Executive Summary

1.0 INTRODUCTION

M/s. Shree Krishna Vyjayanthi Industries began mining and processing in the late 2000 with main objectives of systematic Mining, Export of Minerals processing of Iron Ore and planned development in the State of Karnataka with focus on High & low grade Iron ore. Over the decades the company has grown its business in the field of Iron ore in Karnataka and is reputed company for fulfilling the requirements of domestic consumers. This Company is technically well equipped to handle Mega projects and sound to implement the projects in time.

M/s. Shree Krishna Vyjayanthi Industries is intents to Set up beneficiation Plant at Sy No 237 of Hirebaganal village, Koppal Taluk, Koppal Dist., Karnataka State, over an extent of 25.30 Acres (10.24 Ha).

The company has adopted new technology which is found to be better in comparison to the other technologies available with respect to productivity, efficiency's and environment friendly. The capacity of the beneficiation plant is 1500 tonnes per day (4.5 lakh tonnes per annum). The finished product shall be delivered as per consumers demand.

The company intends to install beneficiation plant mainly for removing impurities from the low grade iron ores. The process comprises grinding the Iron Ore, beneficiation and de-sliming the ground ore to remove the clay type binder and free silica.

Since the quality of iron ore from this area is better than the ores produced from other areas usually the low grade Iron Ore is not sought for from the end users. Thus improving the grade of low grade Iron Ore there will be increase in the overall quantity of iron ore available in the sector and this would lead to better mineral conservation.

For utilization of the local iron ore fines and low grade iron ore, company intends to install a beneficiation plant of 1500 TPD to upgrade low grade material. It act as a scavenger that takes care of huge ore burden of low grade ore fines that remains as dump in the region which is an environment threat for the time to come. As a process this enables to maintain the product quality as well as minimize the low grade dumps.

2.0 LOCATION & ACCESSIBILITY

M/s. Shree Krishna Vyjayanthi Industries is well connected from Koppal city by road. Plant area is situated at a distance of 4 Km from state highway connecting Koppal – Hospet in North direction. The plant area can be reached by tar road of 12 kms from Koppal. The nearest railway station is at Koppal (12 Kms). The nearest air port Hubli is at a distance of 135 Kms from the plant area.

TABLE No.1 SALIENT FEATURES OF PROJECT

District & State	Koppal, Karnataka
Taluka	Koppal
Village	Hirebaganal
Khasra No. / Plot No / Block	237
Total Area	25.30 Acres (NA converted land)
Type of the Area	Patta land
Survey of India Toposheet No	57 A/3 & 57 A/7
Longitude	$76^0$14’06.9” to $76^0$14’20.6”
Latitude	$15^0$19’12.4” to $15^0$19’22.9”

3.0 TOPOGRAPHY :

The area is plain with gentle slope devoid of vegetation. The Beneficiation plant area is plain land with gentle slope. There is no vegetation within the plant area.

3.1 DRAINAGE

The beneficiation plant area falls in patta lands of Hirebaganal village, the Beneficiation plant area is plain land with gentle slope. There are no nallahs with in or near the plant area. There are few seasonal nallah in the buffer zone, which drains the rain water during the monsoon period. The general flow of the rainwater in the buffer zone is towards South it will drain out automatically in natural drainage system. Hence, there is no danger of the enrichment rainwater in plant area. The proposed plants are much above the ground water level i.e. +520m msl. There is no runoff water from the neighboring areas to the beneficiation plan.

4.0 GENERAL DESCRIPTION OF PROJECT:

Beneficiation plant is mainly for removing iron impurities like silica and alumina. It involves beneficiation of iron ore by hydro cyclones for separation of iron ore and waste. The waste passes through the de-sliming unit where maximum waste is recovered. The slime/ waste still having Fe more than 45% is being consumed by cement industry.

Is a known fact that till recently, mining leases have neglected low grade (52-54% Fe Content) iron ore fines, as the good quality iron ore was available in abundance. Today, with reducing availability of high grade (64% +Fe Content) iron ore and resulting in increase of ore prices, Indian entrepreneurs have realized that low grade iron ore fines, generally dumped on the mines head, are a valuable nature resource. These can be gainfully utilized in DRI Plants and Furnaces after treatment through the process of Beneficiation.

Considering the above factors, M/s. Shree Krishna Vyjayanthi Industries has proposed to establish an industry to carryout Beneficiation of low grade iron ore .It is expected to get iron ore fines having Fe content of 52%-58%, from their own captive mines and also from the near by mines which are situated at Bellary-Sandur-Hospet region and brought to Plant for beneficiation process, the Fe content shall be increased up to +66% Fe.

