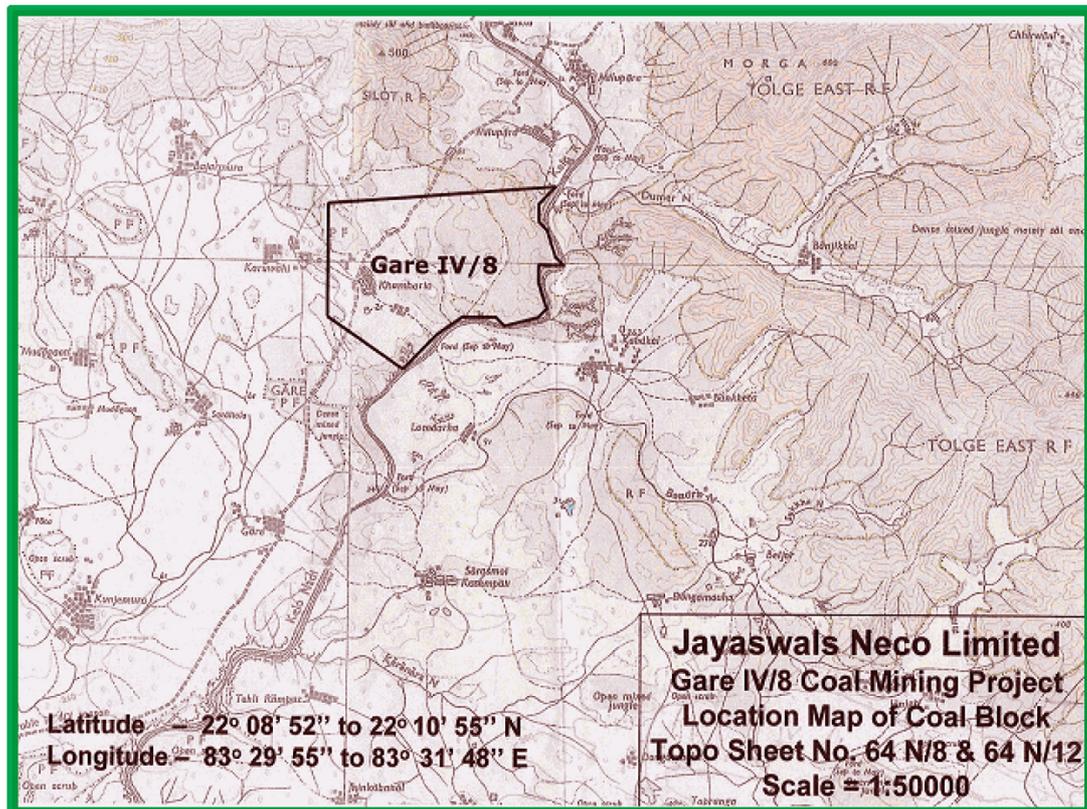


SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT REPORT

For
1.8 MILLION TONS PER ANNUM COAL WASHERY

At

Gare Palma Captive Coal Block IV/8
Near village Khamariya, Tehsil-Gharghoda
District-Raigarh, (CHHATTISGARH)



JAYASWAL NECO INDUSTRIES LIMITED

RAIPUR

DECEMBER 2010

EXECUTIVE SUMMARY

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1.0 INTRODUCTION

M/s Jayaswal Neco Industries Limited (JNIL) proposes to establish 1.8 Million Tons Per Annum (MTPA) coal washery in the lease area of Gare Palma IV/8 coal mine. Environmental Clearance for coal mine has been obtained in December 2008. The coal mine site is located near Khamaria village, tehsil Ghargoda, District Raigarh, Chhattisgarh. The washery will obtain ROM Coal from Gare IV/4 and Gare IV/8 captive coal mines. 1650 tons/day washed coal will meet the requirement of JNIL steel plant at Siltara (Raipur). 3850 tons./ day middlings will meet the requirement of proposed thermal power plant at Jobra-Hamirpur. Transportation of coal shall be done by road using 35 tons trucks. The capital cost of the washery is Rs.45 crores.

The washery will be established on 10.336 hectares of non-forest land inside the mining lease area (total coal mining lease area is 490.568 hectares). The Latitude and Longitude of the site is 22°08'52" to 22°10'55" N and 83°29'55" to 83°31'48"E. No rehabilitation or resettlement issues are involved. Greenery and greenbelt development will be done on 33% area.

