

EXECUTIVE SUMMARY

ENVIRONMENT IMPACT ASSESSMENT

&

ENVIRONMENT MANAGEMENT PLAN

FOR

PROPOSED COAL WASHERY

AT

VILL. BALODA, TEHSIL - JENJGIR

DIST. - CHAMPA, CHHATISGARH,

OF

M/S CLEAN COAL ENTERPRISES PVT. LTD.

1.0 INTRODUCTION

- 1.1 A number of sponge iron plants operate in vicinity of Raipur.
- 1.2 They use raw coal as fuel mineral.
- 1.3 Since raw coal has high ash content & are not of consistent quality, the emissions affect air quality.
- 1.4 With a view to reduce ash content & improve the quality of coal, this is reducing the air pollution, it is proposed to wash the raw coal.
- 1.5 With this in view, a coal washery is proposed to set up at Baloda for washing the raw coal.

2.0 Washery Site

Site has been selected so that

- It is not in forest land.
- It is not agricultural land.
- It does not lead to displacement of local population.
- It will not pollute soil, water.

Location of project shown in Plate P-1.

3.0 Project

- 3.1 The proposed washery has a capacity to wash 900000T / year of raw coal.
- 3.2 Raw coal would be supplied by Gevra and Dipika mine of S.E.C.L.
- 3.3 Washery will produce following product mix
Washed coal -
Middlings -
Rejects -
- 3.4 Washed coal & middlings will be lifted by the client M/s. Raipur
- 3.5 Rejects would be used for filling low lying area & road making no land is required for storage of rejects.

4.0 Land

Total land requirement has been estimated as 11.25 Ac. This is non forest, non agricultural land.

Land has been acquired.

The plant & ancilliary facilities will be located within this land. Layout of project is shown in P-2.

5.0 Water Requirement

5.1 Initial Requirement

At the start of the plant, water requirement has been estimated as 3000 KL.

5.2 Operational Stage Requirement

Water requirement during operational stage will be 275 KLD.

5.3 This includes water required for operation of plant, greenbelt development & potable purpose.

5.4 Water will be drawn through deep tube wells.

6.0 Environment Management

Detailed environmental studies have been carried out to assess the impact of the project activities on environmental attributes & suitable mitigation measures have been recommended.

6.1.1 Baseline Environment Studies

Baseline environmental data have been generated

6.1.2. Rationale Behind Ambient Air Quality Sampling

The principle objective of the ambient air quality monitoring is to assess the existing levels of air pollutants as well as the regional background concentration in the project area. Air pollution forms an important and critical factor to study the environmental issues in the mining areas. Air quality has to be frequently monitored to know the extent of pollution due to mining and allied activities. The ambient air quality monitoring is carried out at five stations.

The monitoring stations are identified on the basis of meteorology in the upwind and downwind direction as well as to represent the cross sectional scenario of the project site. The monitoring network is designed based on the available meteorological and climatological norms of predominant wind direction and wind speed of the study region.

The parameters selected for analysing the air quality status are Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur dioxide (SO₂) and Nitrogen oxides (NO_x).

The ambient air quality monitoring stations are shown in the Fig. No. 4.0

Baloda (A₁): This location is near the plant site and is selected to assess the levels of pollutants in core zone due to plant activities. The present data will help to know the increase in pollution levels due to mining operation activities.

Mohada (A₂): This location is towards Northwest direction of proposed coal washery site. It is situated towards upwind direction. It is selected for air quality monitoring to assess the level of air pollutants in the upwind direction.

Junadih (A₃): This location is towards North direction of proposed coal washery site. It is selected for base line study to assess the level of pollutants in the upwind direction.

Bhelai (A₄): This location is situated towards Northeast direction of coal washery site. It is selected to assess the level of pollutants in the upwind direction.

Jharidoh (A₅): This location is situated towards South-East direction from the plant site and is selected to assess the level of plant activities on ambient air quality.

Sultanmar (A₆): This location is situated towards Southwest direction of the plant site and is selected to assess the effects of plant activities on ambient air quality on down wind direction.

The present assessment data will help to know the extent of pollution, if any, due to washing & allied operations in the buffer zone.

Location of monitoring stations are given at Fig. 4.5 A.

6.1.3 Data presentation & analysis

The ambient air quality status is given in the Table - 4.1 and data are furnished in Table No. 4.2. The existing levels of air pollutants are shown in the Fig.- 4.1.

SPM and RPM values are ranging from $85 \mu\text{g}/\text{m}^3$ to $135 \mu\text{g}/\text{m}^3$ and $34 \mu\text{g}/\text{m}^3$ to $57 \mu\text{g}/\text{m}^3$ respectively. SO_2 and NO_x values are varying between 5.0 – 6.3 and 5.2 – 6.9 $\mu\text{g}/\text{m}^3$ respectively.