Table No.2 Salient features of Beneficiation Plant

Sl No.	Items	Proposed
1	Plant Capacity	4.50 LTPA
2.	Feed grade	+58% Fe
3.	Feed Size to crusher	-200mm
4	Feed to Beneficiation plant	-10mm
5	Uses	Sinter plants and Pelletization plants.
6	Quality of the processed ore	+66.77% Fe (based on feed grade)
7	Recovery of ore	58%
8	Tailings %	42%
9	Analysis of Tailing	46.56% Fe
10	Water requirement (make up)	10.5 m^3/Ton
11	Water in circuit	2.4 m3/ Ton
12	Power requirement	800-900 KW

The company has collected the surface samples from various mines in Bellary- Hospet – Sandur sector and submitted the samples for their complete analysis to Regional Ore Dressing Laboratory, Indian Bureau of Mines, Bangalore. The Laboratory is carried out for the test for Beneficiation studies, Work index and Thickening studies on an iron ore samples.

5.0 Project description with process details (a schematic diagram/ flow chart showing the project layout, components of the project etc. should be given)

The flow sheet adopted for 1500 TPD Beneficiation plant (mineral processing) include crushing of the ROM (run of mine) and sizing (classification) of the ore followed by Gravity concentration, Tabling and Dewatering etc.

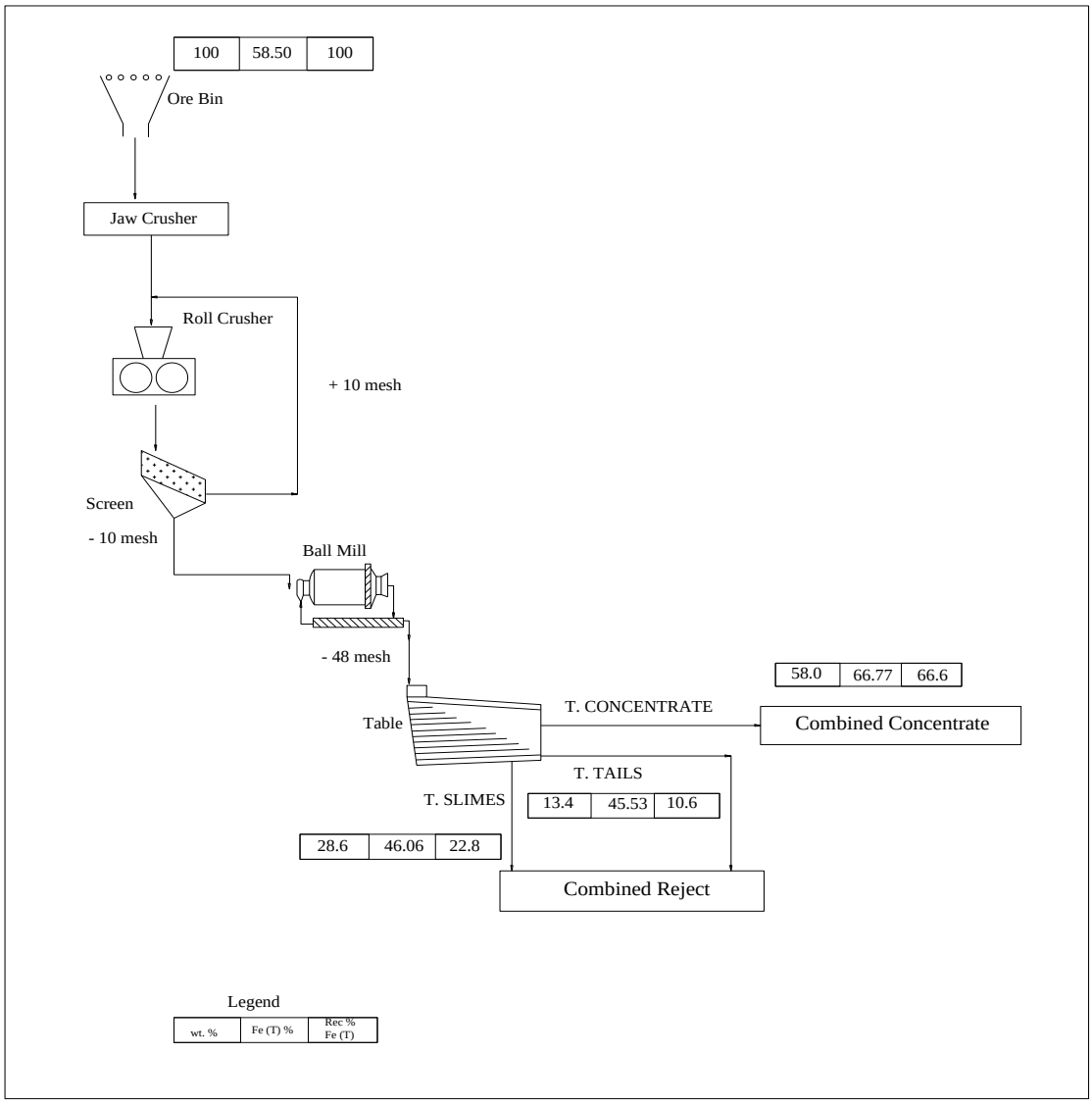
As per the requirement of Sri Krishna Vyjayanthi Industries, The Regional Ore Dressing Laboratory, IBM, Bangalore has carriedout the detailed analysis and Designed a flow sheet it includes following equipment.

