	15.9	4.9	11.2	686
December - 2015						
9th Week	30.11.2015	26.5	14.0	4.2	12.6	725
	01.12.2015	29.4	15.0	4.9	14.3	768
10th Week	07.12.2015	26.5	14.8	4.6	11.5	692
	08.12.2015	22.8	11.9	4.5	12.4	845
11th Week	14.12.2015	26.3	13.9	4.9	13.4	689
	15.12.2015	25.7	14.1	5.2	11.6	897
12th Week	21.12.2015	29.3	17.0	4.6	13.2	845
	22.12.2015	30.4	16.4	4.3	11.9	929
13th Week	28.12.2015	31.6	18.3	5.2	12.6	892
	29.12.2015	27.5	15.1	5.0	13.9	965
Arithmetic mean		**28.9**	**15.8**	**4.7**	**12.5**	**682.2**
Maximum		**35.6**	**19.6**	**5.2**	**14.3**	**965**
Minimum		**21.6**	**11.4**	**4.1**	**10.5**	**522**
Standard Deviation		**3.2**	**2.0**	**0.3**	**1.1**	**135.9**
98th percentile		**34.3**	**19.0**	**5.2**	**14.3**	**947.0**

Location Name : Dasoliya (AAQ-6)					Sampling Duration 24 hrs period	
Date		PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO µg/m^3
Standards		**100 max**	**60 max**	**80 max**	**80 max**	**2000 max**
October - 2015						
1St Week	09.10.2015	25.9	13.7	4.2	11.6	658
	10.10.2015	26.3	13.4	4.6	12.3	590
2nd Week	16.10.2015	31.5	17.6	4.5	11.0	572
	17.10.2015	24.5	12.7	4.2	11.9	624
3rd Week	23.10.2015	29.8	15.8	4.1	13.1	588
	24.10.2015	26.5	14.6	4.6	14.2	590
4th Week	30.10.2015	24.2	14.0	4.3	11.9	620
	31.10.2015	23.6	12.7	4.8	12.3	588
November -2015						
5th Week	06.11.2015	25.4	14.7	4.2	12.8	576
	07.11.2015	26.9	14.8	4.8	14.2	536
6th Week	13.11.2015	27.9	15.1	4.3	11.6	559
	14.11.2015	31.2	17.2	4.1	10.9	572
7th Week	20.11.2015	26.1	14.4	4.6	12.4	549
	21.11.2015	24.3	12.9	4.3	13.0	588
8th Week	27.11.2015	29.3	15.5	4.8	11.5	536
	28.11.2015	25.1	13.3	4.2	13.6	572
December - 2015						
9th Week	04.12.2015	27.0	14.3	4.3	12.5	656
	05.12.2015	23.5	12.0	4.6	14.6	698
10th Week	11.12.2015	24.9	13.9	4.8	13.4	712
	12.12.2015	26.3	13.7	4.5	13.4	850
11th Week	18.12.2015	22.5	11.9	4.1	11.9	945
	19.12.2015	23.6	13.0	4.8	13.5	892
12th Week	25.12.2015	24.8	14.4	4.6	12.6	960
	26.12.2015	22.0	11.9	4.9	13.1	920
13th Week	01.01.2016	30.5	17.7	5.0	12.9	946
	02.01.2016	26.9	14.8	4.8	13.7	931
Arithmetic mean		**26.2**	**14.2**	**4.5**	**12.7**	**685.7**
Maximum		**31.5**	**17.7**	**5.0**	**14.6**	**960**
Minimum		**22.0**	**11.9**	**4.1**	**10.9**	**536**
Standard Deviation		**2.6**	**1.6**	**0.3**	**1.0**	**152.7**
98th percentile		**31.4**	**17.7**	**5.0**	**14.4**	**953.0**

Location Name : Sutara (AAQ-7)					Sampling Duration 24 hrs period	
Date		PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO µg/m^3
Standards		100 max	60 max	80 max	80 max	2000 max
October - 2015						
1St Week	05.10.2015	29.6	15.7	4.3	10.6	658
	06.10.2015	23.8	12.1	4.6	11.4	586
2rd Week	12.10.2015	25.6	14.3	4.8	10.5	695
	13.10.2015	24.8	12.9	4.9	11.3	726
3rd Week	19.10.2015	26.9	14.3	4.1	13.2	645
	20.10.2015	21.3	11.7	4.6	10.8	632
4th Week	26.10.2015	25.8	15.0	4.8	11.4	594
	27.10.2015	23.4	12.6	4.3	12.6	642
November -2015						
5th Week	02.11.2015	25.9	15.0	4.5	11.4	594
	03.11.2015	26.0	14.3	4.7	12.6	497
6th Week	09.11.2015	23.4	12.6	4.3	11.7	546
	10.11.2015	27.3	15.0	4.6	13.4	632
7th Week	16.11.2015	21.8	12.0	4.9	11.6	654
	17.11.2015	26.5	14.0	4.1	12.0	712
8th Week	23.11.2015	24.8	13.1	4.5	11.5	689
	24.11.2015	20.9	11.6	4.3	12.3	642
December - 2015						
9th Week	30.11.2015	26.3	13.9	4.6	13.2	712
	01.12.2015	27.9	14.2	4.9	11.6	765
10th Week	07.12.2015	25.3	14.2	4.8	13.0	685
	08.12.2015	24.1	12.5	5.1	11.8	765
11th Week	14.12.2015	26.9	14.3	4.6	13.4	789
	15.12.2015	28.3	15.6	4.2	14.2	743
12th Week	21.12.2015	26.5	15.4	4.8	14.8	845
	22.12.2015	24.0	13.0	4.5	13.4	826
13th Week	28.12.2015	26.9	15.6	4.9	15.9	795
	29.12.2015	27.3	15.0	4.7	14.0	809
Arithmetic mean		25.4	13.8	4.6	12.4	687.6
Maximum		29.6	15.7	5.1	15.9	845
Minimum		20.9	11.6	4.1	10.5	497
Standard Deviation		2.1	1.3	0.3	1.3	88.7
98th percentile		29.0	15.7	5.0	15.4	835.5

Observations:

PM_{10}: The maximum value for PM_{10} observed at Dhaneshwar 56.34 μg/m^3 and minimum value for PM_{10} observed at Sutara Village **20.9** μg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 100 μg/m^3.

$PM_{2.5}$: The maximum value for $PM_{2.5}$ observed at Dhaneshwar 31.0 μg/m^3 and minimum value for $PM_{2.5}$ observed at Tapura Ki Khan Village 11.4 μg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 60 μg/m^3.

SO_2: The maximum value for SO_2 observed at Dhaneshwar 6.9 μg/m^3 and minimum value for SO_2 observed at Tapura Ki Khan Village **4.1** μg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 μg/m^3.

NO_2: The maximum value for NO_2 observed at Dhaneshwar 23.8 μg/m^3 and minimum value for NO_2 observed at Tapura Ki Khan Village 10.5 μg/m^3. The 24 hours applicable limit for industrial, Residential Rural and Other Areas is 80 μg/m^3.

CO: The maximum value for CO observed at Dhaneshwar 1422 μg/m^3 and minimum value for CO observed at Chainpuriya Village 468μg/m^3. The 8 hours applicable limit for Industrial, Residential Rural and other areas is 2000 μg/m^3.

Results and Conclusions:

The results of the monitored data indicate that the ambient air quality of the region in general is conformity with respect to norms of National Ambient Air Quality standards, at all locations monitored.

CHEMICAL CHARACTERIZATION ANALYSIS OF PM_{10}

Location Name : Project Site		**Date of Sampling : 24.11.2015**	
S.No	**Parameters**	**Units**	**Project Site Results**
1.	Respirable Particulate Matter (PM_{10})	μg/m^3	31.8
2.	Calcium as Ca	μg/m^3	1.12
3.	Magnesium as Mg	μg/m^3	0.48
4.	Sodium as Na	μg/m^3	0.04
5.	Free Silica as Si	μg/m^3	11.24
6.	Potassium as K	μg/m^3	<0.01
7.	Chromium as Cr	μg/m^3	<0.01
8.	Aluminum as Al	μg/m^3	<0.01
9.	Lead as Pb	μg/m^3	<0.01
10.	Zinc as Zn	μg/m^3	<0.01
11.	Iron as Fe	μg/m^3	<0.01
12.	Nickel as Ni	μg/m^3	<0.01
13.	Barium as Ba	μg/m^3	<0.01
14.	Cadmium as Cd	μg/m^3	< 0.01
15.	Mercury as Hg	μg/m^3	<0.001
16.	Arsenic as As	μg/m^3	<0.01

AMBIENT AIR QUALITY MONITORING

Location : : Project Site (AAQ-1)				
	Date	VOC PPM	Hydro Carbons(HC) mg/m^3	
			Methane	Non-Methane
1.	12.10.2015	BDL	BDL	BDL
2.	13.10.2015	BDL	BDL	BDL
3.	19.10.2015	BDL	BDL	BDL
4.	20.10.2015	BDL	BDL	BDL
5.	09.11.2015	BDL	BDL	BDL
6.	10.11.2015	BDL	BDL	BDL
7.	16.11.2015	BDL	BDL	BDL
8.	17.11.2015	BDL	BDL	BDL
9.	22.12.2015	BDL	BDL	BDL
10.	28.12.2015	BDL	BDL	BDL
11.	29.12.2015	BDL	BDL	BDL
Arithmetic Mean		**BDL**	**BDL**	**BDL**
Maximum		**BDL**	**BDL**	**BDL**
Minimum		**BDL**	**BDL**	**BDL**
50th percentile		**BDL**	**BDL**	**BDL**
98th percentile		**BDL**	**BDL**	**BDL**

Note:-

1. VOC analyzed through VOC Analyzer

Model PhoCheck 1000
Handheld PID Detector for VOCs
Wide Detection Range : 0.1 to 4000 ppm
(BDL is <0.1ppm)

2. HC (Methane & Non- Methane (GC/FID)

In view of the use of this detector in methods 101,108 & 130. This expanded discussion is provided here. A Flame Ionization Detector(FID) is a device which incorporate regulated fuel air and sample delivery systems, an internal burner and associated electronics for measuring the ion current produced by species introduced in to the flame. The FID is used to sense and measure small amount of gases organic type components present in the carrier gas stream leaving the column of a gas chromatography(GC) or to monitor methane and / or total hydrocarbon concentrations in ambient air samples.

Range & sensitivity: 0.1-13mg/m^3

BDL is < 0.1mg/m^3

CHEMICAL CHARACTERIZATION ANALYSIS OF PM 10

S.N0	Parameters		Units	Results
1.	Particulate Matter (PM10) 24.11.2015 (Project Site) (1140 m^3 sample Volume)		µg/m^3	31.8
2.	Silica		µg/m^3	<0.1
3.	**POLY-AROMATIC HYDROCARBONS (PAH)**			
	Compound (PAH)		**Minimum Detection Limit (ug/L)**	**Result (ug/L)**
	LC Column PAH (HC-ODC SIL-X eq			
	I	Naphthalene	1.8	1.8
	II	Acenaphthalene	2.3	2.3
	III	Acenaphthene	1.8	1.8
	IV	Fluorene	0.21	<0.21
	GC Column 3% OV-17 Chromos orb			
	A	Anthracene (Group + Phenanthrene)	28.7	28.8
	B	Pyrene	3.4	3.5
	C	Benzo Fluranthene	3.1	< 3.1
	D	Benao (a) pyrene	4.0	< 4.0
	E	Fluoranthene	3.0	< 3.0
	F	Chrysene	4.2	< 4.2
	Note: Total PAH observed in the Air Volume are 35.5 µg/L which is represented by actual sample volume of 1140 m^3. The volume of total PAH PM10 works out <0.05 µg/m^3. The above results interpreted in light of the AAQ standards, indicated that the Ambient Air quality of the sampling location was free of PAH contamination at the time of sampling.			

Noise Monitoring

The statistical analysis is done for measured noise levels at seven locations in the study area. The parameters are analyzed for Leq_{day} and Leq_{night}. The statistical analysis results are given below:

AMBIENT NOISE LEVELS IN THE STUDY AREA

Sample code .NO	Location Name	Noise Monitoring Date
N – 1	Project Site Mine	20.10.2015
N – 2	Gudha	26.10.2015
N – 3	Chainpuriya	05.11.2015
N – 4	Dhaneshwar	09.11.2015
N – 5	Tapura Ki Khan	15.11.2015
N – 6	Dasoliya	23.11.2015
N – 7	Sutara	26.11.2015

Time	N-1	N-2	N-3	N-4	N-5	N-6	N-7
Day time	Units Leq dB (A)						
7.00	41.6	46.2	39.9	37.5	37.9	39.9	40.8
8.00	42.9	48.5	43.2	39.6	40.6	41.5	41.9
9.00	45.6	50.2	47.9	42.9	42.5	42.6	45.6
10.00	49.9	53.5	49.9	45.8	46.6	47.9	48.9
11.00	51.6	52.3	50.2	48.5	49.6	49.9	50.6
12 Noon	52.0	51.0	51.6	49.6	48.7	50.9	51.8
13.00	50.3	50.0	52.0	50.3	50.9	52.6	52.6
14.00	50.6	51.6	51.2	50.0	52.0	51.4	51.5
15.00	49.6	48.9	50.9	48.2	50.8	50.6	49.9
16.00	48.3	46.8	50.3	47.5	49.6	49.9	48.7
17.00	46.7	50.2	49.9	46.4	48.7	50.6	47.6
18.00	49.9	51.6	50.6	45.1	47.3	49.7	50.6
19.00	50.6	46.4	51.3	48.2	49.8	50.6	48.1
20.00	51.3	45.5	52.0	49.5	50.5	52.3	46.2
21.00	50.1	44.3	51.2	50.6	51.6	53.5	43.2
Night time							
22.00	48.7	42.9	48.6	49.2	50.0	51.5	41.0
23.00	47.6	40.3	46.5	48.5	48.9	49.4	38.6
24.00	44.3	38.9	44.3	44.6	46.4	46.5	35.0
1.00	40.2	36.9	42.1	41.2	44.1	44.7	35.0
2.00	39.8	35.2	40.3	38.8	38.6	40.5	35.0
3.00	38.1	36.4	38.7	36.5	37.2	37.2	36.5
4.00	36.3	38.9	37.2	35.6	36.4	36.2	38.7
5.00	38.9	40.5	35.6	35.2	35.2	35.1	36.7
6.00	40.1	42.3	37.9	35.0	37.3	37.7	39.9
Leq day dB(A)	**49.5**	**49.9**	**50.3**	**47.8**	**49.1**	**50.2**	**49.0**
Leq Night dB(A)	**43.6**	**39.8**	**43.3**	**43.8**	**44.8**	**45.7**	**37.9**
LDay equivalent	**48.2**	**48.4**	**48.9**	**46.8**	**48.1**	**49.0**	**49.7**

Observations

a) **Day Time Noise Levels (Leq_{day})**

Study Area

The daytime (Leq_{day}) noise levels are observed to be in the range of 50.5 – 47.8 dB (A) which are within the prescribed limit of 55 dB(A).

b) **Night time Noise Levels (Leq_{night})**

Study Area

The nighttime (Leq_{night}) Noise levels are observed to be in the range of 48.5 – 39.8 dB (A) Which are within the prescribed limit of 45 dB (A).

Ground Water Quality

Seven Ground water samples around the project Area was collected and analyzed. The analytical results are given below.

