

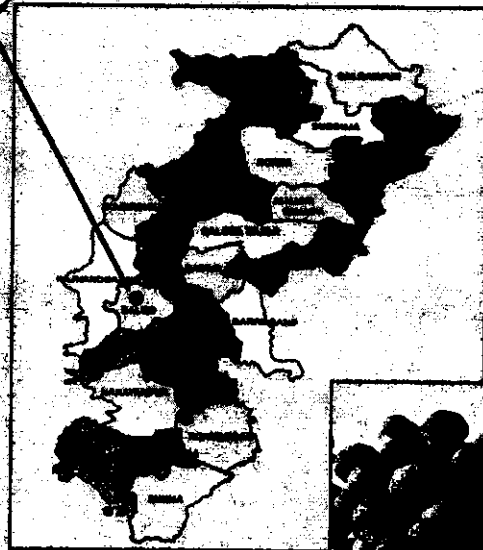
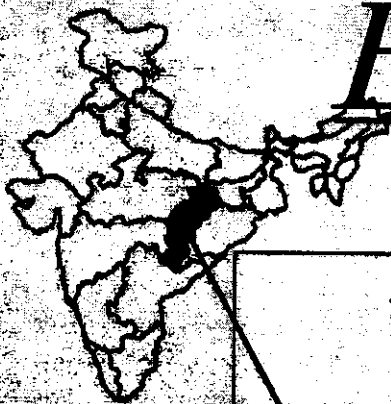
**Environmental Impact Assessment for Setting-up
1 MTPA Pellet Plant with Upstream Sub-Grade Fines and Slime
Beneficiation Facilities at Iron Ore Complex (IOC) Dalli-Rajhara,
District-Balod, Chhattisgarh (India)**

Sponsor:

Bhilai Steel Plant

Steel Authority of India Limited

Executive Summary



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Executive Summary

1.0 Introduction

Bhilai steel Plant (BSP) is undergoing expansion to increase hot metal production to 7.5 MTPA. Under expansion, BSP is setting up a large Blast Furnace (BF-8) of useful volume 4060 m³. Post expansion, the iron ore requirement for BSP will be about 12 MTPA. After expansion 80% Sinter, 20% Lump Ore and Pellet have been envisaged in BF burden. Dalli-Rajhara Iron Ore Complex is the existing captive iron ore mines of Bhilai Steel Plant (BSP). Dalli mine is under Rajhara hills over an area of 719.60 ha in the Balod district of Chhattisgarh State. Since the some of the products of slime beneficiation plant will be of vary fine in nature and as such can not be utilized for sinter making thus, a Pelletization plant has also been proposed to be set up adjacent to the Sub-Grade fines and slime beneficiation plant to agglomerate the ultra fines and produce BF grade pellets. The proposed scheme will not only meet the partial shortfall of iron ore of BSP, but also mitigate the environmental impacts of mining at IOC at Dalli-Rajhara. It will ensure mineral conservation and produce wealth from wastes. The sub-grade fine unit of the Pelletization has been selected with a view to conserve mineral adopting the state-of-art technology. This will be the environmental protective measures based on zero waste mining concepts to sustain the economical growth of the region with a view to social responsibility.

With the objective of attaining sustainable development and environmental concerns related to development of proposed plant at Dalli-Rajhara and to plan and implement appropriate strategies for the protection of environment and maintenance of ecological balance in the region, SAIL engaged CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur for conducting Environmental Impact Assessment Studies encompassing baseline scenario with respect to different components of the environment viz. air, noise, water, land, biological and socioeconomic including parameters of human interest for evolving suitable cost effective Environmental Management Plan.

The EIA report is being submitted for the purpose of requirement of obtaining environmental clearance from statutory authorities. The EIA report will cover the identified impacts with elaborate EMP so as to prevent any damage to environment and ecological balance of the area.