- Feed bin
- JAW crushers & Roll Crusher
- Screen
- Ball Mill
- Table
- Cyclones
- Dewatering system (Thickeners, Filters) etc.,

5.1 Beneficiation Plant Process Description:

After size reduction (Crushing), the material about 100TPH from the secondary crusher we are feeding in to feed bin of capacity 90 to 110TPH of 4 to 6% moisture. Feed bin is used for storage purpose (Material handling), after this the ore is subjected to scrubbing having Capacity of 100tons to remove clay coating etc. The beneficiation plant process chart is given below.

Flow Diagram



5.2 BENEFICATION STUDIES:

The processing of enriching the Fe content of the low grade iron ores, to an acceptable range is called Beneficiation. The process to be chosen for beneficiation depends on the properties of iron ore like initial Fe content, grain size distribution, silica & Alumina content etc., The beneficiation studies were carriedout by Regional Ore Dressing Laboratory, Indian Bureau of Mines, Bangalore.

5.3 FINAL TEST

- A portion of the representative sample was crushed to minus 10mesh by successively passing as received sample through a laboratory jaw crusher (225 mm*125mm) and roll crusher (250mm*150mm) in closed circuit with vibrating screen (300mm*900mm).

- The representative portion of the minus 10mesh was ground in roll mill with 6.5Kg rod charge at 66% solids to 48mesh.
- The ground products were subjected to tabling on a Diester Quarter Deck table with controlled feed at 25% solids and 7LPM washy separately and the products were analyzed individually2

5.4 THICKENING STUDIES

SETTLING STUDIES

- Settling studies were performed on Table tails, and Table Slimes
  i) Selection of suitable flocculent,
  ii) To determine the thickening area required for settling the solids.
- Natural settling rate of tables slimes was very slow and the supernatant water was turbid. Therefore, flocculants (settling aids) were used to increase the settling rates and to obtain clear supernatant water.
- Natural settling test was carried out on table tails.
- The settling test slimes were conducting using 5 different types of flocculants like Magnafloc 203 M/s Ciba Chemicals Limited, Mumbai (CIBA), Suflocs from Suyog Chemicals Pvt Ltd, Nagpur and Sofloc from M/s Somu Chemicals, Bangalore.

6.0 COST OF THE PROJECT

Considering the fluctuating export market scenario and present domestic market conditions of the products, the cost of the project estimated to be around 1300 lakhs. The details are given below Considering the fluctuating export market scenario and present domestic market conditions of the products, the cost of the project estimated to be around 1300 lakhs.

Sl No.	Description	Capital investment Cost in lakh Rs.
1.	Land acquisition (6.00 Acres)	150.00
2.	Cost of the beneficiation plant (Feed bin, Scrubber, Vibrating Screen, Screen(0.5mm), Ball Mills, LIMS, Tables, Desliming ,Spirals WHILMS, Thickeners, Filters, Slurry Pumps, Miscellaneous.	1100.00
3.	Power Line & D.G. Set	25.00
4.	Environment Management/ monitoring	10.00
5.	Bore wells, pump, tank, water pipe line etc.,	10.00
6.	Miscellaneous expenditure	5.00
Total		**1300.00**

7.0 ENVIRONMENTAL STUDIES

The studies were carried out during Jan-2015 to Mar-2015.

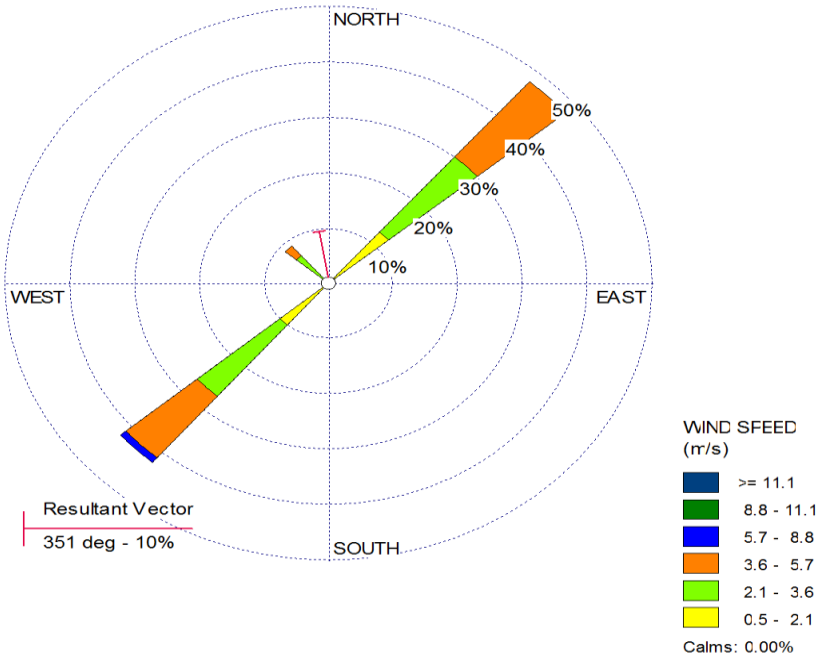
7.1 METEOROLOGY

The summary of the meteorological data for study period is given below.

