EXECUTIVE SUMMARY

(In English & Hindi)
Of
Draft EIA/EMP Report
For
Limestone Mine of

Name	M/s. Sadguru Minerals Partner Dilbag Singh Chabda	M/s. Sadguru Minerals Partner Dilbag Singh Chabda
Area	1.35 hect.	1.893 hect.
Khasra No.	639 samil 644, 645 and 646	635/1, 635/3, 635/4 and 635/5
Applied Capacity	21903.44 TPY	29604.38 TPY
Village	Akaltara	Akaltara
District	Janjgir-Champa	Janjgir-Champa

(Submitted for Public Consultation as per EIA Notification 2006 & its subsequent amendments till dated)

For
Mining Lease Cluster Area : 14.568 Ha.
Project Cost: Rs. 155.5 LAKH
Category-B1

In Favor of	Prepared By
M/s Satguru Minerals Village – AKaltara Tehsil : Akalatara & District – Jangir-Champa (Chhattisgarh)	M/S. Aseries Envirotek India Pvt. Ltd (QCI/NABET Accredited Consultant), B-107, B Block, Sector 6, Noida, Uttar Pradesh 201301 E – mail : geocon.rpr@gmail.com Contact - 9300672000

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1 EXECUTIVE SUMMARY

1.1 Introduction and Background

Proposed Limestone Mining Project of M/s Satguru Minerals in Akaltara Limestone mining Cluster is situated near village Akaltara, Tehsil: Aklatara, District – Jangir-Champa (Chhattisgarh) over an area of 3.243 ha in Khasra No. 635/1, 635/3, 635/4, 635/5 and 639 samil 644, 645, 646.

Letter of intent issued to M/s. Satguru Minerals **for 1.35 Ha.,** vide letter number 3910 / Kha. Li. / E-Nivida/ Na.Kra./2019 Janjgir dated 13/03/2019 validity of the same was extended vide DGM letter number 9098/ khani 02/U.P. Anu.Nispa/Na.kra. 50/2017 Nawa Raipur Atal Nagar Dated 07/11/2019. Further appealed before Directorate of Geology & Mining, Raipur Chhattisgarh through Mining Office-Janjgir Champa for extension of validity of LOI which was accepted and LOI validity period is extended till compliance of terms of LOI vide order number 176/Khani-2/N.K. 14/2020 dated 11/01/2022. Copy of LOI and extension orders enclosed in ***Annexure-1.***

Letter of intent issued to M/s. Satguru Minerals for **(1.893 Ha.)** vides letter number 3906 / Kha. Li. / E-Nivida/ na.Kra./2019 Janjgir dated 13/03/2019 validity of the same was extended vide DGM order number 9096/ khani 02/U.P. Anu.Nispa/Na.kra. 50/2017 Nawa Raipur Atal Nagar Dated 07/11/2019. Further appealed before Directorate of Geology & Mining, Raipur Chhattisgarh through Mining Office-Janjgir Champa for extension of validity of LOI which was accepted and LOI validity period is extended till compliance of terms of LOI vide order number 174/Khani-2/N.K. 14/2020 dated 11/01/2022. Copy of LOI and extension orders enclosed in ***Annexure-1.***

Mine plan of **M/s Satguru Minerals (Partner: Dilbagh Singh Chhabra) (1.35 Ha.)** has been approved with vide letter number 6023/Khali 6 / U.Yo.a./2016 Korba dated 06/09/2019 from Dy. Director Korba.

Mine plan of M/s Satguru Minerals **(Partner: Dilbagh Singh Chhabra) (1.893 Ha.)** has been approved with vide letter number 6027/Khali6/U.Yo.a./2016 Korba dated 06/09/2019 from Dy. Director Korba. On application for environment clearance before MOEF SEIAA CG case was taken by MOEF SEAC CG. ***Annexure-2.***

As per recommendation of additional ToR by S.E.A.A.C, mine Plan for both of the case are revised and approved vide letter number 5181/Khali/ U.Yo.A./2021 Korba dated 16/12/2021 and 5185/Khali/ U.Yo.A./2021 Korba dated 16/12/2021 from Dy. Director Korba. ***Annexure-3.***

The proposed production is **51,507.82 TPA** (ROM) **{** (21,903.44TPA (1.35Ha.) + 29,604.38TPA (1.893ha) **}**.The estimated cost of project will be Rs. **155.5 lakhs** {68.25Lac (1.35Ha.) & 87.25Lac (1.893Ha.)}