1.2 Project Profile

1.2.1 Location

The proposed pellet plant lies between Latitude - 20° 34' 40.65" to 20°34' 56.671"N and Longitude - 81° 02' 09.043" to 81° 02' 36.637"E and falls within the Survey of India Topo Sheet No. 64H/2. Iron Ore beneficiation Plant at Rajhara Hill Lease comes under Balod District of Chhattisgarh State. It is situated at about 90 km from Bhilai on Howrah-Bombay broad gauge line of SE railway. Presently one wet beneficiation plant, one dry processing crushing plant with a capacity of 9.55 MTPA and a Hitkasa Tailing Dam are located in Rajhara Lease area. There are no major rivers in the study area. On regional scale, small seasonal nallas and tributaries meet the Tandula River. Tandula River meets Sheonath River which is tributary of Mahanadi River. The study area has one relatively large man-made water body namely Boirdih Reservoir (Captive Reservoir of BSP) at a distance approximately 7 km from the proposed pellet plant on SW direction. Hitkasa tailing dam also a man-made slurry disposal tank built by SAIL for its industrial requirement and Jharan dam or Rajhara dam (Captive Reservoir of BSP) are another water bodies near Rajhara mine lease in study area.

1.2.2 Justification for Proposed Pellet Plant

Setting up of Sub-Grade Fines/Slime beneficiation plant along with pellet plant shall facilitate utilization of Sub-Grade Fines and accumulated slime in tailing dam resulting in mineral conservation with a view to achieve zero waste mining. The proposed plant is techno-economically feasible and prima facie recommended for implementation. Adverse environmental impact due to accumulated slime / iron ore fines shall also get eliminated. Site location being nearest to Bhilai Steel Plant and transportation of Pellet would be economical. No displacement of persons or land acquisition in the project activities. Water will be utilized to meet the demand for the proposed plant will be from existing captive dam of BSP. Moreover, it will help in partially bridging the demand-supply gap of iron ore for BSP in future. No sensitive ecosystem / national park / sanctuary present in the area.

1.2.3 Project Description

- ◆ The proposed project can be described under following major heads:
- ◆ Sub-Grade Fines Beneficiation
- ◆ Slime Beneficiation
- ◆ Pelletization

Process**Sub-Grade Fines and slime Beneficiation**

- ◆ Beneficiation of low grade iron ore fines generated in course of mining, hereafter referred as Generated Fines (GF) which have been dumped at various locations in Dalli manual mine. Dalli mechanized mine and Mahamaya mine.
- ◆ Beneficiation of iron ore slime (accumulated slimes in Hitkasa Tailing Dam and mining slimes generated from the Dalli Ore processing Plant and proposed GF beneficiation plant
- ◆ State-of-the-art iron beneficiation techniques like jigging, spiralling, magnetic separation (WHIMS) have been envisaged to be used for beneficiation of generated fines and slimes.

Pelletization Process Includes

- ◆ Storage and handling of raw materials
- ◆ Grinding, proportioning and mixing
- ◆ Balling, indurations and cooling
- ◆ Finished product storage and dispatch

Storage and Handling of Raw Materials

For 1.0 MTPA (3125 TPD) pellet plant, the raw materials requirements, source and receipt are computed as Iron ore fines (1105600 TPA), Limestone (19200 TPA), Coke Breeze (19200 TPA) and Bentonite 19840 TPA respectively will be received directly in the pellet plant and stored in raw material bunkers of respective grinding units. Storage capacity of each material shall be based on 15 days requirement. Dry (moisture 5% max) Iron ore concentrate received by conveyors will be directly fed to designated bins of proportioning building.

Grinding

Iron ore fines input to plant is from beneficiation plant. It is essential that this feed is amenable to balling. It is very much essential to have a size -325# (80% passing). Grinding of Bentonite, coke breeze and limestone is required to reduce the size to make the materials amenable to balling.

Balling

Balling can be carried out in drum or disc palletize. However, disc palletize has been considered in this process, as pellets formed in disc are more uniform in size.