Parameter	Max.	Min.	Avg.
Rain fall (in mm)	977	454	726
Temperature (^{0}C)	38	17	28.13
Relative Humidity (%)	96	19	65.86
Wind speed (m/s) study period	4	0.7	2.35

During the winter season, the Pre-dominant wind direction was from NW, resulting in flow vector towards SE predominantly.

WIND ROSE DIAGRAM



7.2 BASELINE STATUS

7.2.1 Ambient Air Quality

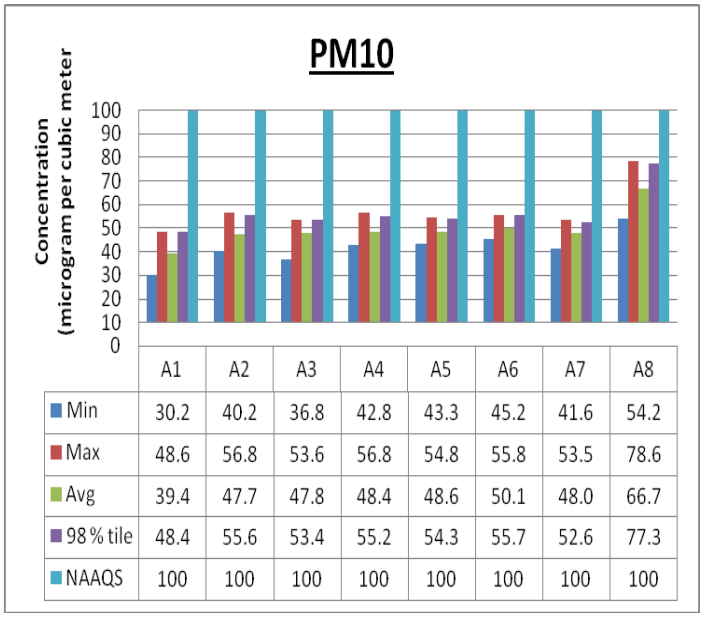
The Ambient Air Quality with respect to the study zone of 10 km radius around beneficiation plant site forms the baseline information.

The scenario of the existing Ambient Air Quality in the study region has been assessed through a network of 8 Ambient Air Quality locations. The design of monitoring network in the air quality surveillance program was based on the following considerations.

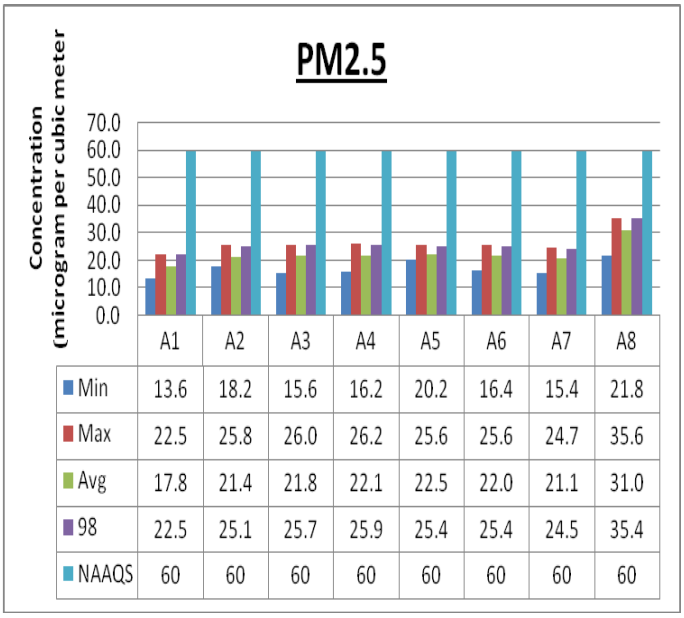
- Topography / Terrain of the study area
- Human Settlements
- Wind pattern
- Health status
- Representation of Regional Background levels
- Accessibility of monitoring site
- Resource Availability

Calibrated Reparable dust Samplers have been used for monitoring the existing AAQ status. Maximum, Minimum, Average and Percentile values have been computed from the raw data collected at all individual sampling stations to represent the Ambient Air Quality Status. The Ambient Air Quality studies were carried out during **January-March 2015** at eight locations in project site & buffer zone data for study period.