Details of mines, reserve and annual capacity and others are as under –

Name	**M/s. Sadguru Minerals Partner Dilbag Singh Chabda**	**M/s. Sadguru Minerals Partner Dilbag Singh Chabda**	**Total**
Reference of TOR	1661/SEACCG/Mine/JA.CHA./955 dated 05/02/2020	1658/SEACCG/Mine/JA.CHA./955 dated 05/02/2020	-
Area	1.35 hect.	1.893 hect.	3.243 hect
Khasra No.	639 samil 644, 645 and 646	635/1, 635/3, 635/4, and 635/5	635/1, 635/3, 635/4, 635/5 and 639 samil 644, 645, 646
Applied Capacity	21903.44 TPY	29604.38 TPY	51507.82 TPY
Village	Akaltara	Akaltara	Akaltara
District	Janjgir-Champa	Janjgir-Champa	Janjgir-Champa
LOI	Letter number 3910 / Kha. Li. / E-Nivida/ Na. Kra. / 2019 Janjgir dated 13/03/2019 1st extension letter no - 9098/ khani 02/U.P. Anu. Nispa/ Na.kra. 50/2017 Nawa Raipur Atal Nagar Dated 07/11/2019. 2nd extension by order number 176/Khani-2/N.K. 14/2020 dated 11/01/2022.	Letter number 3906 / Kha. Li. / E-Nivida/ na.Kra ./2019 Janjgir dated 13/03/2019 1st extension letter no. - 9096/ khani 02/U.P. Anu. Nispa/ Na.kra. 50/2017 Nawa Raipur Atal Nagar Dated 07/11/2019. 2nd extension by order number 174/Khani-2/N.K. 14/2020 dated 11/01/2022. Copy of LOI	-
NOC by Nagar Palika Parishad	1682/Rajasva/N.PA.PA./2019 dated 06/11/2019	1681/Rajasva/N.PA.PA./2019 dated 06/11/2019	-
NOC by Forest Office	TAK/ADHI/10102 dated 15/11/2019	TAK/ADHI/10101 dated 15/11/2019	-
Approval of revised Mine	Letter No. - 5181/Khali/ U.Yo.A./2021 Korba dated	Letter No. - 5185/Khali/ U.Yo.A./2021 Korba	-

Plan	16/12/2021	dated 16/12/2021	
Geological Reserve	4,55,000 MT	5,87,562.50 MT	10,42,562.50 MT
Recoverable Reserve	1,56,802 MT	2,63,580.80 MT	4,20,382.80 MT
Maximum Annual Mining Capacity	21,903.44 TPY	29,604.38 TPY	51,507.82 TPY
Cluster Area	14.568 hect	14.568 hect	14.568 hect
Cost of Project	68.25 lac	87.25 lac	155.50 lac

The EIA study report has been based upon the following :-

- Field data collection on different aspects of environment including air, soil, water, land, meteorology, noise, flora, fauna, agriculture and socio-economy in the study area of 10 km radius with mine as its center.
- Study of opencast mining methodology, water requirement, source of pollutants and pollution control strategy.
- Ecological Prospective and Green Belt Development.

The EIA study evaluates the impact on the present environmental scenario and check out the environmental management plan incorporating further step to mitigate the adverse impacts of air, noise, water, land pollution on environment.

1.2 Location and Communication

Table 1-1: Location and Communication from ML area

S. No.	Area	Name	Aerial Distance in Km and Direction from M.L area	
			Core Zone	**Buffer Zone**
1.	National Parks/ Wildlife Sanctuaries	-	Nil	Nil
2	Biosphere Reserves/ Tiger Reserves/ Elephant Reserves and any other reserves	-	Nil	Nil