Indurations

Indurations machine for the pellet plant will be based on Travelling Grate / Grate Kiln Technology. Travelling Grate machine is similar in construction to sintering machine. The green balls are laid over a travelling grate and are subjected to drying, preheating, firing and cooling on-line in sequence in repetitive zones of the grate. Cooled and hardened pellets are discharged from the other end of travelling grate. From the storage bunker, pellet will be conveyed to the Iron ore lump bunkers of loading bay, loaded into the rail wagon. Every day one rake of pellet shall be loaded and sent to BSP, Bhilai.

1.2.4 Other Infrastructure

The land in the proposed site has been acquired and owned by BSP. It is a non-forest and non-agricultural waste land. The plant site is near the Dalli-Rajhara mine lease area which has all infrastructural facilities such as electricity, water supply, rail network, road, dwelling houses, sanitation, market place, hospital, police station, educational institution like, school and college etc. The land for Sub-Grade Fines and Slime Beneficiation plant and Pellet Plant is located in non-agricultural waste land. No national park, wildlife sanctuary, tiger reserve, biosphere reserve or heritage sites etc are present in core zone or in buffer zone of the proposed project site. The proposed project is an iron ore based industry involving mining of dumped iron ore fines, accumulated slimes and their beneficiation followed by Pelletization of the concentrate of the beneficiation plant. Material transportation will be made by trucks, conveyors and pipelines. Existing available infrastructure at Dalli such as rail, road, water supply, electricity supply/civic amenities etc. will be utilized for the proposed project.

1.2.5 Manpower

Total manpower envisaged for the proposed project is about 184 (executives 32 and non-executives 152). The manpower requirement shall be met by recruitment / re-deployment of the existing manpower of BSP and outsourcing as and when required. Moreover, the project will offer indirect employment to a number of people. Only 184 personnel are required to run the plant. Most of them will be redeployed from the existing work force of BSP.



1.2.6 Project Schedule and Cost

The project will be complete within 24 months from stage-II approval. Total cost of project is computed as Rs.737.10 Crores.

1.3 EIA and EMP

For the environmental impact assessment studies, an area covering 10 km radial distance from the center of pellet plant area (covering around 10 km area from the boundary of pellet plant on all sides) was identified as buffer zone. Sampling points have been chosen from both the core zone and buffer zone. The study was carried out for EIA for each individual environmental component during summer season is briefly reported below and the details of which are presented in the report.

1.3.1 Air Environment

Baseline Environmental Status

The micro-meteorological data was collected with respect to wind speed, wind direction, humidity, rainfall and temperature. The climate of the study area is subtropical characterized by hot summer and mild winters. The area is located in the central part of India and falls in Agro-eco region 11. As per National Bureau of Soil Survey and land use planning records the area is hot sub-humid eco region with red, black and yellow soils. Balod district generally has a dry tropical weather which is moderate but on a warmer side in summer season. The peak temperatures are usually reached in May / June and can be in the range of 28°C (min) to 43°C (max), whereas winters experiences temperature as low as 7°C. The onset of monsoon is usually from July and the season extends up to October, with monsoon peaking during July and August. As per rainfall record of SAIL the maximum, average and minimum rain fall in study area are recoded 2089 mm, 1344 mm and 600 mm respectively (SAIL). The winds from SE, E and NE directions were observed to be predominant with speed ranging between 0.5 and 3.6 m/s. Local prevailing wind pattern during the study period was in conformity with the climatologically normal of the region. The data indicate that temperature and relative humidity varied in the range of 11-31°C and 42-69% respectively.

Baseline data for air pollutants of significance to biological environment viz. Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Ammonia (NH₃), Carbon Monoxide, Particulate Matter of 10µm (PM₁₀), Particulate Matter of 2.5µm (PM_{2.5}), Benzene (C₆H₆), Hydrocarbons (HC) and Volatile Organic Carbons (VOC) and heavy metal content of PM₁₀, were collected by establishing requisite number of AAQM stations. In all 13 ambient air quality monitoring stations were selected.