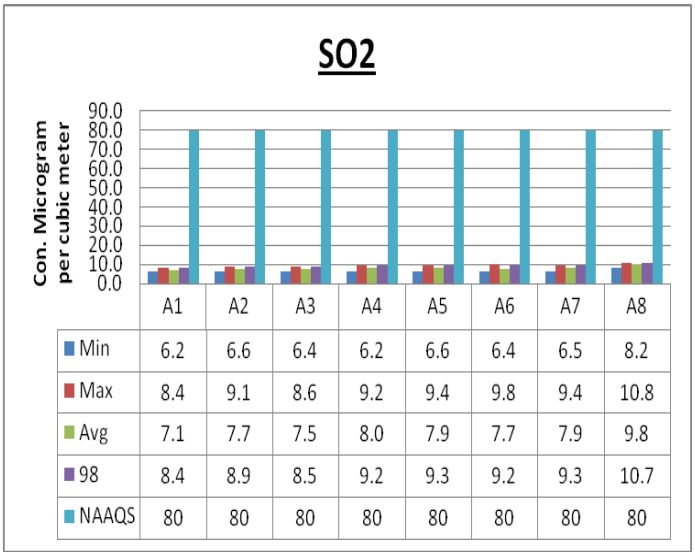
Ambient Air Quality Graphs



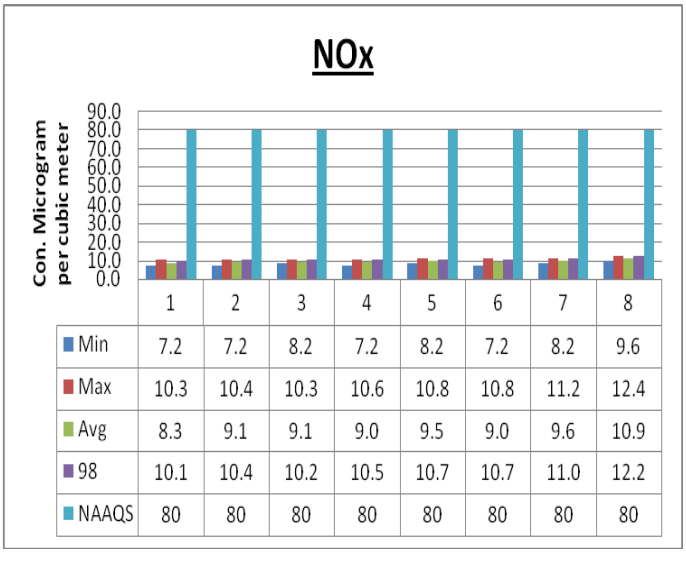
	A1	A2	A3	A4	A5	A6	A7	A8
Min	30.2	40.2	36.8	42.8	43.3	45.2	41.6	54.2
Max	48.6	56.8	53.6	56.8	54.8	55.8	53.5	78.6
Avg	39.4	47.7	47.8	48.4	48.6	50.1	48.0	66.7
98 % tile	48.4	55.6	53.4	55.2	54.3	55.7	52.6	77.3
NAAQS	100	100	100	100	100	100	100	100



	A1	A2	A3	A4	A5	A6	A7	A8
Min	13.6	18.2	15.6	16.2	20.2	16.4	15.4	21.8
Max	22.5	25.8	26.0	26.2	25.6	25.6	24.7	35.6
Avg	17.8	21.4	21.8	22.1	22.5	22.0	21.1	31.0
98	22.5	25.1	25.7	25.9	25.4	25.4	24.5	35.4
NAAQS	60	60	60	60	60	60	60	60



	A1	A2	A3	A4	A5	A6	A7	A8
Min	6.2	6.6	6.4	6.2	6.6	6.4	6.5	8.2
Max	8.4	9.1	8.6	9.2	9.4	9.8	9.4	10.8
Avg	7.1	7.7	7.5	8.0	7.9	7.7	7.9	9.8
98	8.4	8.9	8.5	9.2	9.3	9.2	9.3	10.7
NAAQS	80	80	80	80	80	80	80	80



	1	2	3	4	5	6	7	8
Min	7.2	7.2	8.2	7.2	8.2	7.2	8.2	9.6
Max	10.3	10.4	10.3	10.6	10.8	10.8	11.2	12.4
Avg	8.3	9.1	9.1	9.0	9.5	9.0	9.6	10.9
98	10.1	10.4	10.2	10.5	10.7	10.7	11.0	12.2
NAAQS	80	80	80	80	80	80	80	80

Table No.3 Ambient Air Quality Monitoring Locations

Sl. No.	Code	Name of Sampling Location	Direction w.r.t Site	Distance in Kms
C o r e Z o n e				
1	A1	Project Site	--	
B u f f e r Z o n e				
2	A2	Hirebaganal village	SE	1.3
3	A3	Halawarthi Village	W	3.0
4	A4	Hosa Kanakapura Village	NE	3.0
5	A5	Basapura village	NW	3.2
6	A6	Allanagar village	NE	1.0
7	A7	Kunikera village	SW	5.0
8	A8	Ginigera village	N	3.5

On perusal the observed data of core zone and buffer zone are compared to the standard laid down by CPCB indicates that all the air pollutant parameters are well within the limits.

Discussions of AAQ in Study Area.

- The minimum & maximum values of PM_{10} monitored in the AAQ study area is in the range of 30.2 - 78.6 µg/m^3 respectively.
- The minimum & maximum values of $PM_{2.5}$ monitored in the AAQ study area is in the range of 13.6 – 35.6 µg/m^3 respectively.
- The minimum & maximum values of SO_2 monitored in the AAQ study area is in the range 6.2 - 10.8µg/m^3 respectively.
- The minimum & maximum values of NOx monitored in the AAQ study area is in the 7.2 – 12.4 µg/m^3 respectively.