240 kl/day water will be required for coal washing, dust suppression and potable uses. Water stored in mine pits will be used. No groundwater will be extracted.

The power requirement is 2.5 MW, which will be taken from Chhattisgarh State

Electricity Board. 1500 KVA DG set will be installed to meet emergency requirement in case of power failure.

The nearest villages are Khamaria, inside mining lease area, Kondkel 1 km southeast of site and Karuwahi 0.5 km west. The forests present are Silot RF in North, Tolge East RF in NE to SE and Gare PF in SW direction.

No National Park, Wildlife Sanctuary, Archaeologically notified protected monument is present in the study area. Salient features of the project site and associated environmental issues were presented before the Expert Appraisal Committee on 23rd March 2010. Terms of Reference for EIA Study were issued vide letter No. J.11015/76/2010 IA-II (M) dated 8th April 2010. The EIA report has been prepared as per the TOR for Public Consultation. The comments and observations received during the public consultation process will be incorporated in the final EIA Report. The final EIA Report will be submitted to the Expert Appraisal Committee for obtaining Environmental Clearance.

2.0 PROCESS DESCRIPTION

Coal washery plant comprises coal unloading, handling, crushing, screening, water cleaning, dewatering and separation of fines from washed water and storing. The coal washery will yield 30% clean coal (containing 28-29% ash) and 70% middlings. 5500 tons per day of coal will be washed. 1650 tons per day of clean coal and 3850 tons/day of middlings will be generated.

Raw coal shall be received inside the washery by trucks from Gare IV/4 coal mine. It will be blended with coal from IV/8 coal mine. Blended coal will be sent to crushing and screening plant. After screening it will be sent to the washery by conveyor belt. After passing through jigs the coal will be cleaned using heavy media cyclone technique. Clean coal and middling layers will be separated and stocked separately. The washed water will be taken to thickener, where coal fines will be separated. The water after separation of coal fines will be 100% reused for coal washing.

3.0 DESCRIPTION OF THE ENVIRONMENT

Baseline data was generated during the period 1st April 2010 to 30th June 2010. 10 km area in and around the project site was considered as study area. Data was generated by following the standard / approved procedures of the Ministry of Environment & Forests and the Central Pollution Control Board. Meteorological data on wind speed, wind direction, relative humidity and temperature was also generated at the project site. Ambient air quality was generated at 4 locations in core and buffer zone. Noise levels were measured at 6 locations. Surface water quality was analysed at 4 locations. Groundwater quality samples were drawn from 6 locations. 4 soil samples were analysed. Data on plants and animals present in the study area was collected from the District Forest Department. Data on landuse, demography, occupation pattern, cropping pattern, infrastructure facilities were collected from District Statistics Handbook and the Tehsil records.

The predominant wind direction at the site is from northwest direction. Calm conditions remains for 26 % of the time. Results of ambient air quality indicate that 24-hour concentrations of SPM, RSPM (PM₁₀), SO₂ and NO_x in the study area are well within the prescribed National Ambient Air Quality Standards. The residential area standard for SPM was 200 µg/m³, RSPM is 100 µg/m³, SO₂ is 80 µg/m³ and NO_x is 80 µg/m³. The observed mean SPM in the study area varied from 116 to 158 µg/m³, RSPM from 39 to 54 µg/m³, SO₂ from 5.0 to 7.6 µg/m³ and NO_x levels from 9.0 to 12.4 µg/m³.

The noise levels in the study area were also found to be well within the prescribed standards for the residential area (45 dBA during night time and 55 dBA during day time) The observed Leq noise level in the study area varied from 45.9 dB(A) to 51.1 dB(A) during day time and 40.2 dB(A) to 42.7 dB(A) during the night time.

Less than 25% of the groundwater available in the Gharghoda Block is under utilization. The region has been rated “safe” by the Central Ground Water Board. The groundwater quality of the area is fit for drinking purpose. Water

quality of river and other streams are fit for drinking after conventional treatment. Neither metallic nor bacterial contamination has been observed.