Sample code .NO	Location Name	Date of sampling
GW-1	Project Site (Mine)	19.12.2015
GW-2	Gudha	19.12.2015
GW-3	Chainpuriya	20.12.2015
GW-4	Dhaneshwar	18.12.2015
GW-5	Tapura Ki Khan	19.12.2015
GW-6	Dasoliya	18.12.2015
GW-7	Sutara	19.12.2015

GROUND WATER ANALYSIS RESULTS AS PER 10500-2012

Sr.No	Parameter	Requirement (Desirable Limits)	Permissible Limits in the Absence of Alternate Source	Units	GW1	GW2	GW3
1	pH @25 ^{O}C	6.5 – 8.5	NR	-	7.04	6.85	7.26
2	Color (Hazen units)	< 5	< 25	Hazen	<01	<01	<01
3	Taste	Agreeable	-	-	Agreeable	Agreeable	Agreeable
4	Odor	Unobjec-tionable	-	-	Unobjecti onable	Unobjecti onable	Unobjecti onable
5	Conductivity@25 ^{O}C	--	--	µS/cm	872	356	1426
6	Turbidity (NTU)	< 5	< 10	NTU	1.1	1.3	1.2
7	Total Dissolve Solids	< 500	< 2000	mg/L	554	228	917
8	Total Hardness as $CaCO_3$	< 200	< 600	mg/L	220	120	540
9	Total Alkalinity	< 200	< 600	mg/L	290	70	290
10	Calcium as Ca	< 75	< 200	mg/L	48.0	24.0	120.0
11	Magnesium as Mg	< 30	< 100	mg/L	24.0	14.4	57.6
12	Residual Chlorine	< 0.2	-	mg/L	<0.02	<0.02	<0.02
13	Boron	< 1	< 5	mg/L	0.028	0.021	0.028
14	Chloride as Cl	< 250	< 1000	mg/L	60.0	35.0	190.1
15	Sulphate as SO_4	< 200	< 400	mg/L	40.8	44.8	130.8
16	Fluorides as F-	< 1.0	< 1.5	mg/L	0.7	0.3	0.2
17	Nitrates as NO_3	< 45	NR	mg/L	4.2	6.9	11.3
18	Phenolic Compounds	< 0.001	< 0.002	mg/L	<0.001	<0.001	<0.001
19	Cyanide as CN	< 0.05	NR	mg/L	<0.001	<0.001	<0.001
20	Anionic Detergents	< 0.2	< 1.0	mg/L	<0.001	<0.001	<0.001
21	Mineral Oil	< 0.01	< 0.03	mg/L	<0.001	<0.001	<0.001
22	Cadmium as Cd	< 0.01	NR	mg/L	<0.001	<0.001	<0.001
23	Arsenic as As	< 0.01	NR	mg/L	<0.001	<0.001	<0.001
24	Copper as Cu	< 0.05	< 1.5	mg/L	0.043	0.025	0.035
25	Lead as Pb	< 0.05	NR	mg/L	<0.001	<0.001	<0.001
26	Manganese as Mn	< 0.1	< 0.3	mg/L	<0.001	<0.001	<0.001
27	Iron as Fe	< 0.3	NR	mg/L	0.16	0.18	0.24
28	Chromium as Cr^{6+}	< 0.05	NR	mg/L	<0.001	<0.001	<0.001
29	Zinc as Zn	< 5	< 15	mg/L	0.069	0.046	0.072
30	Aluminum as Al	< 0.03	< 0.2	mg/L	<0.001	<0.001	<0.001
31	Mercury as Hg	< 0.001	NR	mg/L	<0.0002	<0.0002	<0.0002
32	Selenium as Se	< 0.01	NR	mg/L	< 0.001	< 0.001	< 0.001
33	E-coli(Nos/100 ml)	Absent	-	-	Not detected	Not detected	Not detected
34	Coliform Organisms/100mL	<10	--	MPN/ 100 ml	Not detected	Not detected	Not detected

Results & Conclusions

It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under ;acceptable" render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limit indicated under 'permissible limit in the absence of alternate source' in Colum permissible, above which the source will have to be rejected. If E.coli or Total Coliform are detected immediate treatment is require as per IS: 10500-1991 (Reaffirmed 2012).

GROUND WATER ANALYSIS RESULTS AS PER 10500-2012

Sr.No	Parameter	Requirement (Desirable Limits)	Permissible Limits in the Absence of Alternate Source	Units	GW4	GW5	GW6	GW7
1	pH @25 °C	6.5 – 8.5	NR	-	6.84	6.79	7.06	7.24
2	Color (Hazen units)	< 5	< 25	Hazen	<01	<01	<01	<01
3	Taste	Agreeable	-	-	Agreeable	Agreeable	Agreeable	Agreeable
4	Odor	Unobjec-tionable	-	-	Unobjec tionable	Unobjection able	Unobjec tionable	Unobjec tionable
5	Conductivity@25 °C	--	--	µS/cm	692	436	818	898
6	Turbidity (NTU)	< 5	< 10	NTU	1.1	1.0	1.1	1.1
7	Total Dissolve solids	< 500	< 2000	mg/L	438	279	524	572
8	Total Hardness as $CaCO_3$	< 200	< 600	mg/L	210	150	260	340
9	Total Alkalinity	< 200	< 600	mg/L	200	100	180	270
10	Calcium as Ca	< 75	< 200	mg/L	48.0	36.0	64.0	92.0
11	Magnesium as Mg	< 30	< 100	mg/L	21.6	14.4	24.0	26.4
12	Residual Chlorine	< 0.2	-	mg/L	<0.02	<0.02	<0.02	<0.02
13	Boron	< 1	< 5	mg/L	0.029	0.015	0.021	0.062
14	Chloride as Cl	< 250	< 1000	mg/L	55.0	40.0	90.0	65.0
15	Sulphate as SO_4	< 200	< 400	mg/L	50.4	45.7	80.8	65.7
16	Fluorides as F-	< 1.0	< 1.5	mg/L	0.5	0.3	0.6	0.3
17	Nitrates as NO_3	< 45	< 100	mg/L	9.4	8.1	10.7	11.2
18	Phenolic Compounds	< 0.001	< 0.002	mg/L	<0.001	<0.001	<0.001	<0.001
19	Cyanide as CN	< 0.05	NR	mg/L	<0.001	<0.001	<0.001	<0.001
20	Anionic Detergents	< 0.2	< 1.0	mg/L	<0.001	<0.001	<0.001	<0.001
21	Mineral Oil	< 0.01	< 0.03	mg/L	<0.001	<0.001	<0.001	<0.001
22	Cadmium as Cd	< 0.01	NR	mg/L	<0.001	<0.001	<0.001	<0.001
23	Arsenic as As	< 0.01	NR	mg/L	<0.001	<0.001	<0.001	<0.001
24	Copper as Cu	< 0.05	< 1.5	mg/L	0.049	0.029	0.037	0.025
25	Lead as Pb	< 0.05	NR	mg/L	<0.001	<0.001	<0.001	<0.001
26	Manganese as Mn	< 0.1	< 0.3	mg/L	<0.001	<0.001	<0.001	<0.001
27	Iron as Fe	< 0.3	< 1.0	mg/L	0.25	0.12	0.13	0.14
28	Chromium as Cr^{6+}	< 0.05	NR	mg/L	<0.001	<0.001	<0.001	<0.001
29	Zinc as Zn	< 5	< 15	mg/L	0.059	0.025	0.029	0.036
30	Aluminum as Al	< 0.03	< 0.2	mg/L	<0.001	<0.001	<0.001	<0.001
31	Mercury as Hg	< 0.001	NR	mg/L	<0.0002	<0.0002	<0.0002	<0.0002
32	Selenium as Se	< 0.01	NR	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
33	E-coli	Absent	--	/100ml	Not detected	Not detected	Not detected	Not detected
34	Coli form Organisms	Absent	--	MPN/ 100 ml	Not detected	Not detected	Not detected	Not detected

Results & Conclusions

It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under :acceptable" render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limit indicated under 'permissible limit in the absence of alternate source' in Colum permissible, above which the source will have to be rejected. If E.coli or Total Coliform are detected immediate treatment is require as per IS: 10500-1991 (Reaffirmed 2012),

Surface Water Quality

As per work Order Two Surface water samples in 10 km radius of project Area was collected and analyzed. The analytical results are given below.

SURFACE WATER ANALYSIS RESULTS as per IS:2296-1982

Sample Code .NO	Location Name	Date of sampling
SW-1	Eru Nadi	19.12.2015
SW-2	Dhaneswar Thalab	18.12.2015

Sr.No.	Parameter	Limits as per IS: 2296 Class C	Units	SW-1 Test Results	SW-2 Test Results
1	pH @ 25 °C	6.5 – 8.5	-	7.96	8.11
2	Color (Hazen units)	< 300	Hazen	03	06
3	Taste	--	-	Agreeable	Agreeable
4	Odor	--	-	Unobjectionable	Unobjectionable
5	Conductivity @ 25 °C	--	µS/cm	498	292
6	Turbidity (NTU)	--	NTU	3.6	4.6
7	Total Dissolve solids	< 1500	mg/L	318	186
8	Total Hardness as $CaCO_3$	--	mg/L	210	120
9	Total Alkalinity	--	mg/L	150	100
10	Calcium as Ca	--	mg/L	44.0	28.0
11	Magnesium as Mg	--	mg/L	24.0	12.0
12	Residual Chlorine	--	mg/L	<0.02	<0.02
13	Boron	--	mg/L	<0.001	<0.001
14	Chloride as Cl	< 600	mg/L	40.0	20.0
15	Sulphate as SO_4	< 400	mg/L	32.3	10.4
16	Fluorides as F^-	< 1.5	mg/L	0.3	0.2
17	Nitrates as NO_3	< 50	mg/L	5.4	3.7
18	Phenolic Compounds	< 0.005	mg/L	<0.001	<0.001
19	Cyanide as CN	< 0.05	mg/L	<0.001	<0.001
20	Anionic Detergents	< 1	mg/L	<0.001	0.062
21	Mineral Oil	--	mg/L	<0.01	<0.01
22	Cadmium as Cd	< 0.01	mg/L	<0.001	<0.001
23	Arsenic as As	< 0.2	mg/L	<0.001	<0.001
24	Copper as Cu	< 1.5	mg/L	0.03	0.006
25	Lead as Pb	< 0.1	mg/L	<0.001	<0.001
26	Manganese as Mn	--	mg/L	<0.001	<0.001
27	Iron as Fe	< 50	mg/L	0.26	0.36
28	Chromium as Cr^{6+}	< 0.05	mg/L	<0.001	<0.001
29	Zinc as Zn	< 15	mg/L	0.041	0.052
30	Aluminum as Al	--	mg/L	<0.001	< 0.001
31	Mercury as Hg	--	mg/L	<0.0002	< 0.0001
32	Selenium as Se	< 0.05	mg/L	< 0.001	< 0.001
33	Dissolved Oxygen	>4	mg/L	5.6	5.4
34	Biochemical Oxygen Demand (5 days at 20^0 C)	< 3	mg/L	03	06
35	Chemical Oxygen Demand	--	mg/L	06	18
36	E-coli(Nos/100 ml)	--	cfu/100ml	Absent	Absent
37	Coliform Organisms	< 5000	MPN/100 ml	680	140

Results & Conclusions

The results indicates that the Surface Water quality results are well with in the limits as per IS 2296 Class-C.

Soil Quality

Seven soil samples around the project Area was collected and analyzed. The analytical results are given in blow.

SOIL QUALITY ANALYSIS RESULTS

Sample Code .NO	Location Name	Date of sampling
S-1	Project Site Mine	19.12.2015
S-2	Gudha	19.12.2015
S-3	Chainpuriya	20.12.2015
S-4	Dhaneshwar	18.12.2015
S-5	Tapura Ki Khan	19.12.2015
S-6	Dasoliya	18.12.2015
S-7	Sutara	19.12.2015

S.No	PARAMETERES		UNITS	S-1	S-2	S-3
1	Texture		-	Sandy Clay	Clay	Sandy Clay
2.	Particle size Distributions	Sand	%	25	22	39
		Silt	%	18	26	15
		Clay	%	57	52	46
3.	Appearance		--	Brown Color	Brown Color	Brown Color
4.	Sodium as Na		mg/100grm	1.62	1.33	1.4
5.	pH (10% Slurry) @ 25 °C		-	7.81	7.49	7.65
6.	Conductivity @25 °C		µmhos/cm	154	136	126
7.	Bulk density		gram/cc	1.43	1.35	1.44
8.	Porosity		% v/v	36	56	38
9.	Total Organic Matter(TOM)		%	3.28	4.24	2.92
10.	Nitrogen as N		mg/100grm	212	312	256
11.	Potassium as K		mg/100grm	119	165	121
12.	Phosphorus as P		mg/100grm	52	88	56
13.	Zinc as Zn		mg/kg	3.64	4.56	2.44
14.	Cadmium as Cd		mg/kg	<0.01	<0.01	<0.01
15.	Chlorides as Cl		mg/100grm	1.54	1.22	1.16
16.	Alkali Metals		mg/kg	2.1	1.6	1.8
17.	Permeability		Cm/h	5.6	4.2	5.8
18.	Water holding capacity		%	27	38	21
19.	Copper as Cu		mg/kg	0.18	0.22	0.11
20.	Iron as Fe		mg/kg	0.11	0.27	0.28
21.	Lithium		mg/kg	<0.01	<0.01	<0.01
22.	Moisture Content		%	<1.0	<1.0	<1.0
23.	Boron as B		mg/kg	0.068	0.29	0.12

SOIL QUALITY ANALYSIS RESULTS

S.No	PARAMETERES		UNITS	S-4	S-5	S-6	S-7
1	Texture		-	Sandy Clay	Sandy Clay	Clay	Silty Caly
2.	Particle size Distributions	Sand	%	32	28	19	16
		Silt	%	15	20	28	45
		Clay	%	53	52	53	39
3.	Appearance		--	Brown Color	Brown Color	Brown Color	Brown Color
4.	Sodium as Na		mg/100grm	2.12	1.65	1.48	1.12
5.	pH (10% Slurry) @ 25 °C		-	7.65	7.29	7.01	8.06
6.	Conductivity @25 °C		µmhos/cm	115	128	137	169
7.	Bulk density		gram/cc	1.45	1.39	1.29	1.19
8.	Porosity		% v/v	28	29	38	52
9.	Total Organic Matter(TOM)		%	2.98	3.46	3.19	4.39
10.	Nitrogen as N		mg/100grm	265	278	321	368
11.	Potassium as K		mg/100grm	116	124	164	187
12.	Phosphorus as P		mg/100grm	69	75	88	97
13.	Zinc as Zn		mg/kg	4.06	3.98	5.12	5.89
14.	Cadmium as Cd		mg/kg	<0.01	<0.01	<0.01	<0.01
15.	Chlorides as Cl		mg/100grm	1.26	1.32	1.76	1.42
16.	Alkali Metals		mg/kg	1.6	2.2	1.5	1.9
17.	Permeability		Cm/h	5.5	5.3	4.6	4.0
18.	Water holding capacity		%	21.6	24.2	45.6	59.9
19.	Copper as Cu		mg/kg	0.18	0.21	0.32	0.41
20.	Iron as Fe		mg/kg	0.11	0.13	0.18	0.28
21.	Lithium		mg/kg	<0.01	<0.01	<0.01	<0.01
22.	Moisture Content		%	<1.0	<1.0	<1.0	<1.0
23.	Boron as B		mg/kg	0.16	0.18	0.25	0.33

Results & Conclusions

The soil analysis results are presented in Table. The result obtained is compared with the standard soil classification given Agriculture Soil Limits. It has been observed that the soils are Sandy clay in texture and neutral in nature. The nutrient and organic matter contents are medium and the soil is normally fertile.