S. No.	Area	Name	Aerial Distance in Km and Direction from M.L area	
			Core Zone	**Buffer Zone**
3.	Forest (PF/RF/Unclassified)	Forest	3 km	Nil
4	Habitat for migratory birds	-	Nil	Nil
5	Corridor for animals of Schedule I and II of the wildlife (Protection Act 1972)	-	Nil	Nil
6	Archaeological Site (notified, Other)	-	Nil	Nil
7	Defense Installation	-	Nil	Nil
8	Industries / Thermal Power Plant	-	Nil	Nil
9	Other Mines	-	Nil	Nil
10	Airport	-	Nil	Nil
11	Railway Lines	-	Nil	Bilaspur - Champa railway line at 340m towards north. **(1.35Ha.)** Bilaspur -Champa railway line at 230 m towards north (**1.893Ha.)**
12	National Highways/ State Highway	-	Nil	NH 200 at 3.75 km towards south- (Janjgir -Tarod - Bilaspur road) from mine site & State Highway at 30 km. towards east. **(1.35Ha.)** NH 200 at 3.80 km towards south (Janjgir -Tarod-Bilaspur road) & State highway

S. No.	Area	Name	Aerial Distance in Km and Direction from M.L area	
			Core Zone	Buffer Zone
				30.20 km. towards east (**1.893Ha.).**
13	Human Habitations	-	Adhiyaripath	Adhiyaripath ~ 450m **(1.35Ha.)** Adhiyaripath ~ 500m (**1.893Ha.).**

1.3 Project Chronology till Date

1. The details of online file for the project proposal namely Form-1 (as per the EIA Notification 2006, as amended till date) along with a Pre-feasibility Report, Approved Mining plan and proposed Terms of References (ToR) for carrying out environmental studies to the State Environment Impact Assessment Authority Chhattisgarh for the mine lease are as follows:

Sr.No	Lessee	Date of submission
1	**M/s Satguru Minerals (1.35 Ha.)**	**11/09/2019**
2	**M/s Satguru Minerals (1.893 Ha.)**	**11/09/2019**

2. Details regarding First technical presentation made are as given below:

Sr.No	Lessee	No. of SEAC meeting	Date of Presentation
1	**(M/s Satguru Minerals (1.35 Ha.)**	303th	11/12/2019
2	**Dilbagh Singh Chhabra M/s Satguru Minerals (1.893 Ha.)**	303th	11/12/2019

3. The details of TOR granted are as follows:

Sr.No	Lessee	TOR Letter No	Date
1	**Dilbagh Singh Chhabra M/s Satguru Minerals (1.35 Ha.)**	1661/SEACCG/Mine/JA. Cha./954 Nawa Raipur Atal nagar	05/02/2020
2	**Dilbagh Singh Chhabra M/s Satguru Minerals (1.893 Ha.)**	1658/SEACCG/Mine/JA. Cha./955 NawaRaipur Atalnagar	05/02/2020

1.4 Project Description

1.4.1 Study Area at a Glance

The study area is taken in accordance with the provisions of sector specific EIA guidance manual for Mining of Minerals manual, published by Ministry of Environment and Forests, during 2010. The study area for the Soapstone Mining Project was as follows:

- The proposed project area (M. L. area) is considered as 'Core Zone'.
- 10 km radius from the boundary limits of the M.L. area is considered as 'Buffer Zone'.

1.4.2 Utilities

Table 1-2: Break-up of Water requirement

Sr. No.	Usage	Water Requirement				Total
		M/s Satguru Minerals (1.35ha.)		M/s Satguru Minerals (1.893ha.)		
1.	Domestic Purpose @25 lpd/worker	17 workers x 25 lit per day = 425 Lit/Day	0.43 KLD	20 workers x 25 lit/day = 500 lit/day	0.50 KLD	0.93 KLD
2.	Dust Suppression @ 0.5 L/Sqm (twice a day)	Haul road Area = (500 m Length x 5 m width = 2500 sqm.) x 0.5 li/sqm = 1250 lit /day x 2 time = 2500 lit/day	2.5 KLD	Haul road Area = (750 m length x 5 m width = 3750 sqm.) x 0.5 li/sqm = 1875 lit/day x 2time = 3750 lit/day	3.75 KLD	6.25 KLD
3.	Greenbelt Development@ 2.5 L/tree	828 Trees X 2.5Lit/day=2070 Lit/day	2.07 KLD	762 trees x 2.5 lit/day = 1905 lit/day	1.91 KLD	3.98 KLD
		Total ::	**5.00 KLD**		**6.16 KLD**	**11.16 KLD**

1.4.3 Topography and Drainage

The topography of the area is Flat land. The stone is buried under the soil in the entire lease area. The general slope is towards west. Altitude of the applied area is 274 to 276 m AMSL. Granted area is devoid of any vegetation. The climate of the area is sub-tropical with hot summer.