From the statistical analysis of baseline air quality data obtained during study period it is observed that the baseline air status is within the prescribed NAAQ standards.

7.2.2 NOISE QUALITY

Excessive noise levels will cause adverse effects on human beings and associated environment including domestic animals, wild life, natural ecosystem and structures. To know the ambient noise levels in the study area one location at core zone and seven locations at buffer zone have been selected.

Table No.4 Summary of the Noise Level

Sl.No	Sample Location	Noise Level dB (A) Parameters		
		Min.	Max.	Leq
1	Project Site	42.2	48.6	46.95
2	Hirebagnal Village	46.6	53.1	49.58
3	Halwarti Village	44.8	49.4	48.29
4	Hosa Kanakapura Village	39.2	53.4	48.79
5	Basapura Village	43.5	51.3	48.58
6	Allanagar Village	45.4	52.9	49.64
7	Kunikera Village	38.2	51.4	50.36
8	Ginigera Village	51.6	57.9	56.45

NOISE POLLUTION CONTROL

In an operational beneficiation plant major noise sources are operation of machineries and equipment, screening units, operations. Noise generation may be for an instant, intermittent or continuous periods, with low to high decibels.

As there are no villages within 1.0 km range, noise level will be insignificant as the operations are of intermittent nature. Although the ambient noise level monitoring carried out in and around the proposed plant shows that ambient noise levels are well within the stipulated limits of CPCB.

Periodic inspection and checks of the risk prone areas and equipment shall be conducted towards noise control.

- Acoustic enclosures, hoods, laggings and screens shall be provided in noise generating areas to the extent possible so that the sound pressure levels in working areas are restricted below 85 dB (A) for 8 hours duty. This shall be regulated before engaging the equipment or purchase of the same.
- Provisions of rotation of workers to minimize exposure time as well as provision of earmuffs to workers exposed to high noise areas are also envisaged. In addition to it, green belt development shall be undertaken around the lease area to minimize propagation of noise.
- Regular monitoring of noise pressure level shall be done inside and outside the plant area.
- The equipments and machines should be maintained properly. Particular attention should be given to the silencers and mufflers. Ear muffs or other protective devices should be provided to the staff working in high noise prone areas.

Mitigating Measures

Transmission of noise and vibration is limited by the distance from their sources. Noise could be considerably reduced by adaptation of low-noise equipment or by added retrofit or installation of sound barriers. Green belt of natural vegetation can be a good barrier. Indigenous plants will be selected in consultation with local forest officials for green belt development. However A Compound wall of 10 feet high is already constructed around the plant area. The green belt is developed in part of the area.

The machineries of the beneficiation plant will be the major sources of noise pollution. Few of the noise reduction measures that will be adopted are

1. Implementation of an effective planned preventive maintenance checklist, which reduces noise level by more than 50%.
2. Using noise barriers and total acoustic enclosures to block redirect or reduce the flow of the sound energy before it reaches to the receiver.
3. Isolating continuous vibration sources from the noise radiating structures by proper mounting.
4. The administrative controls, namely
    - Relocating noisy equipment to less noisy area.
    - Moving personnel further from the noise source.
    - Reduction of shift length, job rotation, shutting down equipment when not needed.
5. Noise controls on crushers, grinding mills and screens.

7.2.3 WATER ENVIRONMENT: WATER RESOURCES

Assessment of baseline data on water resources includes

- Identification of surface water sources
- Identification of ground water sources
- Collection of water samples
- Analyzing water samples collected for physico-chemical and biological parameters

There are few seasonal water courses in the buffer zone area. During the monsoon water from the core zone area will be join in to the seasonal water courses. However there is no nallah with in the core zone area and surroundings.

GROUND WATER QUALITY

Seven Ground Water samples were collected from the bore wells for analysis. Ground Water analysis range the parameters pH values of the ground water samples ranged from 7.12 to 7.82. Total hardness of the samples was in the range 176 to 287 mg/l. Total dissolved solids (TDS) in the sample were found to vary between 356 to 606 mg/l. Fluoride concentration was found to be 0.06 to 0.24 mg/l. Heavy metal concentrations in all the samples were found to be well within the limits. The total water requirement to treat one tone of ore is calculated based on the process flow sheet.

Table No.5 Water Requirement for the process

S.No	Product	Weight %	% of solids by weight	Water requirement m^3/tonne
1.	Concentrate	58.0	80	0.145
2.	Tails	13.4	15	0.759
3.	Slimes	28.6	4	6.816
Total		**100.0**	--	7.720

Water Recovery

The quantity of water required from tails and slime products by thickening is given in **Table No.6.**

S.No	Product	Wt.%	Thickening			
			Initial % of solids	Final % of solids	Water m^3/t of ore	% of water recovery
1.	Tails	13.4	15	75	0.714	10.8
2.	Slimes	28.6	4	30	6.149	89.2
Total		**100.0**	--	--	6.863	1000

As can be seen from the data presented in Table 6, thickening the product, 89% of total water can be recovered (excluding evaporation and other losses). So treat one tone of ore, about 2.4 cubic meter of fresh water is required. (0.827 m3 recovered water + 1.544 m3 i.e.20% additional fresh water for plant usage.