SOME PHOTO GRAPHS AT THE TIME OF SAMPLING

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
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PART II—Section 3—Sub-section (ii)
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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 2 जुलाई, 2014

का.आ. 1680(अ).—केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियम, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, पर्यावरण और वन मंत्रालय, भारत सरकार की अधिसूचना संख्यांक का. आ.1174(अ) तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :--

उक्त अधिसूचना से संलग्न सूची में,-

(क) क्रम संख्यांक 59, संख्यांक 63 और संख्यांक 70 और उससे संबंधित प्रविष्टियों के स्थान पर निम्नलिखित क्रम संख्यांक और प्रविष्टिया रखी जाएगी, अर्थात् :--

(1)	(2)	(3)	(4)
"59	मैसर्स एसजीएस इंडिया प्रा0 लि0, प्लॉट न0 28 बी0/1 (एस0पी), 28 बी0/2, सेकण्ड मेन रोड, अंबातूर औद्योगिक एस्टेट, एस0बी0आई0 बैंक के सामने, चेन्नई - 600083 (तमिल नाडू)	(1) श्री0 एस0 कालिया पदम्जा (2) श्री0 एम0 एलण्पन (3) श्री0 वी0 मूलुक्कुमार	02 07 2014 से 01 07 2019
63	मैसर्स आकांक्षा एनालिटिकल एण्ड रिसर्च लैब, एस0नं0 613, प्लॉट नं0 5, गंगा धाम लैण्डमार्क रो हाऊसेस के सामने, फेस-1, बिबवेवाडी, पुणे- 411037 (महाराष्ट्र)	(1) श्री0 राहुल पी0 चारमूंगी (2) श्री0 अभिषेक एस0 मुलातकर (3) श्री0 शिवाजी रामचन्द्र वामूलकर	02 07 2014 से 01 07 2019
70	मैसर्स विसन लैब्स, हाऊस न0 16-11-23/37/, फलैट नं0 205 और 206, द्वितीय तल, एन0 मार्ट भवन, मालाकपेट,	(1) श्री0 टी0 लक्ष्मीकांत रेड्डी (2) श्री0 के0 जितेन्द्र रेड्डी (3) श्री0 एल0 चन्द्रशेखर रेड्डी	02 07 2014 से 01.07.2019"।

	हैदराबाद - 500036 (तेलँगाना)		

[फा0 सं0 क्यू-15018/23/2013-सीपीडब्ल्यू]

डा0 राशिद हसन, सलाहकार

टिप्पण : मूल अधिसूचना भारत के राजपत्र, असाधारण, में संख्यांक. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 द्वारा प्रकाशित की गई थी और तत्पश्चात् अधिसूचना सं0 का.आ. 1539(अ), तारीख 13 सितंबर, 2007, का.आ. 1811(अ), तारीख 24 अक्तूबर, 2007, का.आ. 55(अ), तारीख 9 जनवरी, 2008, का.आ. 428(अ), तारीख 4 मार्च, 2008, का.आ. 865(अ), तारीख 11 अप्रैल, 2008, का.आ. 1894(अ), तारीख 31 जुलाई, 2008, का.आ. 2728(अ), तारीख 25 नवबर, 2008, का.आ. 1356(अ), तारीख 27 मई, 2009, का.आ.1802(अ) तारीख 22 जुलाई, 2009, का.आ.2399(अ) तारीख 18 सितंबर, 2009, का.आ. 3122(अ), तारीख 7 दिसंबर, 2009, का.आ. 3123(अ), तारीख 7 दिसम्बर, 2009, का.आ. 142(अ), तारीख 21 जनवरी, 2010, का.आ. 619(अ), तारीख 19 मार्च, 2010, का.आ. 1662(अ), तारीख 13 जुलाई, 2010, का.आ. 2390(अ), तारीख 30 सितबर, 2010, का.आ. 2904 (अ), तारीख 8 दिसंबर, 2010, का.आ. 181(अ), तारीख 28 जनवरी, 2011, का.आ. 692(अ), तारीख 5 अप्रैल, 2011, का.आ. 1537(अ), तारीख 6 जुलाई, 2011, का.आ. 1754(अ), तारीख 28 जुलाई, 2011, का.आ. 2609(अ), तारीख 22 नवंबर, 2011, का.आ. 264(अ), तारीख 13 फरवरी, 2012, का.आ. 1150(अ), तारीख 22 मई, 2012, का.आ. 2039(अ), तारीख 5 सितबर, 2012, का.आ. 2802(अ), तारीख 27 नवंबर, 2012 और का.आ. 2850(अ), तारीख 7 दिसम्बर, 2012 तथा का.आ. 592(अ), तारीख 8 मार्च, 2013, का.आ. 945(अ), तारीख 8 अप्रैल, 2013, का.आ. 2287(अ), तारीख 27 जुलाई, 2013, का.आ. 2288(अ), तारीख 27 जुलाई, 2013 और का.आ. 3489(अ), तारीख 26 नवबर, 2013, का.आ. 21(अ), तारीख 3 जनवरी, 2014, का.आ. 561(अ), तारीख 26 फरवरी, 2014, का.आ. 1205 (अ), तारीख 1 मई, 2014, का.आ. 1190 (अ), तारीख 2 मई, 2014, द्वारा उसका संशोधन किया गया था ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 2nd July, 2014

S.O. 1680(E).— In exercise of the powers conferred by clause (b) of sub-section (1) of section 12 and section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E), dated the 18th July, 2007, namely :-

In the TABLE appended to the said notification,-

(a) for serial numbers 59, 63 and 70 and the entries relating thereto, the following serial numbers and entries shall be substituted, namely :-

(1)	(2)	(3)	(4)
59	M/s SGS India Private Limited, Plot No. 28 B/1(SP), 28 B/2(SP), Second Main Road, Ambattur Industrial Estate, Opposite to SBI India Chennai - 600058 (Tamil Nadu)	(1) Ms. S. Kaila Padmaja (2) Mr. M. Ellappan (3) Mr. V. Muthukumar	02.07.2014 to 01.07.2019

63	M/s Akanksha Analytical & Research Lab, S.No. 613, Plot No.5, Ganga Dham, Phase-I, Opp. Ganga Landmark Row-Houses, Bibwewadi, Pune-411037 (Maharashtra)	(1) Mr. Rahul P. Chormunge (2) Mr. Abhishek S. Mulatkar (3) Mr. Shivaji Ramchandra Wamulkar	02.07.2014 to 01.07.2019
70	M/s Vison Labs, H.No.16-11-23/37/A, Flat No. 205 & 206, 2nd Floor, N-Mart Building, Malakpet Hyderabad - 500036 (Thelangana)	(1) Mr. T. Laxmikanth Reddy (2) Mr. K. Jitender Reddy (3) Mr. L. Chandra Sekhar Reddy.	02.07.2014 to 01.07.20[illegible]

[F.No. Q-15018/23/2013-CPW]

Dr. RASHID HASAN, Advisor

Note.- The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O. 1811(E), dated the 24th October, 2007, S.O.55(E), dated 9th January, 2008, S.O. 428(E), dated the 4th March, 2008, S.O. 865(E) dated the 11th April, 2008, S.O. 1894(E) dated the 31st July, 2008, S.O. 2728(E) dated the 25th November, 2008, S.O. 1356(E) dated the 27 th May, 2009, S.O.1802(E) dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O. 3122(E), dated the 7th December, 2009, S.O. 3123(E), dated the 7th December, 2009, S.O. 142(E), dated the 21st January, 2010, S.O. 619(E), 19th March, 2010, S.O. 1662(E) dated the 13th July, 2010, S.O. 2390(E), dated the 30th September, 2010, S.O. 2904(E), dated the 8th December, 2010, S.O. 181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O. 1537(E), dated the 6th July, 2011 , S.O. 1754(E), dated the 28th July,2011 S.O. 2609 (E) dated the 22nd November, 2011, S.O. 264 (E), dated the 13 February, 2012, S.O. 1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September,2012, S.O. 2802(E) dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O. 945(E), dated the 8th April, 2013, S.O. 2287(E), dated the 27th July, 2013, S.O. 2288(E), dated the 27th July, 2013, S.O. 3489(E) dated the 26th November, 2013, S.O. 21(E), dated 3rd January, 2014, S.O. 561(E), the 26th February, 2014 , S.O. 1205(E), the 5th May, 2014 and S.O. 1190(E), the 2nd May, 2014.

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and Published by the Controller of Publications, Delhi-110054.

NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

VISON LABS

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

16-11-23/37A, Flat No. 205, Musarambagh, Malakpet, Hyderabad, Telangana

in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-3216

Issue Date 26/11/2014

[redacted]

Valid Until 25/11/2016

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran	Anil Relia	Prof. Ashutosh Sharma
Program Manager	Director	Chairman

रा.प्र.प्र.बो.

राष्ट्रीय परीक्षण और अंशशोधन प्रयोगशाला प्रत्यायन बोर्ड

(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार के अधीन स्वायत्तशासी निकाय)

प्रत्यायन प्रमाण-पत्र

विसन लैब्स

का मूल्यांकन और प्रत्यायन निम्न मानक के अनुसार

आई.एस.ओ./आई.ई.सी. 17025:2005

"परीक्षण एवं अंशशोधन प्रयोगशालाओं की सक्षमता की सामान्य अपेक्षाएँ"

हैदराबाद, तेलंगाना

में स्थित इसकी सुविधाओं के लिए

रासायनिक परीक्षण

के विषय क्षेत्र में किया गया।

(इस प्रयोगशाला के प्रत्यायन के विषय क्षेत्र की जानकारी एन ए बी एल वेबसाइट www.nabl-india.org से भी प्राप्त कर सकते हैं)

प्रमाण-पत्र संख्या प -3216

जारी करने की तिथि 26/11/2014 [redacted] वैधता की तिथि 25/11/2016

यह प्रमाण-पत्र उपर्युक्त मानक तथा राष्ट्रीय परीक्षण और अंशशोधन प्रयोगशाला प्रत्यायन बोर्ड की अतिरिक्त अपेक्षाओं का निरंतर संतोषप्रद अनुपालन किए जाने पर अनुबंध में निर्दिष्टानुसार प्रत्यायन के क्षेत्र के लिए वैध रहेगा।

रा.प्र.प्र.बो. की ओर से हस्ताक्षरित

एन. वेंकटेश्वरन	अनिल रेलिया	प्रो. आशुतोष शर्मा
कार्यक्रम प्रबन्धक	निदेशक	अध्यक्ष

NABET

National Accreditation Board for Education and Training

MARCH 2012

The Managing Director
Vison Labs
H.No. 16-11-7 / 37/A, Flat No. 205,
2nd Floor, Sagar Metro Building, Opp. RTA office, Musarambagh,
Dilsukhnagar, Hyderabad-500 036
Kind Attention: Mr. T. Laxmikanth Reddy)

Dear Sir

QCI – NABET Scheme for Accreditation of EIA Consultant Organization

We refer with reference to your application for QCI – NABET Accreditation as EIA Consultant Organization.

We are pleased to inform you that based on Document & Office Assessments, the Accreditation Committee has recommended conditional accreditation of **Vison Labs** as per the scope given in **Annexure I (A & B)**. Also find attached herewith the following:

a. Detailed terms & conditions of accreditation **(Annexure II)**.
b. Results of various aspects of assessment of your organization **(Annexure III)**.
c. The format which is to be followed for mentioning the names of the experts involved in the EIA reports prepared by you **(Annexure IV)**.

We request you to confirm the correctness of spellings of the names of the experts mentioned in Annexure I B. Please refer the QCI website for the Minutes of the Accreditation Committee Meeting held on March 20, 2012 for observations related to your application for compliance. You are also advised to visit QCI website to stay updated on the Scheme issued from time to time for necessary action at your end.

The accreditation of your organization will be for a period of three years starting March 06, 2012. The annual renewal of the accreditation will be confirmed after surveillance assessment every year. Surveillance assessments will be conducted to ensure compliance with NABET Scheme including the details mentioned in your Quality Manual and the terms & conditions mentioned in Annexure II.

We are requesting you for an early payment of the annual fees and your confirmation of acceptance of the terms & conditions attached. This will enable us to issue you the requisite accreditation certificate.

We thank you for your extended support in making this scheme successful and for your participation in the QCI-NABET.

Thanking and best regards,

(Vipin Sahni)
Director

Institution of Engineers Building, 2nd Floor, Bahadur Shah Zafar Marg, New Delhi – 110 002, India
Tel: +91-11-2337 9921, 2337 8057 Fax: +91-11-2337 9621 email: nabet@qci.org Website: www.qci.org

ISO CERTIFICATE

Certificate of Registration

This certificate has been awarded to

Vison Labs

H. No. 16-11-23/37/A, Flat No. 205, 2nd Floor, Sagar Hotel Building, Opposite R.T.A. Office, Musarambagh, Malakpet, Hyderabad, Andhra Pradesh, 500036, India

in recognition of the organization's Quality Management System which complies with

ISO 9001:2008

The scope of activities covered by this certificate is defined below:

Providing Environmental Consulting and Analytical Services

Certificate Number:	Date of Issue: (Original)	Date of Issue:
45130/A/0001/UK/En	06 April 2011	06 April 2014
Issue No:	Expiry Date:	
2	05 April 2017	

Issued by: *On behalf of the Schemes Manager*

OHSAS CERTIFICATE

Certificate of Registration

This certificate has been issued to

Vison Labs

H.No. 16-11-23/37/A, Flat No.-205, 2nd Floor, N Mart Building, Head Office, Musarambagh, Malakpet, Hyderabad, A.P. 500036, India

in recognition of the organization's Health and Safety Management System which complies with

OHSAS 18001:2007

The scope of activities covered by this certificate is defined below

Providing Environmental Consultancy and Analytical Services

Certificate Number:	Date of Issue: (Original)	Date of Issue
60515/A/0001/UK/En	28 September 2011	28 September 2012
Issue No:	Expiry Date:	
	27 September 2014	

Issued by: *On behalf of the Scheme Manager*

ANNEXURE - XXVII

सत्यमेव जयते

कार्यालय ग्राम पंचायत धनेश्वर

पं.स. तालेड़ा, जिला बून्दी (राज.)

प्रेषक :	प्रेषित :
फूलचन्द भील सरपंच मो. 9549443026	श्रीमान् .....

क्रमांक : 195

दिनांक 25/2/2016

इकरार नामा

यह प्रमाणित किया जाता है कि मै0 कन्हैयालाल रामेश्वरदास सेण्ड स्टोन माइसं लीज न0 47/94 निकट ग्राम धनेश्वर, तहसिल...तालेडा, जिला..बूंदी .. (राज0) को हमारी ग्राम पंचायत व्दारा पर्याप्त पानी (10 के0 एल0 डी0) उपलब्ध करवाने के लिए सहमती दी जाती है ।

ग्राम पंचायत को पानी देने मे कोइ आपत्ती नही है ।जरूरत होने पर गांव के जलदाय विभाग से जलआपूर्ति से पर्याप्त मात्रा मे पानी उपलब्ध करा दिया जावेगा ।

सरपंच ग्राम धनेश्वर,

सरपंच
ग्राम पंचायत धनेश्वर
पं० स० तालेड़ा, जि० बून्दी (राज०)

PROFORMA FOR ENVIRONMENTAL APPRAISAL

PROFORMA FOR ENVIRONMENTAL APPRAISAL OF MINING PROJECTS
(MINING SECTOR PROJECTS)

Note 1	All information to be given in the form of Annex/s should be properly numbered and form part of reply to this Performa.
Note 2	Please enter √ in appropriate box where answer is Yes / No.
Note 3	No abbreviation to be used - **Not available** or **not applicable** should be clearly mentioned.
Note 4	**Core zone** is the mining lease area. **Buffer zone** in case of ML area up to 25 ha. Is to be considered as **5 km** all around the periphery of the core zone and for ML area above 25 ha. An area **10 km** all around the periphery of the core zone.
Note 5	Adopt **Scoping process** in carrying out EIA study.
Note 6	Please indicate source of data.