M/s Satguru Minerals (1.35Ha.)	M/s Satguru Minerals (1.893Ha.)
At present there is no water source, which is passing through the lease area and its surrounding except, Lilagar River at 7.85 km towards west, Seasonal nalla at 650 m towards north, Village Pond At 785 m towards south-east, Canal 2.60 km towards east, Reservoir at 4.20 km towards north-west. Proper care will be taken at the time of mining.	At present there is no water source, which is passing through the lease area and its surrounding except, Lilagar River at 8.00 km towards west, Seasonal nalla at 1.15 km towards north-west, Village Pond At 760 m towards south-east, Canal 2.50 km towards east, Reservoir at 4.30 km towards north-west. Proper care will be taken at the time of mining.

There is no potential of acid mine drainage and water is potable.

1.4.4 Regional Geology

Janjgir-Champa District is situated in the central part of Chhattisgarh State. It fall in Survey of India's Degree sheet nos. 64K, 64O & 64J between latitudes 21°39'54" to 22°18'05" and longitudes 82°15'55" to 83°22'17". The district is bound by Raigarh District in east and south east, Bilaspur District in west, Korba District in North, and Raipur District in south. Janjgir the district headquater is situated in the west central part of the district. Champa, Pamgarh, Baloda, Bamnidhi, Dabra, Seorinarayan and Sakti are some of important towns of the dirtrict.

1.4.5 Estimated mineral reserve /resources

Reserve	M/s Satguru Minerals (1.35 Ha.)	M/s Satguru Minerals (1.893Ha.)	Total
1)GEOLOGICAL RESERVES	4,55,000 MT	5,87,562.50 MT	**1,04,256.25MT**
i) Reserve Blocked under boundary	1,81,125 MT	1,66,862.50 MT	**3,47,987.5MT**
ii) Reserves Blocked undermine benches	98,123 MT	1,51,740.00 MT	**2,49,863.0 MT**
iii) Reserves Blocked under other blockages	15,750 MT	-	**15,750 MT**
2) **MINEABLE RESERVES (1 - i - ii -iii)**	1,60,003 MT	2,68,960.00 MT	**4,28,963.0MT**
iv) Mine Loss	3,200 MT	5, 379.20 MT	**8,579.2MT**
RECOVERABLE RESERVES OF LIMESTONE (2 - iv)	1,56,802 MT	2,63,580.80 MT	**4,20,382.8MT**
TOP SOIL TO BE GENERATED	2,950 m3	4,808.00 m3	7,758 m3

1.5 Life of Mine

Table : **Life of Mine**

		M/s Satguru Minerals (1.35 Ha.)	M/s Satguru Minerals (1.893Ha.)
A)	Estimated Recoverable Reserves	62720.98 cum or 156802.45	105432.32 cum or 263580.80 tons
B)	Average rate of production per year during Five year plan	6580.11 cum or 16450.28 tons	10480.12 cum. Or 26200.3 tons
C)	Expected rate of production after five year plan	5758.28 cum. Or 14395.71 tons	10067.15 cum. Or 25167.87 tons

D)	Sanctioned Granted period	30 year from the date of lease agreement	30 year from the date of lease agreement
E)	Plan period	10 years	10 years
F)	Thus anticipated period for excavation of reserve	About 11 years. (Up to 18 m of mine depth from surface level)	About 11 years. (Up to 18 m of mine depth from surface level)

Plan of mining is drafted for excavation of Limestone till 18 m of depth from surface level. Therefore after reaching 18 m of depth in the mine or any time during the balance lease period, there would be minerals available as per investigation of district mining authorities and there is possibility of further exploration of mineral feasibly, therefore, permission of further excavation of stone might be given as decided by respective authorities along with due compliance as then applicable.