The soils of study area (10 km radius) are sandy loam type. The bulk density of the soil ranges between 1.28 to 1.34 g/cm³. Chlorides are in the range of 0.0035 to 0.0071%. Organic matter and nitrogen are in the range of 0.61 – 0.65% and 1.20 – 1.29% respectively.

In 10 km radius study area, about 39% land of the area is forest land, 46% is agricultural land, 6% is waste land and the remaining is non-agriculture and barren land. Forests of the study area fall under the category of “Tropical Wet Deciduous Forest”. The forests are dense in nature. Sal (*Shorea robusta*) is the predominant species with Saja (*Terminalia tomentosa*) Arjuna (*Terminalia arjuna*) Tendu (*Diospyrox mclanoxylon*), Mahua (*Madhuca indica*), Bija (*Pterocarpus marsupium*) and Dhaura (*Anogeissus latifolia*) being other species. Sporadic growth of Bamboo occurs in the hilly areas. No endangered species of plants or animals are found in the study area.

The total population of study area is 40027. 3670 people belong to SC and 21903 people belong to ST category. The literacy rate is 69%. About 60% of the main workers are engaged in agriculture. Villages in the study area have primary education facility. Primary health centers and sub-centers are available in all main villages of the study area.

Most of the villagers use tap and well water for drinking purpose. Hand pumps are also used as the source of water supply. Post offices are available only in few villages. Most of the villages are connected through road network and are also approachable through public transport. Electricity is available in most of the villages. Agriculture and allied activities are major income generating sources for the people. Agriculture is purely dependant on rainfall. The main crop grown is paddy. Majority of workforce in the area is engaged in agriculture related activities. Cattle wealth occupies a major role in rural economy. The milk and its products are sold. The study area is industrially backward. Cottage industries and brick making units provide some employment to the people.

4.0 MITIGATION MEASURES AND ENVIRONMENTAL IMPACT

Coal Dust is the main pollutant generated during coal handling and cleaning process. Water sprinklers will be used to reduce dust generation during coal handling. Dry fog type dust suppression system will be installed to reduce the dust generation during coal crushing and screening. The crusher unit will be closed and provided with dry fog type dust suppression system. The belt conveyors will be covered to reduce dust generation.

100% wastewater generated during coal washing will be treated and recycled for coal washing. There will be negligible impact on the water environment of the area. Rainwater harvesting structures will be made inside the plant premises. Domestic effluent will be disposed in septic tanks.

Adequate noise control methods will be adopted. The noise level at plant boundary will remain much below the prescribed standards (70 dBA during night time and 75 dBA during day time).

Coal washing will result in generation of middlings, which will be used for power generation at the proposed power plant near Jobra and Hamirpur.

Coal will be stored in bunkers with adequate fire mitigation measures. Onsite emergency response plan has been prepared to take care of public health and safety during any untoward incident.

The contours of the site show that the project will involve little site preparation and leveling work. Surplus earth generated during excavation will be reused for leveling and landscaping. It will be ensured that adequate drains and garland drains are constructed conforming to the existing drainage pattern so that the alteration is kept to the minimum and water logging does not occur.

For mitigating adverse environmental impacts, the following measures have been recommended in the EIA report:

- Wet sprinkler type dust suppression system in coal handling area.
- Covered crusher and screens.
- Dry fog type dust suppression system in crusher.
- Covered belt conveyors
- Closed circuit washing with fines separation system.
- 100% wastewater to be treated and recycled for coal washing. Zero effluent discharge from the washery will be practiced.
- Separate collection of storm water and development of rainwater harvesting structures as per CGWB guidelines to recharge the groundwater resource
- Septic tanks and soak pits for domestic sewage treatment and disposal
- Roads within the plant to be asphalted to prevent dust generation.
- Acoustic enclosures, noise proof duty cabins and rooms to be provided, in noisy areas.
- Workers working in high noise areas to be provided ear plugs / muffs.
- 33% of the project area to be developed as green belt using native plant species.

The proposed coal washery will have certain level of negative impact on the environment. With effective implementation of recommended mitigation measures and safeguards, these effects will get reduced to acceptable level. Implementation of project will have beneficial impacts in terms of direct and indirect employment opportunities in the region. JNIL will introduce a number of community development measures, which would improve the quality of life of the people living in villages surrounding the project site. 4% of the project cost will be spent for Corporate Social Responsibility (CSR) activities like school building, medical camps, drinking water facility, sports and recreation. Communication with the local community will be established on regular basis through an institutionalized mode as part of CSR Policy. Regular environment education awareness program will also be undertaken in the nearby villages. Welfare measures will be undertaken in collaboration with the Local

Administration, Gram Panchayat and Block Development Officer for better results.