1.	**General Information**	:	
(a)	Name of the Project	:	Sandstone Mine
(i)	Name of the Proponent	:	Kanhaiya Lal Rameshwar Das
	Mailing Address	:	# 7- A, Vallabh Nagar, Kota - 324007, Rajasthan.
	E-mail	:	arorasunder@yahoo.com
	Telephone no.	:	09828105873, 0744-2501311; 0141-2354997, 2353996
	Fax no.	:	0744-2501711; 0141- 4026996
(b)	Objective of the project	:	Mining of Sandstone
(c)	Location of the mine		

Village	Tehsil	District	State
Dhaneshwar & Sutara	Bundi	Bundi	Rajasthan

(d)	Does the proposal relate to					
(i)	New Mine	:	Yes	--	No	√
(ii)	Expansion	:	Yes	√	No	--
	Increase in ML area	:	Yes	--	No	√
	Increase in annual production	:	Yes	√	No	--
(iii)	Renewal of ML	:	Yes	---	No	√
(iv)	Modernization	:	Yes	--	No	√

(e)	Site Information		
(i)	Geographical Location	:	25°02'53.10" to 25°04'40.78" N; 75°32'29.21"E to 75°36'01.12" E
	Survey of India Toposheet no.	:	45 O/12

	Elevation above mean Sea level	:		Highest	490 MSL	
				Lowest	460 MSL	
	Total mining lease area (in hect.)	:	490.5509 Ha.			
(ii)	Dominant nature of terrain					
	Flat	:	Yes	√	No	--
	Undulated	:	Yes	√	No	--
	Hilly	:	Yes	--	No	√
2.	**Land usage of the mining lease area (in Ha.)**					
(a)	Agricultural	:	--			
(b)	Forest	:	104.34 Ha. (Diversified)			
(c)	Grazing	:	75.0 Ha.			
(d)	Waste land	:	161.2109 Ha. (Govt. waste land)			
(e)	Surface water bodies	:	--			
(f)	Other (Specify)	:	150 ha. (Private Khatedari land)			
	Total	:	**490.5509 Ha.**			
3.	Indicate the seismic zone in which ML area falls. In case of zone IV & V, details of earth quakes in last 10 years.	:	The project site falls in Seismic Zone-II as per IS 1893 (Part-I)-2002. There is no history of land slide, collapse, subsidence and major earthquake in the past.			
(a)	Severity (Richter Scale)	:	--			
(b)	Impact i.e. damage to	:	--			
	Life	:	Yes	--	No	√
	Property	:	Yes	--	No	√
	Existing mine	:	Yes	--	No	√

4. Break-up of mining lease area (in ha.) as per approved Conceptual Plan.

Purpose	Mining Lease Area				Total	Area acquired				Area to be acquired			
	Government		Private			Government		Private		Government		Private	
	Forest	Others	Agri.	Others		Forest	Others	Agri.	Others	Forest	Others	Agri.	Others
1. Area to be excavated	71.19	145.006	--	3.0	219.196	17.00	63.46	--	3.0	54.19	81.546	--	--
2. Storage for top soil	--	--	--	--	--	--	--	--	--	--	--	--	--
3. Overburden/ Dumps	11.10	25.2	--	--	36.3	11.10	25.2	--	--	--	--	--	--
4. Mineral storage	--	7.50	--	--	7.50	--	3.28	--	--	--	4.22	--	--
5.Infrastructure (Workshop, Administrative Building) including Roads	--	8.50	--	--	8.50	--	7.60	--	--	--	0.90	--	--
6. Roads	0.90	13.8	--	--	14.7	0.90	14.34	--	--	--	-0.54	--	--
7. Railways	--	--	--	--	--	--	--	--	--	--	--	--	--
8. Green Belt	21.15	36.2049	--	9.5851	66.94	12.25	20.14	--	5.3	8.9	16.0649	--	4.2851
9. Tailings pond	--	--	--	--	--	--	--	--	--	--	--	--	--
10. Effluent treatment Plant	--	--	--	--	--	--	--	--	--	--	--	--	--
11. Sub-grade Mineral rejects	--	--	--	--	--	--	--	--	--	--	--	--	--
12. Township area/ Village houses	--	--	--	--	--	--	--	--	--	--	--	--	--
13. Other (Specify) a. Un-worked area-Govt. w/l b. Agriculture land C. Water bodies	--	--	--	137.4149	137.4149	--	--	--	--	--	--	--	137.4149
Total	**104.34**	**236.2109**	--	**150.0**	**490.5509**	**41.25**	**134.02**	--	**8.3**	**63.09**	**102.1909**	--	**141.7**

5.	**Township (outside mining lease)**		
(a)	Total area (in hect.)	:	Not Applicable
(b)	No. of dwelling units	:	--
(c)	Distance from mine site	:	--

6.	**Distance of water bodies (in Km)**	
Distance from	River Bank *	Other Water bodies * Sea/ creek/ lake/ nalla etc. (specify)
Mining lease boundary		

S. No.	Water Bodies	Distance (Km) (From Lease Boundary)	Direction
1.	Eru Nadi	2.786	S
2.	Chambal River	8.897	SSE

Ancillary facilities	No ancillary facilities	No ancillary facilities

[* From highest flood line/ high tide line]

7.	**For projects falling within the Coastal Regulation Zone (CRZ).**		Not Applicable		
	Whether the mineral to be mined is of rare nature and not available outside CRZ?	: Yes	--	No	√

If Yes, annex a scaled location map showing low tide line (LTL), high tide line (HTL) duly demarcated by one of the authorized agencies* [*Director, Space Application Centre, Ahmedabad: Centre for Earth Sciences Studies, Thiruvananthapuram: Institute of Remote Sensing, Anna University, Chennai: Institute of Wetland Management & Ecological Designs, Kolkata: Naval Hydrographers's Office, Dehradun: National Institute of Oceanography, Panjim, Goa: and National Institute of Ocean Technology, Chennai], boundary of mining lease area, distance of ML area from LTL and HTL CRZ boundary and CRZ classification of the project area as per the approved Coastal Zone Management Plan, and settlements, sand dunes, mangroves, forest land/patches, turtles breeding and nesting sites etc. if any, in the project area.

8. **Indicate aerial distance from the periphery of core zone/ area from the periphery of the buffer zone to the boundary of following (up to 10 km):-**

S. No.	Areas	Name	Aerial distance from (In Km.) Core * Zone	Buffer* Zone
	National Park/ Sanctuary	Jawahar Sagar	--	1.0 Km towards S

		Sanctuary/ Mukundra Tiger Reserve having common boundary.		
1.	Biosphere Reserve/ Tiger Reserve/ Elephant Reserve/ any other Reserve	None	--	
2.	Forest (RF/ PF/ unclassified√)	As given below:-		

Name of RF/ PF	Near Village	Distance and Direction (From Lease Boundary)	Vegetation
Reserved Forest	Dhaneshwar	0.505 Km, NNE	Northern Tropical dry deciduous forest, Northern dry mixed deciduous forest.
Reserved Forest	Dhaneshwar	2.25 Km, E	
Reserved Forest	Dasaliya B	0.00 Km, NW & SSW	

3.	Habitat for migratory birds	None	--	--
4.	Corridor for animals of schedule I & II of the Wildlife (Protection) Act, 1972	None	--	--
5.	Archaeological sites * Notified * Others	None	--	--
6.	Defense Installation	None	--	--
7.	Industries/ Thermal Power Plants	None	--	-
8.	Other Mines	--	--	-
9.	Airport	Kota Airport	--	28.693 Km, ENE
10.	Railway Lines	Kota	--	28.674 Km, ENE
11.	National/ State Highway	NH-76, Connecting Kota and Chittorgarh	-- -- --	Within the lease area

[* Buffer zone in case of ML area up to 25 ha. is to be considered as **5 km** all around the periphery of the core zone and for ML area above 25 ha. an area **10 km** all around the periphery of the core zone].

9. Description of flora & fauna separately in the core and buffer zones.*

[*Consult the Wildlife (Protection) Act, 1972 as amended subsequently and list species with (1) Common name (2) Scientific name and (3) under which schedule of the Wildlife (Protection) Act the identified species fall. Get the list authenticated by an Expert in the field/ credible scientific institute/ University/ Chief Wildlife Warden Office. **[Information to be based on field survey]**. Details have been given in **Section – III, Sub-section – 3.8.**

10. Details of Mineral Reserves (as per approved Mining Plan)

S. No.	Category	Reserves (Tonnes)
1.	Geological Reserves	1,76,90,361.25
2.	Mineable Reserves	1,07,02,391.25
3.	Targeted production	2,50,000 TPA
4.	Life of Mine	42.80 Years

11. Major geological formation/ disturbances in the mining lease area

(a)	Surface Geological maps submitted	Yes	√**Annexure - XXXI**	No	--
(b)	Geological sections submitted	Yes	√**Annexure - XXXI**	No	--
(c)	Contour map submitted	Yes	√**Annexure – XXIV.**	No	--
(d)	Whether the presence, if any, noted of				
	Faults	Yes	--	No	√
	Dykes	Yes	--	No	√
	Shear Zone	Yes	--	No	√
	Folds	Yes	--	No	√
	Other weak zones	Yes	--	No	√
(e)	Sources of data indicate	Approved Modified Mining Plan			

12. Production of mineral(s) and life of mine

(a)	Rated capacity of mine mineral wise (Tonnes/ Annum)	2,50,000 TPA
(b)	Life of Mine at proposed capacity (Years)	42.80
(c)	Lease period (Years)	30 Years (14.09.1994 to 14.09.2024)
(d)	Date of expiry of lease (D/ M/ Y)	14.09.2024.
	(*New lease - lease deed will be executed after grant of lease followed by Environmental Clearance)	
(e)	Indicate in case of existing mines	
	(i) Date of opening of mine	1952

	(ii) Production in the last 5 years (TPA)	S. No.	Year	Production (Tonne)	
		1.	2010 - 11	58,024	
		2.	2011 - 12	67,796	
		3.	2012 -13	77,530	
		4.	2013 - 14	79,364	
		5.	2014 - 15	74,170	
	(iii) Projected production for the next 5 years after mine is opened in tonne.	Year	Production (Tonnes)		
		IVth	1,50,000		
		Vth	2,50,000		
	(iv) Whether mining was suspended after opening of the mine? If yes, details there of including last production figure and reason for the same.	Yes	--	No	√
(f)	Whether plans & sections provided?	Yes	√ Annexure - XXXI	No	--

13. Type and method of mining operations

TYPE		METHOD	
Opencast	√	Manual	--
Underground	--	Semi-mechanized	√
Both	--	Mechanized	--

14. Details of ancillary operations for mineral processing

(a)	Existing	Nil
(b)	Additional	Nil

15. Mine details

(a)	Opencast Mine	
(i)	Stripping ratio (over burden in m^3 to mineral in tonne)	3.2:1
(ii)	Ultimate working depth (in m bgl)	430 MSL
(iii)	Indicate present working depth in case of existing mine (in m bgl).	449 MSL

(iv)	Thickness of top soil (in m).	:	
	Minimum	:	0.5
	Maximum	:	3.0
	Average	:	1.75
(v)	Thickness of overburden (in m.)	:	Given Below:-
	Minimum	:	0.00
	Maximum	:	0.2
	Average	:	0.1
(vi)	Mining Plan	:	Modified Mining Plan along with Progressive Mine Closure Plan has been approved by SME, Kota vide letter no. 4256 dated 14.10.2015.
	Height and width of the bench in overburden/ waste.	:	Height 3.0 m; Width = 6.0m.
	Height & width of the bench in ore body/ coal seam.	:	Height = 6.0 m; Width = 6.0m.
	Proposed inclination/ slope of the sides of the opencast mine (separately for overburden, coal/ ore and overall slope of the pit sides) both while operating the mine as well as at the time of closure of the mine.	:	Operating: Face slope 60°, Pit Slope 45° Overall slope of the pit: Face slope – 60°, Pit Slope 45°
	Whether transverse sections across the opencast mine at the end of fifth year and at the end of the life of the mine have been submitted?	:	Yes: √ No: --
(vii)	Type of blasting, if any, to be adopted.	:	Controlled blasting will be adopted.
(b)	Underground mine		Yes: -- No: √

Not applicable as no underground mining are existing nor proposed.

(i)	Seam/ Ore body	:	Min. Depth (m)	Max. Depth (m)	Avg. Thickness (m)
			Rate of dip in degree	Direction of dip	
(ii)	Mode of entry into the mine	:	--		
	Shaft	:	--		

	Adit	:	--
	Incline	:	--
(iii)	Details of machinery	:	--
	On surface	:	--
	At Face	:	--
	For transportation	:	--
	Others	:	--
(iv)	Method of stopping (Metalliferrous Mines)	:	--
	Open	:	--
	Filled	:	--
	Shrinkage	:	--
	Caving	:	--
	Combination of above	:	--
	Other (Specify	:	--
(v)	Extraction method	:	--
	Caving	:	--
	Stowing	:	--
	Partial extraction	:	--
(vi)	Subsidence	:	--
	Predicted max. subsidence (in m)	:	--
	Max. value of tensile strain (in mm/ m)	:	
	Max. slope change (in mm/ m)	:	--
	Whether identified possible subsidence area (s) superimposed on Surface Plan has been submitted?	:	--
	Major impacts on surface features like natural drainage pattern, houses, buildings, water bodies, roads, forest, etc.	:	--
	Salient features of subsidence management (monitoring and control).	:	--

16. Surface drainage pattern at mine site

(a)	Whether the pre-mining surface drainage plan submitted?	:	Yes **Annexure – XXIV.**

(b)	Do you propose any modification/ diversion in the existing natural drainage pattern at any stage? If yes, when. Provide location map indicating contours, dimensions of water body to be diverted, direction of flow of water and proposed route/ changes, if any i.e. realignment of river/ nallah/ any other water body falling within core zone and its impact.	:	No

17. Embankment and/ or weir construction.

(a)	Do you propose, at any stage, construction of.	:				
(i)	Embankment for protection against flood?	:	Yes	--	No	√
(ii)	Weir for water storage for the mine?	:	Yes	--	No	√
(b)	If so, provide details thereof.	:	Not Applicable			
(c)	Impact of embankment on HFL and settlement around.	:	Not Applicable			
(d)	Impact of weir on downstream users of water.	:	Not Applicable			
18.	Vehicular traffic density (outside the ML area).	:	As under:-			
(a)	Existing	:	**Type of vehicle**	**No. of vehicles per day**		
			Bus	20-25		
			Truck	25-30		
			Jeep	15-20		
			Car	15-20		
			Tractor	10-15		
			On N.H-76, 80 to 100 vehicles per hour.			
(b)	After the proposed activity	:	**Type of vehicles**	**No. of vehicles per day**		
			Bus	20-25		
			Truck	55-60		
			Jeep	15-20		
			Car	15-20		
			Tractor	10-15		
			Two – Three vehicles per hour			

(c)	Whether the existing road network is adequate? If no, provide details of alternative proposal	:	Yes, it is adequate.