1.5.1 Mining Method

- The mining operation was carried out by semi mechanized open cast mining method in very small scale.
- Low level intensity scientific and controlled blasting is proposed to be carried out for production of Limestone.
- The present bench height is 3 meters and faces slope 45 ° angles.
- The ultimate pit depth will be 18 m.
- Mining operation will be carried out in single day shift from 8am to 5pm with 1 hour lunch break.
- Year-wise proposed production for the ensuring 10 years of modified mining plans are as follows:

Details of proposed Production of Akaltara Limestone mine cluster

Year	**Production (in Tonnes)**	
	M/s Satguru Minerals (1.35Ha.)	**M/s Satguru Minerals (1.893Ha.)**
1st	14,234.00	25,480.00
2nd	21,903.44	29,604.38
3rd	15,435.00	25,496.00
4th	15,068.00	25,358.00
5th	15,611.00	25,064.00
6th	14,112.00	25,137.00
7th	14,898.00	25,005.00
8th	13,936.00	25,137.00
9th	14,774.00	25,218.00
10th	14,259.00	25,343.00

Total	**1,54,230.44**	**2,56,842.38**
Total	**4,11,072.82**	

Table: List of Machinery Proposed

Sr.No.	Name of Machine	Number	
		M/s Satguru Minerals	M/s Satguru Minerals
1.	Tractors	1	1
2.	Water Tanker with water sprinkler	1	1
3.	Dewatering pumps	1	1
4.	Rock breaker	1	1
5.	Jack Hammer	1	1
6.	Compressure	1	1

1.6 Meteorology Long Term Meteorology (Secondary Data)

Information presented in subsequent paragraphs is from the nearest Indian Meteorological Department (IMD), Long Term Climatological Tables, 1971-2000, Champa these tables give use full information about a region's weather, since it was collected over a period of 30 years.

1.6.1 Temperature

The annual temperature of the district varies between 8^0C and 46^0C .The maximum temperature is observed in the month of May and June where as the minimum is observed in the months of December and January.

1.6.2 Wind

Long- term wind direction data is presented in ***Table 3-7,*** and indicates that the predominant wind during the study period (1^{st} Oct to 31^{st} Dec)-2020 is N and second predominant wind direction is NW.

1.6.3 Rainfall

As per IMD station at Champa, Champa is endowed with high rainfall. Areas of chronic shortfall are few and localized. The rainfall is typically late in coming, very heavy when it comes, concentrated in a few days and early in termination. The district receives its rainfall mainly from the south-west monsoon which usually sets in the third/fourth week of June and spread over a period from mid June to mid September with heaviest shower in the months of July and August. The average rainfall in the district is 1164 mm in the year 1994 to 2012.

1.6.4 Relative Humidity

The atmospheric humidity is usually low during summer months around 46%. However humidity slowly starts building up from third week of May and it reaches maximum around 67% during monsoon period. The humidity again decreases in winter season and it varies between 42 to 80% during winter season.

1.6.5 Site Specific Meteorology

Environmental monitoring was carried out for Winter Season covering the months of (1st Oct . 2020 to 31st Dec 2020. Meteorological data is collected for wind speed, wind direction, temperature, rainfall and cloud cover.

Meteorological data showed that the average wind speed during the study period was observed to be 10.16 m/sec. It was observed that during study period wind blows pre dominantly from N and Second pre dominant direction is NW. Existing Environment Scenario

1.6.6 Land Use

Land Use of Mine Lease Area

At present, there is a pit in the area. It is proposed to work the deposit of Limestone in next five years by developing the mine by formation of proper benches, each of 3m height. At the conceptual stage, the mined out pits will be converted into water reservoir.

Land Use of the Study Area

The land use land cover map of the study area has been prepared using recent Landsat satellite image, area and distance calculations have been carried out using GIS software after geo-referencing and interpretation. Total Land covers an area of 25789.71 ha. Out of which 6186.22 (23.99%) is builtup land, 6516.5 (25.27 %) is crop land, 2446.49 (9.49%) fallow land, 2523.2 (9.78 %) is forest land, 4555.65 (17.66 %) waste land, 3561.65 (13.81%) Water bodies /River.

1.6.7 Soil Quality

The soils of study area are predominantly Sandy loam in texture. The pH of the soil is ranges from 7.28 to 7.91. The soil being of friable consistency, the bulk density of the soil is in the range of 1.2 to 1.8 g/cm^3. The organic carbon content of the soil samples varies from 0.37 to 0.52 mg/100g.

1.6.8 Ambient Air Quality

The analysis report shows that since this mine is not operating and traffic on the National Highway is also less, population in the village is not more. The baseline ambient air quality was found to be within the permissible limits of NAAQS.

1.6.9 Noise

It was observed from the noise monitoring results that the noise levels at the mine site and the surrounding were higher side as compared to other locations. However, within the noise standards prescribed by CPCB for residential, sensitive and industrial areas.