There is proposal of discharging waste water either from mine or from camp into environment. The existing bore well mines camp outside the lease area is more than sufficient for water requirement with the proposed activity.

WATER POLLUTION CONTROL MEASURES

There is one sources of waste water generation:-

- **Process water**

It is envisaged that, the process waste water will be recycled in the process. Treated water will be used for green belt development /plantation and water spraying on haul roads.

- **Ground water quality due to tailings:**

The tailings pond will have liner system in the form of SILPAULIN plastic film on dressed soil. The soil will be compacted before laying the film. The film will be overlain by 150 mm thick soil cover followed by single dry pressed concrete. The SALPAULINE will be laid on the bottom as well as side slopes of the pond. The film will be coated with High Density Polyurathine (HDP) of 120 gsm. This will not allow perculate to ground water. However, there will not any chemicals to be used in the beneficiation plant.

- **Surface water quality due to spill over the tailings along with storm water during monsoon :**

No storm water will be allowed to enter the tailings pond. Proper embankment will be made to avoid entry of storm water from the catchment area into the pond. It will also be ensured that sufficient free head will be provided above the top layer of the slime within the tailings pond so that rain water does not overflow from the pond and escape into the surroundings.

From the natural slopes the rainwater drains into the stream. Maximum water table is about 30m & minimum is about 20m from general ground level of 520 m RL. The proposed beneficiation plant operations are much above the ground water table of the surroundings. Therefore, these operations on the plateau may not have any adverse impact on either the yield or movement of ground water.

Beneficiation Plant activities may cause adverse impacts on surface water as drainage, siltation due to storm water and domestic sewage water. In order to mitigate the likely impacts the following management has been proposed.

The rainwater accumulating in the work area will be collected and will be used green belt development.

To avoid soil erosion, rain water entering into the plant area, carryover of the material with rain water, Lessee provides suitable garland drains all along the active plant area and accumulates in to the Silt Settling Tank (SST). However a compound of 10 feet is already constructed all around the plant area.

To prevent direct impact of rain on soil erosion, the resistant and good root bearing species such as agave, Bellflower, Grass sowing etc., shall be planted.

- All along the higher contour garland channels shall be undertaken.
- Retaining walls all along the toe of the dry tailing stock yard shall be constructed.
- Inward terraces will be formed all over the tailing stock yard to avoid the velocity of flow of water.
- Formation of water garland to regulate and drain the rain waters away from the plant area and directs its course away from the tailing stock yard areas.
- Providing sufficient garland drains and settling tanks shall be constructed to arrest any flow of silt.

6. For arresting the solids escaping along with these run-off in small streams, check dams, adequate in numbers shall be constructed all along the small streams before they join any surface water bodies.

7.2.4 LAND ENVIRONMENT

The site preparation for setting up of various process units in the proposed plant will slightly alter the environmental conditions resulting in air and noise pollution. However this scenario is of short duration. There are no settlements in the site and hence no displacement of the people is required. The proposed land use pattern of the site is given below:

Table No.7 Land Use Pattern of Core Zone

Particulars	Ultimate land use in Ha.
Area for Washing Plant Area	1.32
Area for Green Belt	0.72
Area for Stockyard	0.70
Area for Tailing pond	1.29
Area for Statutory Buildings	0.82
Area for Truck Terminal	0.34
Area for plantation	0.97
Unused Area	4.24
Total	**10.4**

7.2.6 *WATER HARVESTING*:

The rainwater collected can be stored for direct use or can be recharged into the groundwater.

- Recharge to ground water.
- Recharge to ground water is a new concept of rain water harvesting and the structures generally used are :-

Pits: - Recharge pits are constructed for recharging the shallow aquifer. These are constructed 1 to 2 m, wide and to 3 m. deep which are back filled with boulders, gravels, coarse sand.

- The storm runoff may be diverted the though the garland drains, which will create additional recharge.
- A garland drains shall be constructed all along the periphery of the plant area and diverted in course in to the pit.

A water harvesting plan is enclosed vide**. Plate No. 5.**

7.7 PLANTATION PROGRAM

Under plantation programme, it is already developed a green belt all along the boundary of plant area. The implementation of the development of green belt around the plant area will be of paramount importance as it will not only add up as an aesthetic feature, but also act as a pollution sink. Grass species will be propagated to bind the loose particles. Root bearing and hardy species will be planted in the contour trenches at closure intervals.