19. Loading, transportation and unloading of mineral and waste rocks on surface

(a)	Manual	:	Yes	--	No	√
(b)	Tubs, mine cars, etc.	:	Yes	--	No	√
(c)	Scraper, shovels, dumpers/ trucks	:	Yes	--	No	√
(d)	Conveyors (belt, chain, etc.)	:	Yes	--	No	√
(e)	Other (Specify)	:	Yes	--	No	√
(f)	Excavators	:	Yes	√	No	--
(g)	Tractors with trolleys	:	Yes	√	No	--

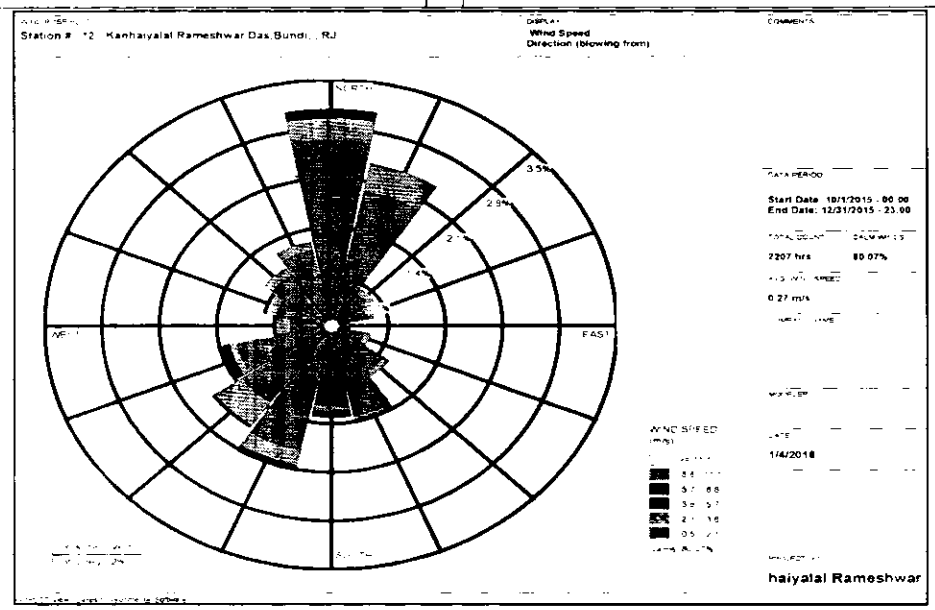
20. Mineral(s) transportation outside the ML area

S. No.	Particulars	:	Qty. (in TPD)	Percentage (%)	Length (in km)
(a)	Road	:	833	100	--
(b)	Rail	:	-	-	-
(c)	Conveyors	:	--	--	-
(d)	Rope way	:	-	-	-
(e)	Water ways	:	-	-	-
(f)	Pipe line	:	-	-	-
(g)	Others (specify)	:	-	-	-
	Total		**833**	**100**	--

21. Baseline Meteorological and Air Quality data.

(a)	Micro-Meteorological Data	:	October, November and December' 2015
	[Continuous monitoring through autographic instrument for one full season other than monsoon].		
(i)	Wind rose pattern for one full season (16 points of compass i.e. W, NNE, NE, SW) based on 24-hourly data. For coastal area also furnish day-time and night time data.		
	Day time	:	As under :-

Night Time	:	
24 – Hours period	:	



(ii)	Site specific monitored data	:	Summary of the wind pattern is given below:-

S. No.	Wind Direction	0.5-2.1 Speed m/s	>= 2.1 Speed m/s	Total
1.	N	58	10	68
2.	NNE	43	9	52
3.	NE	12	2	14
4.	ENE	10	2	12
5.	E	4	1	5
6	ESE	9	2	11
7.	SE	17	2	19
8.	SSE	29	1	30
9.	S	25	4	29
10.	SSW	40	7	47
11.	SW	29	10	39
12.	WSW	26	4	30
13.	W	11	4	15
14.	WNW	15	4	19
15.	NW	19	3	22
16.	NNW	24	3	27
Sub-Total				439
Calms				1768
Missing/Incomplete				1
Total				**2208**

* 24-hour's rainfall should be reported from 08:30 hrs. IST of previous day to 08:30 hrs. IST of the day.

* Rainy day is considered when 24 hrs. Rainfall is ≥ 2.5 mm.

** Visual observations of cloud cover should be recorded four times a day at regular intervals.

(iii)	Indicate name and distance of the nearest IMD meteorological station from which climatologically data have been obtained for reporting in the EIA report, if any.	:	Kota Airport - 28.693 km, ENE
(b)	Ambient air quality data* (RPM, SPM, SO_2, and NO_x)	:	As under :-

S. No.	Criteria Pollutant	Locations	Arithmetic Mean	Minimum	Maximum	Standard Deviation	98th percentile	CPCB Standards
1	PM_{10}	Mine Site	36.7	18.6	30.9	3.4	42.8	100
		Gudha	44.3	50.2	37.9	3.8	50.0	
		Chainpuriya	33.7	38.4	29.9	2.5	37.7	
		Dhaneshwar	50.7	56.3	42.6	3.6	56.1	
		Tapura Ki Khan	28.9	35.6	21.6	3.2	34.3	
		Dasoliya	26.2	31.5	22.0	2.6	31.4	
		Sutara	25.4	29.6	20.9	2.1	29.0	
2	$PM_{2.5}$	Mine Site	18.6	22.4	15.0	2.1	22.4	60
		Gudha	24.1	28.4	20.1	2.3	28.4	
		Chainpuriya	18.3	20.9	15.6	1.6	20.7	
		Dhaneshwar	27.6	31.0	22.0	2.5	31.0	
		Tapura Ki Khan	15.8	19.6	11.4	2.0	19.0	
		Dasoliya	14.2	17.7	11.9	1.6	17.7	
		Sutara	13.8	15.7	11.6	1.3	15.7	
3	SO_2	Mine Site	5.6	6.4	4.6	0.5	6.4	80
		Gudha	5.0	5.8	4.3	0.4	5.8	
		Chainpuriya	4.7	5.4	4.1	0.4	5.4	
		Dhaneshwar	5.8	6.9	4.6	0.5	6.8	
		Tapura Ki Khan	4.7	5.2	4.1	0.3	5.2	
		Dasoliya	4.5	5.0	4.1	0.3	5.0	
		Sutara	4.6	5.1	4.1	0.3	5.0	
4	NO_x	Mine Site	19.2	23.5	14.5	2.2	23.2	80
		Gudha	16.9	19.9	13.1	1.9	19.7	
		Chainpuriya	14.0	17.3	11.6	1.7	17.1	
		Dhaneshwar	19.7	23.8	14.6	2.0	23.6	
		Tapura Ki Khan	12.5	14.3	10.5	1.1	14.3	
		Dasoliya	12.7	14.6	10.9	1.0	14.4	
		Sutara	12.4	15.9	10.5	1.3	15.4	
5	CO	Mine Site	882.3	1124	468	167.2	1121	2000
		Gudha	945.1	1360	649	187.9	1333	
		Chainpuriya	674.8	942	468	146.7	914.0	
		Dhaneshwar	1242.5	1422	1056	108.7	1421.0	
		Tapura Ki Khan	682.2	965	522	135.9	947.0	
		Dasoliya	685.7	960	536	152.7	953.0	
		Sutara	687.6	845	497	88.7	835.5	

	[*Monitoring should be carried out covering one full season except monsoon – same season as in 23 (a) (i)] [*Frequency of sampling: Sampling to be done twice a week for the entire season 24 hourly for SPM & RPM. For gaseous pollutants 24- hourly data is given irrespective of the sampling period.]		
(i)	Season and period for which monitoring has been carried out.	:	October, November and December' 2015.
(ii)	No. of samples collected at each monitoring station	:	24

(ii) No. of samples collected at each monitoring station | Twice in a week at each location.

Name of monitoring equipment used.			PM_{10}			$PM_{2.5}$			SO_2			NO_x			CO		
			Respirable Dust Collector (APM- 450BL) Fine Particulate Sampler (APM 550)														
Equipment sensitivity			0.40 – 1.5m³/ min ±0.02m³/ min (PM_{10}) 0-3 LPM ± 0.2 LPM (gases) ± 0.03 DGMm³ ($PM_{2.5}$)														
Permissible AAQ standard (CPCB)		I	100 µg/ m³			60 µg/ m³			80 µg/ m³			80 µg/ m³			2000 µg/m³		
		R	100 µg/ m³			60 µg/ m³			80 µg/ m³			80µg/ m³			2000 µg/m³		
		S	100 µg/ m³			60 µg/ m³			80µg/ m³			80 µg/ m³			2000 µg/m³		
Monitoring Location	No. of Samples Drawn	Category* (R, I, S)	Min.	Max.	98% tile	Min.	Max.	98% tile	Min.	Max.	98% tile	Min.	Max.	98% tile	Min.	Max.	98% tile
Mine Site	24	I	18.6	30.9	42.8	15.0	22.4	22.4	4.6	6.4	6.4	14.5	23.5	23.2	468	1124	1121
Gudha	24	R	50.2	37.9	50.0	20.1	28.4	28.4	4.3	5.8	5.8	13.1	19.9	19.7	649	1360	1333
Chainpuriya	24	R	38.4	29.9	37.7	15.6	20.9	20.7	4.1	5.4	5.4	11.6	17.3	17.1	468	942	914.0
Dhaneshwar	24	R	56.3	42.6	56.1	22.0	31.0	31.0	4.6	6.9	6.8	14.6	23.8	23.6	1056	1422	1421.0
Tapura Ki Khan	24	R	35.6	21.6	34.3	11.4	19.6	19.0	4.1	5.2	5.2	10.5	14.3	14.3	522	965	947.0
Dasoliya	24	R	31.5	22.0	31.4	11.9	17.7	17.7	4.1	5.0	5.0	10.9	14.6	14.4	536	960	953.0
Sutara	24	R	29.6	20.9	29.0	11.6	15.7	15.7	4.1	5.1	5.0	10.5	15.9	15.4	497	845	835.5

*R = Residential; I = Industrial; S = Sensitive
**Pb for mineral specific sites only.
Annex a location map indicating location of AAQ stations, their direction and distance with respect to project site.

22. Stack and emission details, if any* Not Applicable

S. No.	Process / unit of operation (e.g. DG Set, Boiler)	Height of stack (m)	Internal top dia. (m)	Flue gas exit velocity (m/sec)	Emission rate (kg/hr)				Heat emission rate from top of stack (K.cal/hr)	Exhaust / Flue gas			
					SPM	SO_2	NO_x	CO		Temp ^0C	Density	Specific Heat	Volumetric flow rate (m^3/hr.)
	Not Applicable												

23	Details of fugitive emissions during mining operations*		Given in Section – IV of the EIA/ EMP report.
24.	Air Quality Impact Prediction (AQIP)*	:	As under:-
(a)	Details of model(s) used for AQIP including grid size, terrain features, and input meteorological data.	:	Model: AERMOD 7.1 Grid Size: 1000 x 1000 Terrain Features: Flat Input Meteorological Data: Enclosed
(b)	Maximum incremental GLC values of pollutants based on prediction exercise.	:	Given in section – IV.

[* Question Number 22, 23 & 24 need not be filled-in for mines having ML area of **25 ha. or less.**]

[**Information on item no. 2 & 3 to be provided in cases with captive power generation of 500 KVA and above]

25. **Water requirement (m^3/ day)**

S. No.	Area	Avg. Demand m^3/day	Peak Demand m^3/day
A.	**Mine Site**		
1.	Mine operation	--	--
2.	Land reclamation	-	-
3.	Dust suppression & workshop	7.0	7.0
4.	Green Belt	10.0	10.0
5.	Drinking water/ Domestic	13.0	13.0
6.	Beneficiation	--	--
7.	Washeries	-	-
8.	Fire Services	-	-
9.	Other (specify)	-	-
B.	**Township**		
1.	Green Belt	-	-
2.	Domestic	-	-
3.	Other (Specify)	-	-
	Total	**30.0**	**30.0**

26. **Source of water supply***

S. No.	Source	m^3/day
1.	River (name)	-
2.	Ground water	13.0 KLD

3.	Mine water (sump/ pit)	--
4.	Other surface water bodies (specify)	-

[*Annex a copy of sanction letter/ permission from the concerned authority (Central Ground Water Authority in case of ground water abstraction is from notified area / State Ground Water Board in case of non-notified area/ State Irrigation Department for surface water pumping) for drawing water.].

27.	Lean season flow in case of pumping from river/ nallah (cumecs)	Not Applicable
28.	Ground water potential of the study area	Not Applicable

28.1. Ground water availability

(a)	Range of water table (m bgl)	:	400 – 405 AMSL
(i)	Pre-monsoon (April/ May)	:	As given below:-
	Core Zone	:	400 AMSL (80m bgl)
	Buffer Zone	:	400 AMSL (80m bgl)
(ii)	Post-Monsoon (November)	:	As given below:-
	Core Zone	:	405 AMSL (75m bgl)
	Buffer Zone	:	405 AMSL (75m bgl)
(b)	Total annual replenishable recharge (million m^3/ year) for core area	:	33,749
	By ground water table fluctuation method.	:	--
	By rainfall infiltration factor method	:	--
	By return flow of irrigation	:	--
(c)	Annual draft excluding estimated draft through mine discharge (million m^3/ year)	:	28,210
(d)	Estimated draft through mine discharge (million m^3/ year)	:	--
(e)	Net annual ground water availability (million m^3/ year)	:	26,027
(f)	Stage of ground water development in % for core area.	:	108

28.2. **Water demand - Competing users of the water source other mines, Irrigation & domestic use.**

S. No.	Usage	Present Consumption (m^3/ day)		Additional proposed as per local plan (m^3/ day)		Total (m^3/ day)	
		Surface	Ground	Surface	Ground	Surface	Ground
1.	Domestic	--	4.0	--	9.0	--	13.0
2.	Irrigation	--	--	--	--	--	--
3.	Industry	--	--	--	--	--	--
4.	Mining	4.0	--	3.0	--	7.0	--
5.	Others (specify) for plantation	7.0	--	3.0	--	10.0	--
	Total	**11.00**	**4.0**	**6.00**	**9.00**	**17.00**	**13.00**

29. **Water quality***

Given in Section – III, Sub – section – 3.5.1.

30. **Impact on ground water regime/ stream/ lake/ springs due to mine dewatering ***

(a)	Radius of influence (in m) [To be estimated based on analysis of pumping test data and application of empirical formula].	:	Localized impact on lease and nearby area only.
(b)	Whether saline water ingress will take place? (Applicable to coastal areas).	:	No
(c)	Impact on stream/ lake/ springs.	:	Nil

[***Provide a comprehensive hydro-geological assessment report** if the average mine dewatering is more than 100 m^3/ day and/ or going below water table in non-monsoon period. The report should be based on preferably latest one year pre-monsoon and post-monsoon baseline data covering information on ground water situation, aquifer characteristics, water level conditions (April – May and November), estimate of ground water resources, predicted impact of the project on ground water regime and detailed remedial/ conservation measures such as artificial recharge of ground water etc. The report should be based on actual field inventory out of existing wells, at least 30 observation wells in the buffer zone with supplementary information from secondary sources (mention name). For estimation** of ground water resource (refer question no. 28 above) be designated study area of the buffer zone may be sub-divided into command and non-command areas, watershed-wise (in case of hard rock / consolidated formations)/ block-wise/ mandal-wise in case of alluvial/ unconsolidated formations)].

[**For estimating ground water resources in the area follow the Ground Water Estimation Committee recommendations of 1997].