PM₁₀ concentration was observed to be below the stipulated standards for residential, rural or mixed area at rural and residential areas as well as below standards (54 – 86 µg/m³) for industrial / mining area in case of mining areas during Summer season. PM_{2.5} was observed to vary from 37 to 51 µg/m³ and was below the stipulated standards. Carbon monoxide varied from 570 to 1080 µg/m³ in the study area and was below the stipulated standard. Methane concentration varied from 0.63- 1.78 ug/m³ and Non Methane concentrations varied from 0.94 – 2.08 ug/m³. The heavy metal concentrations in the dust samples were found to be well within the standard limits of CPCB. Major contributors for PM₁₀, are due to mining activity and transportation activity on semi-permanent road network

Prediction of Impacts

The Fugitive Dust Model (FDM), a steady state Gaussian Dispersion Model was used for predicting GLCs of fugitive dust due to mining activity. Cumulative ground level impacts were predicted with respect to PM₁₀ in terms of 24 hourly Ground Level Concentrations (GLCs) was predicted to be 22.5 µg/m³ near beneficiation plant. With EMP Implementation, there will be decrease in incremental maximum PM₁₀ concentration from 9.5 µg/m³ during summer season due to Beneficiation plant activities as well as crushing activities. There will be decrease of PM₁₀ concentration (< 50%) due to beneficiation plant after employing control methods at various activities within the study area. There will be decrease of PM₁₀ concentration due to pellet plant activity with existing and proposed capacity of 1.0 MTPA during summer season without EMP (30.5 µg/m³) and reduction in concentration with EMP (15.4 µg/m³). The particulate pollution due to transport activities would be very low considering the good environmental practice of dust suppression by using sprinklers in the mine lease area. The high level of particulate matter has been observed at some of the sampling point which are located in the mine lease area and the frequency is once a while and not on regular basis. The reduction level of emission was predicted considering water sprinkling and wind breaking by greenbelt.

Environmental Management Plan

- ◆ Regular grading or stabilization of haul roads and service roads
- ◆ Afforestation with dust filtering trees around pellet plant and grinding Plant for control of dust
- ◆ Water sprinkling on haul roads at regular intervals by water sprinklers
- ◆ Wet suppression by water sprinkling on dust emitting surfaces will be provided

- ◆ Water will be sprayed in the form of fine jet to suppress the dust generated areas and loading and unloading operations
- ◆ The storage area will be provided with retaining wall and the material will be covered with polyethylene/canvas sheets
- ◆ Dry fog system for dust suppression at all transfer points and tertiary crushing points at crushing plant and pellet plant

1.3.2 Noise Environment

Baseline Environmental Status

Ambient noise monitoring was carried out in the study region at 34 locations including core zone and impact zone around pellet plant. The levels of noise were observed as (i) Mining area noise: 62.4-90.3 dB(A) (ii) Traffic noise: Leq 55.3 dB(A) to 61.0 dB(A) (iii) Residential areas: 39.7-57.5 dB(A) (iv) Commercial areas: 48.9-60.7 dB(A) (v) Silence zones: 39.4-55.6 dB(A). Local transport and human activity are responsible for higher noise levels in residential and other areas

Prediction of Impacts

The noise level in the proposed plant was estimated to below 90 dB(A). The predicted noise levels due to increase in local traffic on the main road would be 52.7-66.4 dB(A).