5.0 ENVIRONMENTAL MONITORING PLAN

Environmental Management Cell (EMC) will be set up to undertake routine environmental monitoring to evaluate performance of pollution control measures and to ensure compliance with the prescribed standards. The cell will be under the direct control of Chief Executive Office of the plant. Qualified engineers will be designated to manage the Cell. Environmental monitoring will be outsourced to recognized laboratories. EMC will be responsible for the following functions:

- I. Regular monitoring of –
 1. Fugitive emissions, work environment and report any abnormalities for corrective measures.
 2. Ambient air quality at upwind and downwind direction of crusher and at three locations at plant boundary (120 degree to each other).
 3. Re-circulating water quality and testing the inlet and outlet water quality of Wastewater treatment plant.
 4. Ground water quality near the coal storage area, and surrounding villages.
 5. Water quality of Kelo river at upstream and downstream of site. .
 6. Noise monitoring at the plant boundary, nearest habitation including work areas.
 8. Quantity & quality of middlings and fines and their reuse in various purposes.

II. Development and maintenance of greenbelt and greenery within the plant boundary.

6.0 PROJECT BENEFITS

The proposed coal washery will help in improving the infrastructure of the area. The people residing in the nearby areas will be financially benefited directly and indirectly. The project will utilize the poor grade coal for cleaning. Use of clean coal has the several advantages.

Coal washing improves the quality of poor grade coal by reducing the ash content and make it suitable for various beneficial purposes. Coal washery gives maximum yield of good quality coal at an economic cost for use in cement making, power generation and sponge iron plants.

The demand for coal washery is growing due to following reasons:

- Depletion of good quality coal mines in India.
- Mechanised mining increases impurities in raw coal.
- Higher transportation cost makes it uneconomical to transport high ash coal.
- Meeting strict environmental requirement in regard to pollution prevention and control by steel plants, power plants and cement plants.

The major benefit of the proposed project will be to the local population as about 250 persons will be employed for 12 months during the construction period. About 80 people will be employed during the operation of the coal washery. The company will employ local people for plant operation, depending upon the availability of skilled and semi-skilled persons. Medical facilities that will be developed for catering to the requirement of the project personnel will also be extended to the local community.

Several other indirect employment opportunities will be created in the surrounding area. Transport business, vehicle drivers and attendants, workshops, grocery and retail, medical, school, coaching centers, technical institutes, restaurants, self employed persons like tailors, carpenters, plumbers, electricians, etc will get indirect job opportunity.

The company will provide financial assistance to the Gram Panchayats for improving female education and providing vocational training to youths in the field of electricians, plumbers, carpenters, masons, workshop attendants, fitters, welders, etc.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

EMP for effective management of environmental impacts and ensuring overall protection of the environment through appropriate management procedures has been developed. In order to implement the recommended mitigation measures and institutionalise the EMP, budgetary provision of Rs.150 lakhs for capital expenditure has been made. Recurring annual expenditure will be 10% of the capital expenditure. Contractor under the supervision of the company will do implementation of pollution control measures during construction phase. EMC will ensure that all air pollution control device, effluent treatment plants and water re-circulating systems function effectively. EMC will also supervise disposal of spent oil and lubricants and used batteries to the authorized vendors. Plantation will be started during the construction phase by following the guidelines issued by the Central Pollution Control Board. Schemes for resource conservation (raw materials, water, etc), rainwater harvesting and social forestry development will be taken up by EMC. Regular environmental awareness programs for the employees will be conducted. .

Workers will be periodically subjected to health check-up. EMC will ensure cleanliness and industrial hygiene in the plant. EMC in association with the safety department will undertake full review of the potential hazard scenarios during plant commissioning. The review will ensure enforcement of the proposed safeguards for pollution abatement, resource conservation, accident prevention and waste minimization. The implementation of EMP would ensure that all elements of project comply with relevant environmental legislation throughout its life cycle.



Map Showing Site & Surroundings of the Project site

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