31. Waste Water Management

S. No.	Mine		
(a)	Daily average discharge (m^3/ day) from different sources	:	There will be no discharge of waste water from the mine.
(i)	Mine water discharge during	:	--
	Lean Period	:	--
	Monsoon Period	:	--
(ii)	Workshop	:	--
(iii)	Domestic (mine site)	:	9.75 KLD
(iv)	Beneficiation/ Washeries	:	--
(v)	Coal handling plant	:	--
(vi)	Tailings pond	:	--
(vii)	Other (Specify)	:	--
	Total	:	**9.75 KLD**
(b)	Waste water treatment plant; flow sheet for treatment process attached.	:	The waste water generated from the domestic use (9.75 KLD) will be channelized into septic tank followed by soak pit.
(c)	Quantity of water recycled/ reused/ to be recycled in	:	
(i)	Percentage	:	--
(ii)	M^3/ day	:	--
(d)	Point of final discharge	:	

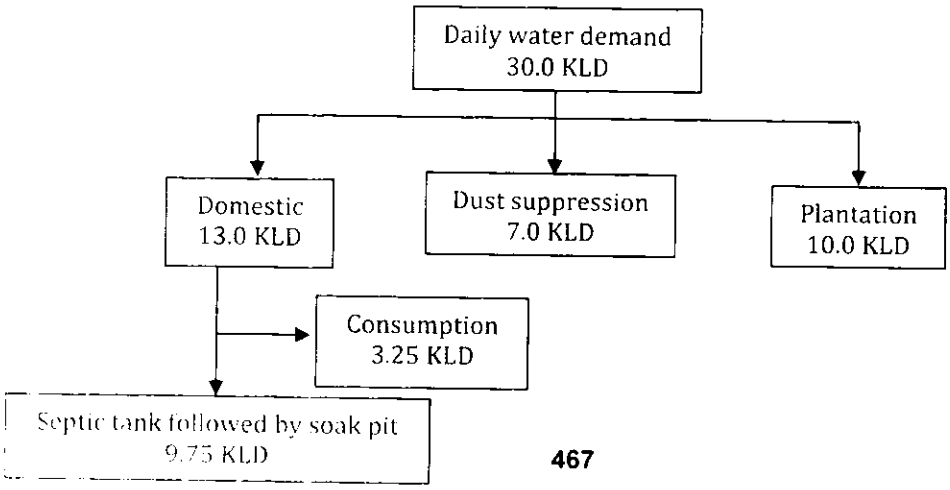
Final Point	Quantity discharged (in m^3/day)
1. Surface (i) Agricultural land (ii) Waste land (iii) Forest land (iv) Green belt	Not applicable --
2. River/ Nallah	--
3. Lake	--
4. Sea	--
5. Others (specify)	--

	Total		--
(e)	Users of discharge water	:	Not applicable as no mine discharge
(i)	Human	:	
(ii)	Livestock	:	
(iii)	Irrigation	:	
(iv)	Industry	:	
(v)	Other (specify)	:	
(f)	Details of the river/ nalla, if final effluent is/ will be discharged (cumecs).	:	Not applicable as no mine discharge
(i)	Average flow rate	:	Not Applicable
(ii)	Lean season flow rate	:	--
(iii)	Aquatic life	:	--
(iv)	Analysis of river water 100 meters upstream and 100 meters downstream of discharge point submitted.		--

Please note: Though the nalla is seasonal & if required the water for U/ stream & D/ stream, please speak for analysis of such, water for its required element. However, since the water is not going to affect mining project if possible try to avoid.

	Township	:	No township is proposed within the lease area.			
(a)	Waste water generation from township (m^3/ day).	:	Yes	--	No	√
(b)	Are you planning to provide sewage treatment plant?	:	Yes	--	No	√
(c)	Usage of treated water.	:	--			

32. **Attach water balance**



33. Ambient noise level leq dB (A)

Given in Section – III, Sub – section – 3.7.1.

34. Solid Waste

(a)	Top soil and Solid waste quantity and quality	:	**S. No.**	**Year**	**M³**
			1.	First Five Year	6.14
			2.	Conceptual phase	13.17

Name (Lump/ fines/ slurry/ Sludge/ others)	**Composition**	**Quantity (Ton/ month)**	**Method of disposal**
Mining activity*			
a. Top Soil	--	362	Used in Plantation
b. Over Burden/ waste		65,327	Backfilling
c. Others (specify)	--	--	--
Effluent Treatment Plant (sludge)	Not Applicable	--	--
Total	--	**65,689**	--

[* Annex layout plan indicating the dump sites]

A layout plan showing proposed waste dump along with other details is enclosed as Conceptual plan.

(b) (i)	Does waste (s) contain any hazardous/ toxic substance/ radioactive materials or heavy metals?	:	No
(ii)	If yes, whether details and precautionary measures provided?	:	Not Applicable
(c)	Recovery and recycling possibilities.	:	NA
(d)	Possible user (s) of the solid waste.	:	Not Applicable
(e)	Is the solid waste suitable for backfilling?	:	Yes
(ii)	If yes, when do you propose to start backfilling?	:	After 5th Year

(In m³)

Solid waste (s)	**Already accumulated (A)**	**To be generated (B)**	**% of A & B to be backfilled**	
			A	**B**
Over burden/ waste	--	4,12,800	--	100
Others (specify)	--	--	--	--

Land reclamation Plan			
(f)	In case waste is to be dumped on the ground, indicate	:	As under:-
(i)	Associated environmental problems	:	Dumps will be stabilized with plantation
(ii)	Number & type of waste dumps	:	9
	No. of external dumps	:	Nil
	Max. projected height of dumps (in m)	:	Projected height of dump – 60m
	No. of terraces and height of each stage	:	5 terraces each of 12m height will be made to accommodate waste/ OB.
	Overall slope of the dump (degree)	:	28°
	Proposed reclamation measures	:	Dumps will be rehabilitated by plantation
(iii)	Section of the waste dump in relation to the adjacent ground profile attached.	:	36.3 ha. area is earmarked for dumping of waste material up to the conceptual phase.

35. **Fuel/ Energy requirements***

[*To be furnished for mines having ML area more than 25 ha. or captive power generation of 500KVA and above]

(a) **Total power requirement** (in MW)

S. No.	Particulars	Mine Site	Township	Others (specify)	Total
1.	Present	450 kVA	--	--	450 kVA
2.	Proposed/ additional	100 kVA	--	--	100 kVA
	Total	**550 kVA**	--	--	**500 kVA**

(b) **Source of power** (in MW)

S. No.	Particulars	SEB/ Grid*	Captive power plant	DG Sets (As back-up source)
1.	Present	Dabi sub-station	--	--
2.	Proposed	--	--	--
	Total	Dabi sub-station	--	--

[* Annex a copy of the sanction letter from the concerned authority]

(c) **Details of fuels**

S. No.	Fuel	Daily Consumption (TPD)		Calorific Value (Kcals/ kg)	% Ash	% Sulphur
		Existing	Proposed			
1.	HSD	350 Lts/ day	200 Lts/ day	10,800	0.021	1.8
2.	LSHS	--	--	--	--	--
3.	Other (specify)	--	--	--	--	--

36. Storage of inflammable/ explosive materials

S. No.	Name	Number of Storages	Consumption (in TPD)	Maximum Quantity at any point of time (in TPD)
1.	Class - 2 & Class - 6	2	2000 kg 500 kg	2000 kg 500 kg

37. Human Settlement

Particulars	Core Zone	Buffer Zone
Population*	Nil	42,074
No. of villages	Nil	25
Number of households village-wise	Nil	8,393

[* As per 2001 census record or actual survey]

38. Rehabilitation & Resettlement (R&R) Plan*

[*Provide a comprehensive rehabilitation plan, if more than 1000 people are likely to be displaced, other-wise a summary plan] **R & R is not required.**

(a) Villages falling within the study area

	Villages	
	Number	Name
Core zone	Nil	
500 m from the blasting site (s)	Nil	
Buffer zone	Enclosed in EIA/ EMP Report - **Chapter – III.**	
Township site	Nil	

(b) Details of village(s) in the core zone

S. No.	Village Name	Population*		Average Annual Income
		Tribal	Others	
	--	--	--	--

[*As per actual survey]

(c) Population to be displaced and/ or Land oustees

Name of village(s) falling within	Number of oustees		
	Land (only)	Homestead (only)	Land and Homestead (both)
Mining Lease 1. None	Not applicable as R & R is not required.		
Township Site 1. None			

(d)	(i)	Whether R & R package has been finalized? If Yes, salient features of R & R plan for oustees.	Not Applicable
	(ii)	Site details where the people are proposed to be resettled & facilities existing/ to be created.	--
	(iii)	Funds earmarked for compensation package.	--
	(iv)	Agency/ Authority responsible for their resettlement.	--
	(v)	Time of commencement of resettlement of Project Affected People (PAP).	--
39.		**Lease -wise plantation details**	

(a)		Lease area (In Ha.) 490.5509 hectare	Existing mine Yes			New mine --
	(i)	Area broken up	119.76			--
	(ii)	To be broken up	135.736			--
	(iii)	Area not to be broken-up	168.1149			--
(b)		Township area (in ha.)	--			--
(c)		Area afforested and proposed (in ha.)	66.94			--
		Particulars	**Peripheral**	**Dumps**	**Roads**	**Township**	**Others**

	(i)	Existing	37.69	--	--	--	--
	(ii)	Proposed	29.25	36.3	Nil	Nil	90.796
(d)		No. and type of trees planted and proposed					
	(i)	Existing					
		When plantation was started?	1955				
	(ii)	Proposed	As under:-				

No. of plants		Number saplings (per Ha.)	
1,94,036		1,000	
Survival Rate %	80%	Avg. height	2-3 m

40.	**Environmental health and safety**		
	(a)	What major health and safety hazards are anticipated?	Nil
	(b)	What provisions have been made/ proposed to be made to conform to health and safety requirements?	➢ Initial and Periodical Medical examination of workers as per Mines Rules 1955. ➢ Provision of PPE's ➢ Provision of First-aid kit. ➢ Provision of drinking water facility. ➢ Provision of conservancy facilities. ➢ Taarbandi/ wall construction on the road connecting Habitation and the mine lease boundary.
	(c)	In case of an existing mine	
	(i)	Comprehensive report on health status of the workers as under the Mines Act annexed.	Enclosed as **Annexure - XXXII.**
	(ii)	Mineralogical composition of RPM (dust)	As under:-
		Free silica	<0.1 µg/m³
		Chromium* (Total as well as Hexavalent)	<0.01 µg/m³
		Lead**	--
	[* Only for Chromite mines] [**Only for Base Metal mines]		--

	(d) Information on radiation protection measures, if applicable.		Not applicable
41.	**Environmental Management Plan**		As under :-
	Salient features of Environmental Protection Measures.		
S. No.	**Environmental issues***	**Already practiced, if applicable.**	**Proposed**
1.	Air pollution	--	Regular water sprinkling, wet drilling and personal protective equipments.
2	Water pollution	--	Garland drains, check dams and settling ponds.
3.	Water conservation	--	General awareness and rain water reservoir in pits.
4.	Noise pollution	--	Preventive maintenance of machines and equipments, use of ear plugs, ear muffs etc.
5.	Solid waste / Tailings	--	Plantation on waste dump.
6.	Land degradation	--	Water reservoir (135.90 ha.).
7.	Erosion & Sediment	--	Garland drain on the lower sides of the dumps to retain wash off, fines.
8.	Top soil	--	Available soil will be stacked separately. It will be spread on the reclaimed dumps.
9.	Ground vibration	--	Controlled blasting with optimum quantity of charge per hole.
10	Wildlife Conservation	--	Not Applicable.
11	Forest protection	--	Not Applicable.
12.	Others (specify) Socio-Economy		CSR activities as per chapter - 6 will be carried out.
	Afforestation	--	Afforestation programme in green belt, dumps will be under taken.

[* As applicable]

42.	**Compliance with environmental safeguards (For existing units).**					
	(a)	Status of the compliance of conditions of Environmental Clearance issued by MoE&F, if any, enclosed.	Not Applicable.			
	(b)	Status of the compliance of 'Consent to Establishment' issued by SPCB, if any, enclosed.	Consent to Operate is enclosed as **Annexure – I.**			
	(c)	Latest 'Environmental Statement' enclosed.	Yes	--	No	√
43.		**Scoping of EIA**				
		Whether environmental impact assessment of the project has been carried out by the scoping process? If Yes, a copy of scoping of EIA annexed.	Yes	√ Enclosed as **Annexure – XXXIII.**	No	--
44.		**Mine Closure**	As under:-			
	(a)	Have you planned mine closure?	Yes			
	(b)	Submitted a conceptual mine closure plan.	Yes, Progressive Mine Closure Plan is submitted.			
	(c)	If Yes, indicate estimated amount for implementing the same (in Rs. Lac)	Not applicable presently as final closure is not planned immediately.			
45.		Capital cost of the project (in Rs. Lac) (Based on latest estimate)	Rs. 8.00 Crores			

4.6 Cost of Environmental Protection Measures Rs. 8.00 Crores

47. Amount earmarked for socio-economic welfare measures for the nearby villages Other than R & R plans.

The CSR will be as per applicability of with The Companies Act, 2013.

#INR Lacs

S. No.	CSR Activities as per the Section VII of the Companies Act 2013	Capital Cost*	Recurring Cost
1.	Adoption of Medical facilities and health checkup facilities in Dhaneshwar, Govt. Hospital 1.306 km ENE. ➢ Requiring Doctors / Nurses/ ANM ➢ Room/ Building Renovation ➢ Green Cover in Centre	7.0	0.50

	➢ Electrical/ Cooler installation ➢ Toilets Renovation and Water Tanks installation ➢ Health Camps ➢ Camp by an Orthopedic doctor for checkup of musculoskeletal movement (for bones, joints, tendons, ligaments, muscles, nerves) ➢ Rain Water Storage structures		
2.	Formation of a Self Help Group of women from the villages Kheda , Dasalya, Dhaneshwar and Sutara for the following. ➢ Sanitation program in Kheda & Dhaneshwar Habitation. ➢ Financial Assistance for the Women Self Help Groups for maintaining Sanitation & cleanliness of the Roads/ Nalas and Public Facilities. ➢ Provision for *Kachra* Collection Carts/ Cleaning Implements/ Drums etc. for the first year.	7.0	0.50
3.	Development activites for School *Ma Bharti Vidhya Niketan Ucch Prathmik Vidhyalya, Dhaneshwar*	1.0	0.638
	Total	**15.0**	**1.638**

Utilization of funds and an adequate CSR activities report duly certified by Chartered Accountant clearly indicating the provision made/ amount spent for EMP/ERP/CSR/safety/ legal obligation is enclosed. A separate undertaking to this effect bounding legally is also enclosed.

48. Public Hearing

S. No.	Particulars	Detail
a.	Date of Advertisement	05.04.2016
b.	Name of newspaper	Rajasthan Patrika & Dainik Bhaskar
c.	Date of public hearing (DD/MM/YYYY)	11.05.2016
d.	Public Hearing Panel chaired by & members present	ADM, Bundi – Sh. Ramjeevan Meena R.O., Kota:- Sh. Amit Sharma
e.	No. of people attended the public hearing meeting and number of people from the lease area.	59
f.	Summary/details of public hearing in tabular form.	Details have been given in Section – VI, Sub-Section – 6.1 of EIA/ EMP report.

49.	S. No.	**Whether the following approvals* (wherever applicable) have been obtained?**				
	(i)	Site Clearance from MoE&F.	Yes	--	No	√
	(ii)	'Consent for Establishment' from the State Pollution Control Board.	Yes	√	No	--
	(iii)	NOC from Atomic Mineral Division.	Not applicable			
	(iv)	Mining Plan approval from IBM / Ministry of Coal.	Yes	√ **Annexure – XII.**	No	--
	(v)	In case of existing mines, Mining Scheme approval from IBM.	SME, Kota vide letter no. 4256 dated 14.10.2015.			
	(vi)	Forestry Clearance under FCA, 1980.	Enclosed as **Annexure – V.**			
	(vii)	NOC from Chief Controller of Explosives.	Enclosed as **Annexure –XV.**			
	(viii)	Commitment regarding availability/ pumping of water from the concerned Authorities.	Not Applicable			
	(ix)	In case of ML area falling in notified areas of the Central Ground Water Authority NOC from them.	Not Applicable (More than 70kms)			

[* Annex copies of approvals and number them]

50. Was/ is there any court case relating to the project or related activities? Yes [--] No [√]
If so, provide details present status.

Verification: The data and information given in this Performa are true to the best of my knowledge and belief.

Date: - 08.05.2017

Place: - Bundi

(S. S. Arora)
Power of Attorney
Sandstone Mine
 # 7-A, Vallabh Nagar, Kota (Raj.)