Environmental Management Plan

- ◆ Proper and regular maintenance of equipments, machinery, trucks, and dumpers deployed for the Pelletization activities
- ◆ Worker's safety: Insulated enclosure for staff near noise generating machine, ear muffs for staff, scientific method for control of noise pollution
- ◆ Green belt in and around Pellet Plant for controlling noise pollution
- ◆ Avenue plantation to reduce noise due to traffic in the area

1.3.3 Water Environment

Baseline Environmental Status

Seven surface and twenty two groundwater samples were collected in the study area and analyzed for physico-chemical, bacteriological parameters. Physico-chemical and inorganic quality of surface water and ground water were observed to be good when compared with drinking water quality standards. However, nutrient demand and organic

parameters indicate marginally polluted surface water sources with low productivity of planktons. The surface water sources in study area showed low concentrations of heavy metals. The bacteriological observations indicate that the surface and groundwater quality is good.

Prediction of Impacts

Surface and groundwater quality will not be adversely affected due to development of proposed plant. The baseline data did not show any impact on the surface water / groundwater due to existing beneficiation plant and tailings pond in the area. The analysis of water samples from 5 piezometers on the downstream of existing tailings pond did not show pollution of ground water due to Hitkasa tailings pond which is in operation for last 30 years. The runoff water from stockpiles and mine area will be collected and led to sedimentation pond for removal of sediments before disposal. The pellet plant water will be collected in sump and will be recycled back in the plant for reuse/recycle and will not be disposed off in water bodies to avoid water pollution. There is full scale sewage treatment plant (oxidation Pond) for the treatment of domestic sewage and the effluent is utilized for irrigating plantation. Gully plugs have been placed at proper places on nallas to arrest the sediments in runoff water.

Impact on Groundwater due to Proposed Plant

The existing Hitkasa tailings dam has been in operation since a long time. The baseline survey of groundwater and surface water in the impact zone did not show any impact due to operation of tailings dam. About 163.5 m³ make up water will be required for the proposed pellet plant for mixing and mixing and balling, cooling, dust suppression etc. Make up water will be taken from existing water supply system at Dalli mine. The proposed plant is being designed scientifically to prevent any seepage or disposal of water; as a result there would not be any impact on surrounding surface and groundwater bodies.

Environmental Management Plan

- ◆ Recycled and reused in plant water to conserve surface water for domestic use and for wildlife
- ◆ Proposed plant will be scientifically constructed with proper impervious material to control the seepage and groundwater pollution
- ◆ Overburdens in the mines/pellet plant have been stabilized, plantations have been developed, and check dams have been constructed in gullies to arrest silt in runoff water, so there would be negligible pollution due to project activity in mine lease area

- ◆ The surface water balance of Boirdih dam is found to be satisfactory as a source of water for pellet plant maintaining the enough water in dam to maintain its ecological function in the area.
- ◆ Public health will not be affected as the surface water is being treated before public water supply to remove the impurities from the water

1.3.4 Land Environment

Baseline Environmental Status

Soil samples were collected from twenty four sampling locations and analyzed for physicochemical quality. Predominant texture of soil is clay followed by clay loam and loam with porosity varying from 22.90% - 47.25 % and water holding capacity from 35.97% - 60.64 % indicating good quality of soil. Soil porosity is a measure of air filled pore spaces and gives information about movement of gases, inherent moisture, and development of root system and strength of soil. The bulk density of soils in the study area is in the range of 1.16 – 2.06 g/cm³ which, is considered as moderate. Soils are strongly neutral with moderate soluble salts content and very high adsorption capacity but with poor fertility. The soils have micronutrients (trace metals) and moderate microbial flora in the soil. Land use pattern of impact area shows 25% forest area, non-cultivated area 25-30% and 42.50% of cultivated land showing predominance of agricultural activity. The land use of lease area was studied from remote sensing data. Land use pattern indicate 38.0% forest cover and 40.4% crop land. Afforestation has been done in 108.14 ha area (13.3% of total land).

Prediction of Impacts

The silt content in the runoff water from dump area is removed in sedimentation pond by directing runoff water through garland drains into sedimentation tank and construction of gully plugs and check dams to arrest sediments. The environment would not be affected by pollution. Good amount of afforestation has been carried out in mine lease area which would reduce soil erosion from mining lease area. No change in land use pattern in mine lease area is envisaged.