While comparing with MOEF standards norms for Residential and Rural areas, all SPM, RPM, SO_2 and NO_x values are well within the prescribed limits of MOEF.

Summary

In general, all SPM, RPM, SO_2 and NO_x values are found to be well within the prescribed limits stipulated by Ministry of Environment & Forests (MoEF) / CPCB for residential and rural area.

6.2 Water Quality

6.2.1 Rationale Behind Sampling

Any adverse impact or pollution of water may have undesirable effect on the environment. Hence, it becomes important to assess the water quality periodically in the mining area. Thus, to assess the water quality, five locations are identified and samples are collected and analysed for physico-chemical and heavy metal parameters. Bacterial examination is also carried out to find out the coliform contamination (if any) at water sources. The water quality monitoring locations are shown in Fig. 4.5A.

Location of ground water sampling

- (i) Baloda Hand pump
- (ii) Mohada hand pump
- (iii) Behlai Hand pump

Location of surface water sampling

- (i) Lilagar river U/S
- (ii) Lilagar river D/S

6.2.2 Data presentation & analysis

The ground water and surface water quality status is furnished in Tables 4.3 and 4.4 and shown in Figs. respectively.

Ground / Drinking water quality

At all the locations, pH is found to be 6.92 and 7.01. Total Hardness is 242 and 273.5 mg/l. Chlorides and Sulphates are found to the maximum extent of 23.1 mg/l and 30 mg/l respectively. Phenolic compounds, Cyanides and Insecticides are found to be absent. Heavy metal values except Iron and Zinc are found to be below the detectable limit. E-coli was found to be absent.

All the values were found to be well within the permissible limit of IS: 10500, 1991 norms.

Surface water quality

Both the locations, pH is 7.74 and 7.89. BOD values are found to be 3.0 mg/l. Chlorides are 25 and 30 mg/l. Sulphates are 9.9 and 10.0 mg/l. Heavy metal values except Iron are below the detectable limit.

All the values are found to be well within the IS: 2296 class C norms.

Summary

At all locations, Phenolic compounds, Cyanides, Sulphides and Insecticides are found to be absent. Heavy metal values except Iron and Zinc are found to be below the detectable limit.

In general, the water quality at all locations is found to be well within the prescribed norms of IS: 10500 - 1991 and IS: 2296 - 1982 and also the observed level of various parameters show that water resource has sufficient assimilating capacity.

6.3 NOISE MONITORING

6.3.1 Rationale Behind Sampling

As part of the occupational health and safety measures certain safeguards have been incorporated to mitigate noise pollution in working environments. To know the background ambient noise level at the project and surrounding environment, noise levels have been measured at all the ambient air monitoring locations for baseline study.

The noise level monitoring stations are shown in the Fig. 4.5.A.

6.3.2 Data Presentation & analysis

The noise level data are given in Table 4.5 and status is shown in Fig VI.2 & VI.3.

L_{eq} noise levels at day time and night time are ranging from 4.2 to 4.3 dB(A) and 37.5 to 39.6 dB(A) respectively in the study area.

While comparing with IS: 4954-1868 norms for acceptable outdoor noise levels in residential area, these values are found to be within the limits.

Summary

While comparing with IS: 4954 -1968 norms for acceptable outdoor noise levels in residential area, the L_{eq} values are found to be within the limits.

6.4 SOIL LEVEL MONITORING

6.4.1 Rationale Behind Sampling

Soil characteristics, erosion aspects, soil fertility etc., have direct bearing on the environment. Knowledge of soil parameters is essential for the planning of green belt development.

Keeping the above aspects in view, the soil samples are collected from three different locations within study area to know the status of the soil.

6.4.2 Data Presentation & analysis

The soil quality status is given in Table - 4.7. Soil quality data are given in the Tables 4.8.

6.5 Mitigation Measures

(A) Air Pollution Mitigation Measures

- (i) All trucks carrying raw coal & washed coal, middlings would be covered.
- (ii) Belt conveyors to be enclosed in tunnels.
- (iii) Other conveyors to be covered.
- (iv) Water sprinkling on transfer points.
- (v) Coal Stock to be enclosed.
- (vi) Crusher house to be enclosed & dust collection arrangement fitted.

(B) Waste Water Treatment

- (i) Waste water generated in washery will be treated & reused. No waste water to be discharged.
- (ii) Water Balance is shown in Fig. - I.

(C) Green Belt - 5 to 10 m wide Green Belt will be developed at following locations :

- (i) Around the Project site.
- (ii) Along both sides of road within the washery site.

(D) Block Plantation - Within the Project Site : Above is shown in Plate P-2.