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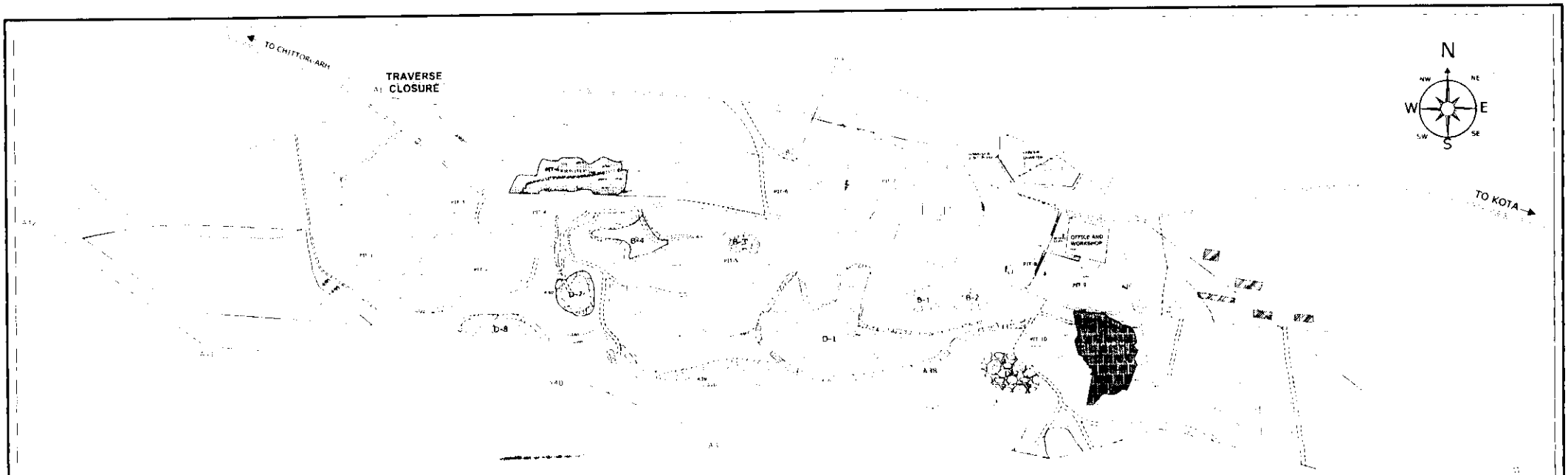


Jawahar Sagar Wildlife
Sanctuary Boundary / Mukundra
Hills Tiger reserve boundary

Surrendered Area (127.7891 Ha.)

PART SURRENDERD AREA 127.7891 HA.

LEGEND

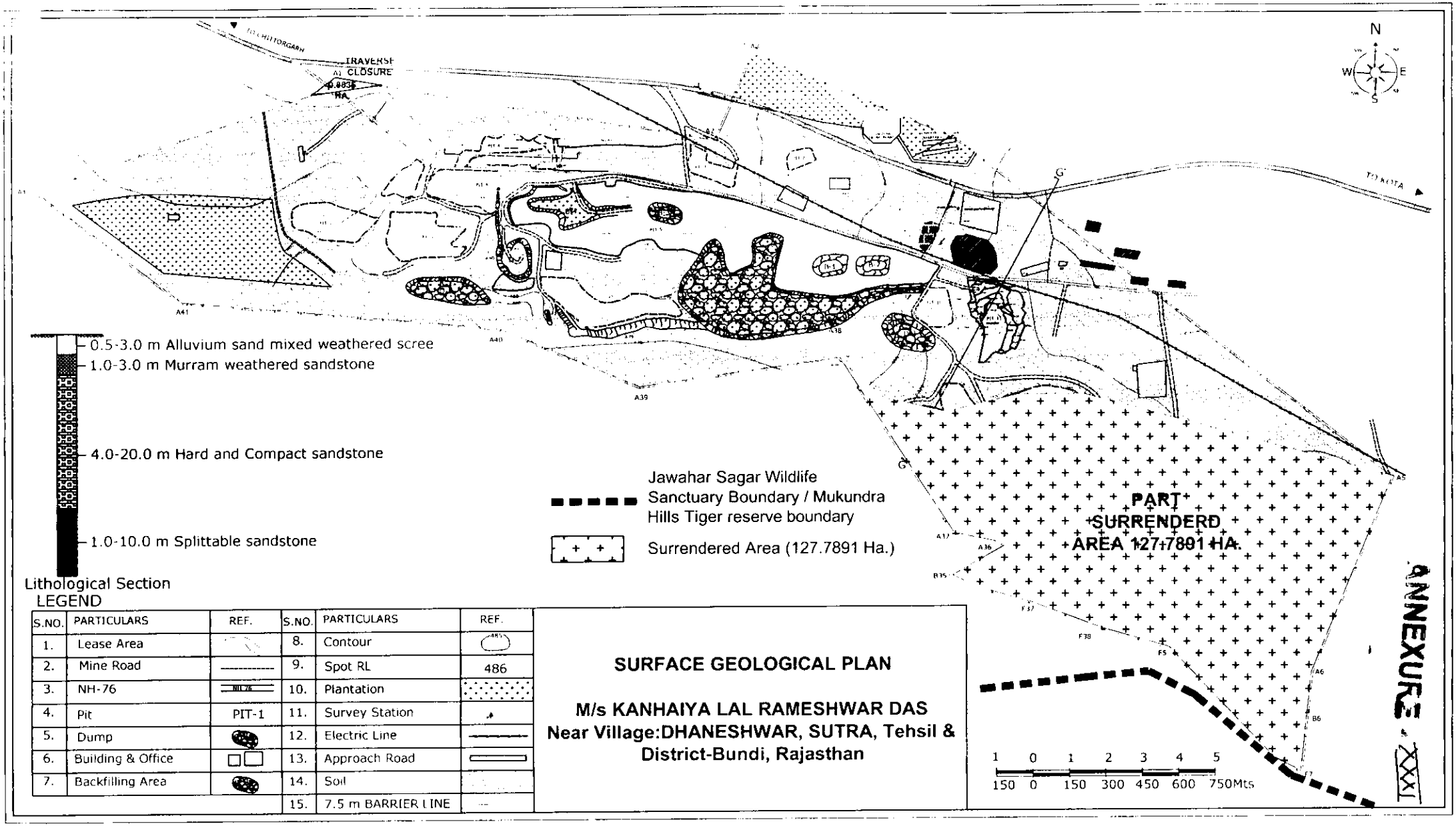
S.NO.	PARTICULARS	REF.	S.NO.	PARTICULARS	REF.
1.	Lease Area		9.	Spot RL	486
2.	Mine Road		10.	Plantation	
3.	NH-76	NH-76	11.	Survey Station	
4.	Pit	PIT-1	12.	Electric Line	
5.	Dump	D-4	13.	Approach Road	
6.	Building & Office		14.	Soil	
7.	Backfilling Area	B-4	15.	Working Pit Bac Wall	
8.	[illegible]		16.	Working Pit [illegible]	

SURFACE PLAN

M/s KANHAIYA LAL RAMESHWAR DAS
Near Village:DHANESHWAR, SUTRA, Tehsil & District-Bundi, Rajasthan

1 0 1 2 3 4 5
150 0 150 300 450 600

ANNEXURE-XXX

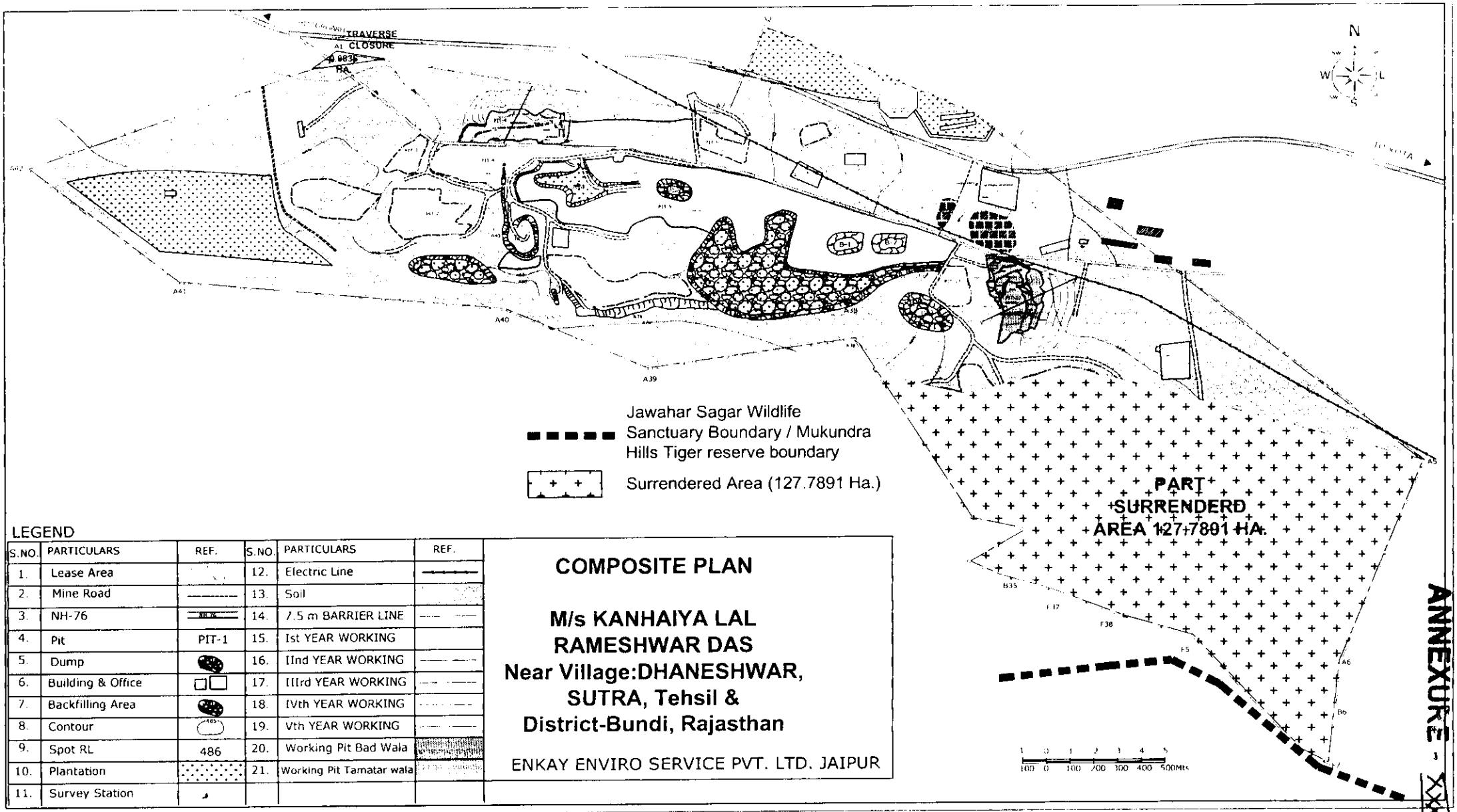


LEGEND

S.NO.	PARTICULARS	REF.	S.NO.	PARTICULARS	REF.
1.	Lease Area		8.	Contour	
2.	Mine Road		9.	Spot RL	486
3.	NH-76	NH-76	10.	Plantation	
4.	Pit	PIT-1	11.	Survey Station	
5.	Dump		12.	Electric Line	
6.	Building & Office		13.	Approach Road	
7.	Backfilling Area		14.	Soil	
			15.	7.5 m BARRIER LINE	

SURFACE GEOLOGICAL PLAN

M/s KANHAIYA LAL RAMESHWAR DAS
Near Village:DHANESHWAR, SUTRA, Tehsil & District-Bundi, Rajasthan



LEGEND

S.NO.	PARTICULARS	REF.	S.NO.	PARTICULARS	REF.
1.	Lease Area		12.	Electric Line	
2.	Mine Road		13.	Soil	
3.	NH-76		14.	7.5 m BARRIER LINE	
4.	Pit	PIT-1	15.	Ist YEAR WORKING	
5.	Dump		16.	IInd YEAR WORKING	
6.	Building & Office		17.	IIIrd YEAR WORKING	
7.	Backfilling Area		18.	IVth YEAR WORKING	
8.	Contour	485	19.	Vth YEAR WORKING	
9.	Spot RL	486	20.	Working Pit Bad Wala	
10.	Plantation		21.	Working Pit Tamatar wala	
11.	Survey Station				

COMPOSITE PLAN

M/s KANHAIYA LAL RAMESHWAR DAS
Near Village:DHANESHWAR, SUTRA, Tehsil & District-Bundi, Rajasthan

ENKAY ENVIRO SERVICE PVT. LTD. JAIPUR

ANNEXURE - XXII

MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पेरा 117 में की गई घोषणा के अनुरूप)

Dt. 13.04.16

1. Name of Labour ..... Javed Khan

S/o D/W/o ..... Habeeb Khan

2. Age ..... 45 yrs

3. Caste ..... muslim

4. Village Dhaneswar ..... 5. District Bundi

6. Minning Lease No. 47/94

7. Name of Mine Owner ..... Kanhiya lal Rameshwar Das

8. Height ..... 5' 6" ..... CM.

9. Weight ..... 56 ..... Kg.

10. Skin ..... No any obvious disease

(Any obvious disease ?)

11. Eyes ..... Rt 6/9 Lt 6/12

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury ..... No any clinical injury seen

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain .....

15. Heart Function BP 130/80 mmHg Pulse Rate 94/min

16. Abdominal Examination Tenderness Hernia No

Palpable Lever No Spleen Normal

Kidneys Normal Other Nil

17. Pregnancy History (If Female) .....

18. Any Mental Disability ..... No

19. Any other disease seen ..... No

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

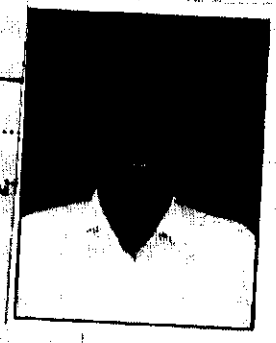
If Yes, Please explain .....

21. Any Medicine Prescribed : Nil

22. Concluding remarks about the health condition of woman labour. .....

Sahyamalyan
चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, जैतारण

Signature of M.O.



ANNEXURE - XXXIII

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MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पैरा 117 में की गई घोषणा के अनुरूप) Dt. 13/1/16

1. Name of Labour Khumsingh

S/o D/W/o madis

2. Age 31 yr

3. Caste Bhoel

4. Village Dhaneshwar 5. District Bundi

6. Minning Lease No. 47/94

7. Name of Mine Owner Kanhaiyalal Rameshwardass

8. Height 5'7" CM.

9. Weight 57 Kg.

10. Skin No any disease

(Any obvious disease ?)

11. Eyes R. 6/6 L. 6/6

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury

NO

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain Chest X-Ray clear

15. Heart Function BP 120/70 Pulse Rate 84/min

16. Abdominal Examination Tenderness Hernia - No

Palpable Lever No Spleen Normal

Kidneys Normal Other —

17. Pregnancy History (If Female)

18. Any Mental Disability No

19. Any other disease seen Not seen

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

If Yes, Please explain

21. Any Medicine Prescribed :

22. Concluding remarks about the health condition of woman labour.

Sadpmeyen

Signature of M.O.

Signature/ Thumb Impression of mine Labour

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MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पेरा 117 में की गई घोषणा के अनुरूप) Dt - 13/04/16

1. Name of Labour Raju

S/o D/W/o motilal

2. Age 35yr

3. Caste Bhil

4. Village Dhanwalwas 5. District Bundi

6. Minning Lease No. 47/94

7. Name of Mine Owner Kanhaiyalal Rameshwardas

8. Height 5'1" CM.

9. Weight 46 Kg.

10. Skin No any obvious disease

(Any obvious disease ?)

11. Eyes Lt. 6/6 Rt 6/6

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury

No

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain

15. Heart Function BP 130/80 mmHg Pulse Rate 94/min

16. Abdominal Examination Tenderness Hernia - No

Palpable Lever NO Spleen Normal

Kidneys Normal Other -

17. Pregnancy History (If Female)

18. Any Mental Disability NU

19. Any other disease seen NO

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

If Yes, Please explain

21. Any Medicine Prescribed :

22. Concluding remarks about the health condition of woman labour.

Satyenarayan
चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, बूंदी

Signature of M.O.