Generally, noise levels in public places like temples and community hall have higher values in day time.

Day time Noise Levels (Leq day)

- The day time (Leq day) noise levels observed in the range of 42.9 to 48.3 dB (A) in study area which is within the prescribed limit of 55 dB (A).
- The day time (Leq day) noise levels at mine site observed as 61.2 to 64.3 dB (A) in study area which is within the prescribed limit of 75 dB (A).

Night time Noise Levels (Leq night)

- The night time (Leq night) Noise levels observed in the range of 37.8 to 44.1 dB (A) which is within the prescribed limit of 45 dB (A) in study area.
- The night time (Leq night) Noise levels at mine site were observed in the range of 56.3 to 58.9 dB (A) which is within the prescribed limit of 70 dB (A).

1.6.10 Water Environment

Groundwater Quality

The analysis results shows that the pH for the ground water samples GW1, GW2,GW3,GW4,GW5 and GW6 ranged from 7.13 to 7.62 indicating slightly alkaline in nature. The TDS (Total Dissolved Solids) were found to be in the range 436.0 mg/l to 518.0 mg/ l which is within the permissible limit of 2000 mg/l. Total Hardness of Ground water samples in the study area was found to be 202-238 mg/l which is within permissible limit. Alkalinity indicates better buffering capacity of water and ranges between 172.0-201.0 mg/l.

Fluoride content varies from 0.48 mg/l – 0.61 mg/l which is within permissible limit. The overall ground water quality in the study area was found to be mineralized with respect to total dissolved solid, chloride (58.0 mg/l to 69.0 mg/l), sulphate (26.0 mg/l to 31.0mg/l) and hardness.

Surface Water Quality

Surface water samples were collected, and analyzed, pH value was found to be 7.40 to 7.49 mg/l which indicate that surface water is alkaline in nature; TDS was found to be 404 to 430 mg/l. Dissolve oxygen were found about 5.9 and 6.1 mg/l. It is seen that the physicochemical analysis of other parameters like chloride, calcium, magnesium, nitrate and fluoride were found within the desirable limit. The overall surface water quality of the available sources within the study area was found to be good physico-chemically with respect to all the parameters. There is no organic load-observed in the sources monitored indicating no pollution load in the source.

Biological Environment

Ecological study is essential to understand the impact of industrialization and urbanization on existing flora and fauna of the study area.

There is no wildlife sanctuary, National park, Biosphere reserve, Wildlife corridors, Tiger/ Elephant reserve within 10 km radius of the mining lease.

1.6.11 Cropping Pattern

The main base of the economy of Janjgir-Champa district, agriculture and forest produce is collection. Agriculture is mainly produced in paddy, maize crops and wheat, jowar, kodo kutki, gram, tur, urad, sesame, Ram sesame, mustard. Besides agriculture, animal husbandry, poultry farming, fisheries also play a supporting role.

1.6.12 Socio Economic Status

The study area includes 44 villages within the 10 km. radius with a total population 105530. as per census 2011. As per census 2011, about 27934 of the total are main workers, 27514 are marginal workers.

1.6.13 Impact on Air Environment

- Water sprinkling will be done twice during the day in summer season and once during the day in winter season for settling of dust particles.
- Sharp drill bits will be used for drilling and they will be maintained periodically to reduce the generation of dust.
- Transportation of mineral will be done on Kaccha road which will generate dust and rest of the distance will be on National Highway will not cause air pollution.
- Drilling machines will have bag filters attached to them also to prevent the dust to get air borne.

1.6.14 Impact of Traffic Density:

Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. Existing traffic on these roads was compared with the carrying capacity of these roads as per IRC guidelines and it was found that the roads are capable of handling the additional traffic/load.

Post project PCU will be **626.60** PCUs (513 PCUs Existing + 113.60 PCUs Proposed) on Masturi-Jairamnagar Road. It can be clearly stated that the road used for carrying mineral to the end users is capable of handling the additional load due to mining activities

Table 1: Carrying Capacity of Roads

Location	Existing Traffic Load			Total Traffic load including Applied Project		
	No of PCUs	V/C	LoS	No of PCUs	V/C	LoS

Project site to Masturi-Jairamnagar Road	513	0.143	**A**	626.60	0.174	**A**

1.6.15 Impact on Noise Environment

The expected noise levels in the working environment are compared with standards prescribed by occupational safety and health administration (OSHA-USA) & CPCB-NEW DELHI, the noise levels are expected to be in the acceptable range.