Environmental Management Plan

- ◆ Soil erosion control and conservation through afforestation in and around project areas and afforestation in open areas
- ◆ Greenbelt will be developed around pellet plant
- ◆ Tailings from tailing pond will be reused after Pelletization. Excess tailings may be used for land filling and then stabilised with plantation over its surface

- ◆ Topsoil Management Plan will be prepared to save this non-renewable resource. The top soil will be carefully collected and this soil which harbours propagagules of several species in the form of seeds, bulbs or rhizomes will be spread out in an identified nearby area/degraded forest land to facilitate regeneration of herbaceous and micro-flora
- ◆ Measures of control of soil erosion such as contour trenches on overburden slopes, gully lining, vegetated water ways, vegetative stabilization of overburden dumps
- ◆ In the unlikely event of closure of the tailing pond, it will be closed in an environmentally safe manner as per approval of local Government agencies. It will be covered with 0.5 m waste rock, 0.5 m compacted clay and 0.5 m compacted soil before taking up vegetation

1.3.5 Biological Environment

Baseline Environmental Status

The hills, valleys and plains in iron bearing area and impact area are profusely covered by dense forests with good biodiversity. The forest in the study area is tropical deciduous dense mixed type, open mixed type and in the river banks and gullies, the vegetation is evergreen and semi-evergreen type. Notified forest areas of Reserved Forest (RF) and Protected Forest (PF) bound Dalli Rajhara Ore Mines on all sides. A total of 126 plant species were recorded, out of these, 87 tree species, 21 shrub species 3 herb species, 6 species of bamboo and grasses, 5 climber species, 4 species of epiphyte and parasites were recorded from the study area. *Terminalia tomentosa*, *Madhuca indica*, *Bombax ceiba*, *Bauhinia racemosa*, *Boswellia serrata*, *Mangifera indica*, *Ficus benghalensis*, *Ficus religiosa*, is very widespread. *Acacia catechu* is often present indicating the relation to forest. Wild species are represented by commonly occurring species like jackal, fox, monkey and common birds etc. There is no river in study area therefore fishing activity is not prominent and is used for family consumption purpose only.

Prediction of Impacts

Proposed plant activity will not affect the flora and fauna of the area as it is in non-forest land in Dalli-Rajhara lease area. The biodiversity of plants will be increased due to plantation drive and bird population will be attracted towards the wetland of tailings pond. There will not be any discharge from the plant or sewage treatment plant, so terrestrial and aquatic flora and fauna will not be affected. The agricultural activity will be improved due to

availability of infrastructure through social welfare activities of BSP-SAIL. Public health will not be affected as no pollutants are released in the environment from the proposed plant activity.

Environmental Management Plan

- ◆ Use of diverse local plant species in the green belt to increase plant biodiversity as well as to reduce dust and noise pollution
- ◆ Avenue plantation of dust filtering and shade giving trees
- ◆ Encouragement to villagers to undertake social forestry programme to develop village forests and village grasslands in collaboration with forest department to satisfy their demands and fodder
- ◆ Strict curb on poaching and hunting and special protection to rare and endangered species
- ◆ Development of nursery for raising plant seedlings for afforestation and greenbelt development
- ◆ Protection and conservation for natural regeneration in the forest and green belt
- ◆ Development of botanical garden for conservation of medicinal plants
- ◆ Wildlife conservation plan has also been suggested for conservation wildlife as per wildlife (protection) Act, 1972.
- ◆ An amount of Rs. 100/- Lakh is allotted for capital investment and Rs. 10/- Lakh for recurring cost towards implementation of conservation plan for flora and fauna