Signature / Thumb Impression of mine Labour

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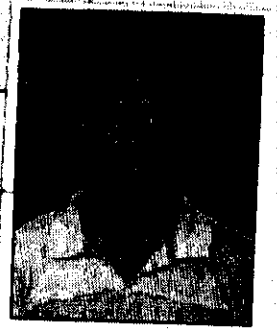
MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पैरा 117 में की गई घोषणा के अनुरूप) Dt 13/04/16



1. Name of Labour Dinesh

S/o D/W/o Mangu

2. Age 28yrs

3. Caste Bheel

4. Village Dhamesma 5. District Bundi

6. Minning Lease No. KGN 47/94

7. Name of Mine Owner Kanhiya lal Rameswar das

8. Height 5'2" CM.

9. Weight 46 Kg.

10. Skin No any disease.

(Any obvious disease ?)

11. Eyes Lt 6/6 Rt 6/6

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury No any

clinical injury seen.

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / ~~No~~

If yes, then Explain

15. Heart Function BP 120/70 mmHg Pulse Rate 80/min

16. Abdominal Examination Tenderness Hernia No

Palpable Lever - No Spleen Normal

Kidneys Normal Other Nil

17. Pregnancy History (If Female)

18. Any Mental Disability NO

19. Any other disease seen No

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / ~~No~~

If Yes, Please explain

21. Any Medicine Prescribed : Nil

22. Concluding remarks about the health condition of woman labour.

Satyanarayan
चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, बारी

Signature of M.O.

Signature/Thumb Impression of mine Labour

दिनेश

MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पेरा 117 में की गई घोषणा के अनुरूप) (dt. 13/04) 16

1. Name of Labour ..... Bhasel

S/o D/W/o ..... Kerma

2. Age 27y

3. Caste ..... Oraon

4. Village ..... Dhamesharwa ..... 5. District ..... Ranchi

6. Minning Lease No. 47/04

7. Name of Mine Owner ..... Kanhaiyalal Rameshwardas

8. Height ..... 5'6" ..... CM.

9. Weight ..... 55 ..... Kg.

10. Skin ..... No any obvious disease

(Any obvious disease ?)

11. Eyes ..... Lt. 6/6 Rt 6/18

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury ..... No

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain .....

15. Heart Function BP 120/70 mmHg Pulse Rate 78/min

16. Abdominal Examination Tenderness Hernia No

Palpable Lever No Spleen Normal

Kidneys Normal Other

17. Pregnancy History (If Female) .....

18. Any Mental Disability ..... No

19. Any other disease seen ..... No

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

If Yes, Please explain .....

21. Any Medicine Prescribed : Nil

22. Concluding remarks about the health condition of woman labour. .....

Sahjmalyan
चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, खोरी

Signature of M.O.

Signature / Thumb Impression of mine Labour

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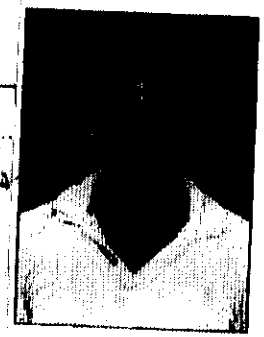
MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पेरा 117 में की गई घोषणा के अनुरूप) Dt. 13/04/16



1. Name of Labour ..... Keelu
S/o D/W/o ..... Hasa
2. Age ..... 29 yr
3. Caste ..... Bheel
4. Village Dhanshuwa ..... 5. District Bundi
6. Minning Lease No. 47/94
7. Name of Mine Owner Kanhaiyalal Ramchandradas
8. Height ..... 5'5" ..... CM.
9. Weight ..... 60 ..... Kg.
10. Skin ..... No any obvious disease
(Any obvious disease ?)
11. Eyes ..... Lt 6/18 Rt 6/9
(Any obvious disease ?)
12. Ears : Inspection
Hearing : Right Ear Normal Left Ear Normal
13. Any Injury ..... No Any
..... Clinical Injury Seen
14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No
If yes, then Explain .....
15. Heart Function BP 130/80 mmHg Pulse Rate 84/m
16. Abdominal Examination Tenderness Hernia NO
Palpable Lever NO Spleen Normal
Kidneys Normal Other
17. Pregnancy History (If Female) .....
18. Any Mental Disability ..... NO
19. Any other disease seen ..... NO
20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No
If Yes, Please explain .....
21. Any Medicine Prescribed :
Nil
22. Concluding remarks about the health condition of woman labour. .....

Satyanarayan
चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, दाबी
Signature of M.O.

Signature/Thumb Impression of mine Labour

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MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पैरा 117 में की गई घोषणा के अनुरूप) Dt. 13/4/16

1. Name of Labour Raju

S/o D/W/o Chunnan

2. Age 32yr

3. Caste Bheel

4. Village Dhanshuwa 5. District Bundi

6. Minning Lease No. 47/94

7. Name of Mine Owner Kanhaiyalal Ramchandrdas

8. Height 5'4" CM.

9. Weight 56 Kg.

10. Skin No any abnormal disease

(Any obvious disease ?)

11. Eyes Lt 6/6 Rt 6/9

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury No

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain

15. Heart Function BP 120/80 mmHg Pulse Rate 74/m

16. Abdominal Examination Tenderness Hernia No

Palpable Lever No Spleen Normal

Kidneys Normal Other Nil

17. Pregnancy History (If Female)

18. Any Mental Disability NO

19. Any other disease seen No

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

If Yes, Please explain

21. Any Medicine Prescribed : Nil

22. Concluding remarks about the health condition of woman labour.

S. Jyotsnaiyer

चिकित्सा अधिकारी
प्राथमिक स्वास्थ्य केन्द्र, अर्बी

Signature of M.O.

Signature/ Thumb Impression of mine Labour

राजु

MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पेरा 117 में की गई घोषणा के अनुरूप)

Dt. 13.4.16

1. Name of Labour ..... Kalu

S/o D/W/o ..... Javan singh

2. Age ..... 22 y

3. Caste ..... Bheel

4. Village ..... Dhanesura 5. District ..... Bundi

6. Minning Lease No. 47/94

7. Name of Mine Owner ..... Kanhiyal lal Ramesh Chand

8. Height ..... 5' 5" ..... CM.

9. Weight ..... 52 ..... Kg.

10. Skin ..... No any disease

(Any obvious disease ?)

11. Eyes ..... Lt 6/6 Rt 6/9

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury ..... No

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain .....

15. Heart Function BP 120/70 mm Pulse Rate 86/min

16. Abdominal Examination Tenderness Hernia No

Palpable Lever - No Spleen - Normal

Kidneys Normal Other

17. Pregnancy History (If Female) .....

18. Any Mental Disability ..... No

19. Any other disease seen ..... No

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

If Yes, Please explain .....

21. Any Medicine Prescribed : Nil

22. Concluding remarks about the health condition of woman labour. .....

Satyanarayan

चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, बारी

Signature of M.O.

Signature / Thumb Impression of mine Labour

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MEDICAL CHECK-UP CARD

(माननीया मुख्यमंत्री के बजट भाषण वर्ष 06-07 के पेरा 117 में की गई घोषणा के अनुरूप) Dt. 13/04/16

1. Name of Labour Dinesh

S/o D/W/o mangu

2. Age 28 yrs

3. Caste Bheel

4. Village Dhamsura 5. District Banati

6. Minning Lease No. KGN 47/94

7. Name of Mine Owner Kanhiya lal Rameswar das

8. Height 5'2" CM.

9. Weight 46 Kg.

10. Skin No any discomfort

(Any obvious disease ?)

11. Eyes Lt 6/6 Rt 6/6

(Any obvious disease ?)

12. Ears : Inspection

Hearing : Right Ear Normal Left Ear Normal

13. Any Injury No any clinical injury seen.

14. Respiratory System (Does physical Eximination reveals any thing abnormal in the respiratory organs?) Yes / No

If yes, then Explain

15. Heart Function BP 120/70 mmHg Pulse Rate 80/min

16. Abdominal Examination Tenderness Hernia No

Palpable Lever - No Spleen Normal

Kidneys Normal Other Nil

17. Pregnancy History (If Female)

18. Any Mental Disability NO

19. Any other disease seen No

20. Do the patient need any Clinical/Radiological or other investigations ? Yes / No

If Yes, Please explain

21. Any Medicine Prescribed : Nil

22. Concluding remarks about the health condition of woman labour.

Satyanarayan
चिकित्सा अधिकारी
सामुदायिक स्वास्थ्य केन्द्र, डाबी
Signature of M.O.

Signature/Thumb Impression of mine Labour
दिनेश

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SCOPING

INTRODUCTION

The purpose of Environmental Impact Assessment (EIA) was to identify and evaluate the potential impacts (beneficial and adverse) of existing project on the environmental system. It is a useful aid for decision making based on understanding of the environmental implications including social, cultural and aesthetic concerns, which is integrated with the analysis of the project benefits.

OBJECTIVE OF THE STUDY

a. To assess the prevailing environmental scenario within a radius of 10km from the periphery of mine.
b. Assessment of present status of different environmental components in a radius of 10 km with mine as centre.
c. Determination of baseline conditions.
d. Evaluation of the existing pollution control facilities.
e. Evaluation of impact on various environmental factors on account of mining operations.
f. Preparation of Environmental Management Plan (EMP) outlining measures to be adopted for mitigation of adverse impact due to operation of mine.

BASELINE DATA COLLECTION/ GENERATION

Work to be covered under each environmental component monitoring was done in order to satisfy the requirement of MoEF& CC and Central State Control Board.

AIR ENVIRONMENT

Collection of meteorological data (wind velocity, wind direction, temperature, humidity, rainfall and cloud cover) in the study area at one station on eight hourly basis for one season during the study period.

WATER QUALITY

Monitoring of water quality in the study area was done as per the requirement of CPCB guidelines

NOISE MONITORING

Monitoring of noise level at work places and nearby residential areas was done as per norms of MoE&F.

SOIL MONITORING

Soil characterization study in the mine area was conducted once in month.

LAND ENVIRONMENT

Land use and cropping pattern in the study area of 10 km from the mine area. Present land use pattern of the mine area was also studied.

THE BASELINE DATA GENERATION WAS AS FOLLOWS:

Ambient Air Quality Survey

A. Location of Station :-

(i) At quarry edge at the point of maximum dust concentration.

(ii) Near mine haulage road in vicinity of (a) human settlements, (b) public places, (c) forest patches, and (d) cultivated land.

(iii) Nearby village/ human settlements around the quarry in predominant wind directions.

B. No. of samples per day: 07samples per day.

Duration of sampling in hours: 08 hours per samples.

METEOROLOGICAL DATA

A wind rose diagram was prepared at a station located nearest to the center of the mine.

The following were recorded for one season i.e. October, November and December' 2015.

WATER QUALITY SURVEY

A. Location of sampling points

(i) At the discharge point into natural water courses (if any) for inland water bodies.

(a) Mine of quarry water.

B. No. of samples to be collected per station in a season: - Three spot samples in a season at the rate of one sample each on three different days plus one composite sample.

C. Parameters were tested

The parameters tested were based upon IS: 10500

WATER QUALITY

A. Location of sampling points.

Quality of water drawn for mining and processing operations.

SOIL QUALITY SURVEY

A. Parameters to be tested :-

Soil was analyzed and tested for suitability for reclamation purpose. The following soil characteristics were covered.

- Water holding capacity.
- pH and conductivity.
- Organic matter.
- Free Ammonical Nitrogen.
- Potassium
- Phosphorus

NOISE LEVEL SURVEY

A. Location of Stations :-

(i) Near any equipment installation.

B. Standard and measurements: DGMS circular no. 18 (tech) 1957 and no. 5 (tech) of 1990 dB(A) and max. Exposure in hrs. per day.

C. Seasons covered : Post-Monsoon

D. No. of readings: One reading per station or measurement point.

ASSESSMENT OF EXISTING ENVIRONMENTAL STATUS FOR:

- Flora and fauna and identification of endangered species.
- Transport and communication pattern.
- Population and socio-economic pattern.
- Public health and medical facilities.
- Educational facilities.
- Occupational facilities.
- Existing infrastructural facilities.

ENVIRONMENTAL IMPACT ASSESSMENT

A. Study of the pollution control equipment provided for controlling dust emission solid waste disposal, noise pollution and all the other environmental effects due to mine.

B. Studies of the proposed/ existing mine plans and other details pertaining to the mining areas.

C. Evaluation of the impact on environmental with regard to :

- Land topography and land use
- Flora and fauna

- Waste rock disposal
- Water, air, noise pollution
- Socio-economic, cultural, religious and aesthetic factors.
- Impact on sensitive targets such as historically important sites.
- Impact on hydrographic system and surface drainage

D. Identification of waste water treatment requirements, if any.

E. Assessment of ground water quality from available wells and lowering of ground water table.

ENVIRONMENTAL MANAGEMENT PLAN

Preparation of Environmental Management Plan of mine for submission of MoE&F:-

A. EMP will suggest measures and recommendations for pollution control.

B. Preparation of mine reclamation plans and schedule of reclamation activities. Sequence of overburden waste rocks (based on mining plan).

C. Dump yard management plan including measures for stability of dump.

D. General scheme for soil management.

E. Scheme of control of surface through drains and mine water drainage through suitable impounding basins.

F. General indication of equipment of reclamation equipment.

G. Afforestation scheme including suggestion for soil amendments.

H. Recommendation for reducing impacts due to dust and noise.

I. Organization and methods for environmental management.

****

S. No.	Consultant Organization	Scope of Accreditation As per NABET Scheme: Sector Number	Name of Sector	Category	Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
			products), passing through national parks/ sanctuaries/coral reefs /ecologically sensitive Areas including LNG terminal		
		28	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of Schedule 2& 3 of MSIHC Rules 1989 amended 2000)	B	6 (b)
		29	Air ports	A	7 (a)
		32	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	A	7 (d)
		33	Ports, harbours, break waters and dredging	A	7 (e)
		39	Townships and Area development projects	B	8 (b)
42	**Enkay Enviro Services Pvt. Ltd.** (formerly known as Enkay Enviro Services) **Address:** # 24-B, Dadu Marg, Gopal Bari, Jaipur – 302001	1	Mining of minerals - Open cast only	A	1 (a) (i)
			Mining of minerals - Underground mining	B	
		3	Irrigation and drainage projects only	A	1 (c)
		4	Thermal power plants	B	1 (d)
		7	Mineral beneficiation	A	2 (b)
		8	Metallurgical industries (ferrous &	A	3 (a)

ANNEXURE -

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S. No.	Consultant Organization	Scope of Accreditation As per NABET Scheme			Project or Activity as per Schedule of MoEFCC Notification dated September 14, 2006 and subsequent Amendments
		Sector Number	Name of Sector	Category	
	e.mail: info@enkayenviro.com Tel.: 0141 – 4023996 09314363996 *Conditions apply*		nonferrous) – both primary and secondary		
		9	Cement Plants	B	3 (b)
		12	Asbestos milling and asbestos based products	A	4 (c)
		16	Chemical Fertilizers	A	5 (a)
		21	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	A	5 (f)
		28	Isol Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of Schedule 2 & 3 of MSIHC Rules 1989 amended 2000)ated storage & handling of hazardous chemicals	B	6 (b)
43	**Enpro Envirotech & Engineers Pvt. Ltd.** **Address:** 306, Royal Park, Near Deepa Complex,	8	Metallurgical Industries (ferrous & nonferrous)	A	3(a)

Registered Office

24-B, Dadu Marg, Gopal Bari, Jaipur-302001

92 Heera Nagar - A, Near Shalimar Bagh,

Ajmer Road, Jaipur – 302021

Ph: 0141-2354997, 2353996

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Website: www.enkayenviro.com

Let us join hands to save Earth