1.6.16 Impact on Water Environment

Impact on Surface Water Quantity

Surface water will not be utilized and impact on surface water quantity is not anticipated due to the proposed activity.

Impact on Surface Water Quality

The proposed opencast mining operation may cause water pollution. The sources of pollution generally are:

- Wash off from dumps
- Soil Erosion

Mitigation Measures

In open cast mining pits as well as on dumps, it is necessary that the rainwater falling outside the edge limit of the working areas will not be allowed to enter into the pit and working areas. Therefore it is proposed to develop garlands drains around the mining pits and dumps to arrest the surface runoff water and divert it to lower synclines without any contact with the mining operations.

In the lease for proper drainage of water, a set of garland drainages will be made in the mining lease area and the water will be accumulated at the lower most gradient by constructing siltation tanks which will act as water storage in the area as well as collection of silts. Silts will be regularly cleared regularly.

Impact on Groundwater Quantity

The impact of mining on groundwater is not anticipated as the mining pit will be below the general ground level of the surrounding area. There is no perennial rivers/nallas or spring present at or near by the proposed lease area. As per villagers water table is available at approx. 40 meter or below from the normal surface level. As evident from nearby wells, as well as also by villagers during the summer water table goes down below 45 meter and in rainy season water table comes up within 35 meter. Since the water table is below the maximum excavation depth of operation and the flow or extent of nearest hydrology is too far

from the proposed lease area thus no impact can be assessed on water table, water flow or hydrology. Moreover no sewage or other effluents will be generated from the mine closure activity which are required to be discharged on water. Hence no water pollution can be assessed. The mine closure shall not cause any change or diversion of any source of water in the area or any drainage pattern. Garland around the mine will also maintain the natural drainage system

1.6.17 Impact on Flora and Fauna

As the mining activities will be confined to core zone only, no adverse impact is foreseen on the flora & fauna in the core zone. To prevent the entry of wildlife animals from entering the lease area proper fencing will be done all around the lease area.

1.6.18 Impact on Top Soil

During mining of Limestone , 7758 cum (2950cum + 4808cum) of top soil will be generated and will be used for plantation and reclamation.

1.6.19 Impact on Socio Economic Status

Socio-economic survey was conducted in six villages within the study area located in all directions with reference to the project site.

The respondents were asked for their awareness/opinion about the project and their opinion about the impacts of the project, which is an important aspect of socio-economic environment, viz. job opportunities, education, health care, transportation facility and economic status.

1.7 Environment Monitoring Program

The monitoring of pollutant in mine will be carried out for air, water, soil and noise. It takes care of all monitoring needs of the mine. Additionally ambient air and work zone monitoring in mine will be conducted in every season near mining operation, loading and transportation (haul road) areas by Government approved private agency. The analysis results of air monitoring will be properly recorded and submitted to the statutory authorities from time to time. Monitoring will be done twice in a year except monsoon season.

1.8 Additional Studies

1.8.1 Risk Assessment and Disaster Management Plan

The following natural /industrial problems may be encountered during the mining operation are:

- Inundation-filling of the mine pit due to excessive rains.
- Slope failures at the mine faces or stacks.

Water table will not be encountered during proposed working. No high risk accidents like landslides, subsidence flood etc. have been apprehended. But possibility of accidental disaster is also not ruled out. Therefore, all the statutory precautions will be taken for quick evacuation as per the Mines Act 1952, the Mines Rules 1955, Rule of MMR- 1961 and the Rules of MCDR-1988.

1.9 Environment Management Plan

The environment management plan is prepared with a view to facilitate effective environmental management of the project. Apart from having an Environmental Management Plan, environment management cell consisting of mines manager, safety officer and environmental officer is constituted. A total of Rs. 11.461 Lakhs/- would be spent on environment management activities every year.

1.10 Project Benefits

The surrounding inhabitants around the mine lease area are mainly agricultural oriented. Opportunities for jobs activities will be created and mining will serve as a source of permanent livelihood. The mine will create employment directly or indirectly. Additional, certain works like transportation will be outsourced on contract. So, overall effect of mining is expected to be positive.