1.3.6 Socio-economic Environment

Baseline Environmental Status

Total population covering 21 villages in study area recorded as 73127 with population of ST 32.47% and 12.25% of SC. Out of total population, main workers form 30.60%, marginal workers 9.02% and maximum people are non-workers i.e. 60.37%. Sex ratio (No. of females per 1000 males) computed as 1015 and Literacy rate (74.79%). Agriculture activity is dominant apart from collections of forest produce and labour work i.e. mine labour, agriculture labour, *bidi* making labour are the occupation of local people. The

tribal people are dependent on forest related activities like hunting, collection of fuel wood, edible fruits, edible seeds, mushroom, honey and wax, medicinal and other plants/plant parts, timber, seeds, and leaves, Mahua, timber, oil seeds and flowers, tendu leaves, mango fruits, chiranji, kusum oil seeds, and bamboo. Public health facilities viz. education, transportation, power, medicinal are found good. Almost all the respondents have positive opinion about the project.

Prediction of Impacts

Positive Impacts

Due to proposed plant activity, it is expected that additional people will get employment hence job opportunities for the local people as well as immigrants from nearby areas would increase. Primary and secondary employment opportunities are expected to be improved in the region. There would be increase in the commercial, business and shopping centers to cater the needs of existing population as well as the employee of pellet plant. Due to CSR policy of SAIL, the life of people is happy and existing and proposed peripheral development plans will improve the quality of life of local people. Infrastructural facilities will be improved. It would also result in the appreciation of land values around these areas.

Negative Impacts

No adverse impacts on socio-economic environment due to pellet plant are activity is expected.

Environmental Management Plan

- ◆ Preference will be given to local population for employment in addition to awarding contract work
- ◆ Cottage industries will be promoted
- ◆ Improvement of infrastructural facilities like education, medical, transport etc.
- ◆ Economic upliftment activities such as improving agricultural practices, dairy development, poultry and development of forest based income generating activities
- ◆ Control of air and water pollution through scientific methods
- ◆ Providing safe drinking water supply to the nearby villages
- ◆ Schemes for women empowerment and cultural development
- ◆ Development of low cost sanitation facilities in villages

- ◆ Development of rainwater harvesting methods to augment groundwater recharge; construction of ponds for rainwater harvesting in villages near villages for domestic and agricultural use
- ◆ Occupational Health and Safety
 - An ambulance van is provided to meet any eventuality
 - First Aid Station is provided near the mining lease.
 - Also first aid boxes are provided at required the mine lease areas.
 - First Aid pouches would be made available with shift foreman and mate

Following main issues of the local people consisting are:

- ◆ Health and Medical facilities
- ◆ Education facilities
- ◆ Repairing of Roads
- ◆ Employment etc.

1.4 Conclusions

The development of Pellet Plant with upstream sub grade fines and slime beneficiation facilities at Dalli-Rajhara is environmentally, technically and economically feasible. SAIL has envisaged developing pellet plant to supply the finished product to BSP which is now very much necessary. Basic infrastructure for 1.00 MTPA capacity of pellet plant with upstream sub grade fines and slime beneficiation facilities is already available in the lease of Dalli-Rajhara. All the activities are confined to non-forest area of the lease and management for minimum possible emissions is allowed to enter the environment. Thus, the environment will not be adversely affected in any way. The development of plantation, green belt and wetland of tailings pond will help to increase the biodiversity of plants and birds in the area. Wildlife conservation plan has also been delineated as per wildlife protection Act, 1972. The environmental study indicate that the mechanization of all activities in pellet plant would be greatly helpful in reducing environmental pollution of air, noise, water and soil. Apart from this, the environmental management plan has delineated many measures to reduce pollution by pellet plant operation. Rain water harvesting, recycling of tailing pond water, passive enclosures / dust extraction / dust suppression method for dust generating machines, development of green belt / plantation around pellet plant areas, sedimentation pond to reduce silts in runoff water. The CSR policy of BSP-SAIL would further bring out the development of the surrounding villages and the area and Quality of Life of local people will be improved. The cost of environmental control and monitoring measures are computed to Rs. 2715 lakhs/year.