The species to be grown in the areas should be dust tolerant and fast growing species. Apart from the green belts and aesthetic plantation, other massive plantation efforts shall be decided and executed with the assistance and co-operation of the local forest department to benefit the community and to reduce the effects of fugitive emissions and noise pollution. The following fruit bearing plants shall be planted:

- Mango
- Hunase
- Sitaphala
- Emblica officinalis (Nelli)
- Sibekai
- Jackfruit

Scheme of Afforestation at Beneficiation Plant

Year	Place of Afforestation	Type of Seedlings	Nos/Year
I	All along the haul roads outside the plant area, vacant land in plant area.	Neem, Accacia, Honge, Tamrind, Bell flower, Fruit bearing trees, Grass & Agave	500
II	All along the haul roads outside the plant area, vacant land in plant area.	Neem, Accacia, Honge, Tamrind, Bell flower, Fruit bearing trees, Grass & Agave	1000
III	All along the haul roads outside the plant area, vacant land in plant area.	Neem, Accacia, Honge, Tamrind, Bell flower, Fruit bearing trees, Grass & Agave	1000
IV	Along the haul roads out side the plant area and vacant areas	Neem, Accacia, Honge , Tamrind, Bell flower, Fruit bearing trees, Grass & Agave	1200
V	Along the haul roads out side the plant area and vacant areas	Neem, Accacia, Honge, Tamrind, Bell flower, Fruit bearing trees, Grass & Agave	1200
		Total	**4900**

7.9 SOCIO-ECONOMIC BENEFITS

Spurt in industrialization and beneficiation plant activities have invariably brought a drastic change in the environment including the society connected with region. Mostly remote areas tucked away from urbanization and influence of modern civilization fall within the limits of mine development. A natural corollary to this the socio economic aspects of the local inhabitants who have dwelling this region for generations, get suddenly and probably a radical change, consequent to their abrupt exposure to the mining activities.

The impact of this beneficiation plant project will be positive. The subject project provides employment for about 78 persons and also creates in the service sector for an equivalent number of persons will be indirectly employed in the other allied activities. Thus a population of about 300 persons can sustain their lively hood on this project. Majority of the work force shall be local people coming from and within the district.

The local people will get employment opportunities, better medical and educational facilities etc., mainly due to the mining operation from this project. In addition to this the literacy rate and better living standards shall increase due to the enhanced earning capacity of villagers. This area will also have better Medical, Educational, Transportation and communication facilities, which are also directly, linked with the establishment of the project.

In the buffer zone villages, this project will be one of the major economic activities resulting in generation of revenues to the state and central governments, by way of royalties, taxes, central excise etc., and the living condition of the persons shall improve, thus contributing to the overall up gradation of living standards. There would tremendous earning of foreign exchange due to export of value added products instead of raw material alone from this region.

The socio-economic parameters of the area undergo change due to:

- A spurt in the economic activities in the area.
- Changes in the employment pattern of the area.
- Changes in the pattern of facilities available, both in respect of the infrastructure facilities as well as other services.
- Improvements in money supply in the area through better earning capacity of population.
- Higher employment potential of the area.
- Higher infrastructure facilities that will come up in areas around; roads, communication network etc.
- Better health care for the locality, as facilities available with the plant can become available to the community including special camps to be arranged.
- Better admixture of cultures will result in preservation of the cultural heritage of the area and also will result in better appreciation of different cultures of the people from such diverse areas/localities.

7.10 DEVELOPMENTAL ACTIVITIES

Apart from the various environmental protection measures, the company is conscious of its corporate social responsibility and as any good corporate citizen, it is undertaking the following works in the surrounding areas of the mine.

In order to enhance the contribution of industry and share a greater responsibility not only towards its employees but also for the community residing around lease area. Hence, it is considered necessary to provide minimum facilities to the surrounding villages for their better living standards.

- Assistance to Educational institutions located in the Taluk by way of providing "Teaching **aids, Books & Periodicals**".
- Play items to Anganwadi & Primary schools.
- Scholarships for the best outstanding girl students.

- Improve roads, water supply and other social requirements of the local community to take care of their health, education.

8.0 Budget provision for EMP

It is necessary to include the environmental cost as a part of the budgetary cost component.It is proposed to take up protective measures like construction of check dams and retaining walls near the toes of the dumps. The haul roads both within the lease and outside the mining lease including roads leading to the crushing plant are being watered and good drainage system would be maintained. The project authorities propose to undertake the following environmental works to achieve the environmental quality as desired.

Adequate budgetary provision has been made by the Lessee for execution of Environment Management Plan. The capital investment of monitoring, occupational health and implementation of control measures is given Table 8:

Budget for Environmental Protection Measures (in Rs lakhs)

Sl	Particulars	No.	Cost (lakh Rs.)
I	Pollution Control		
1	Water sprayer (Mobile)	1	10.00
2	Cement masonry water drains all along the compound wall	1000m	3.0
3	Drains along roads	1km	1.00
4	Retaining wall	100m	1.00
5	Silt Settling tank	2	2.0
	TOTAL		**17.00**

Recurring Annual Cost for Environmental Protection

Sl. No	Particulars	Cost (Rs. lakhs)
1	Pollution control measures	1.00
2	Pollution monitoring	1.00
3	Occupational health	0.50
4	Green belt	1.00
5	Others	1.00
Total		**4.50**

9.0 CONCLUSION

This upcoming beneficiation project will meet the development needs of the country without causing any negative influence on the environment. It can be summarized that the development of M/s. Shree Krishna Vyjayanthi Industries beneficiation plant will have a positive impact on the socio-economics of the area and lead to overall sustainable development of the region.