

**SUMMARY
OF EIA OF DHANPURI-AMLAI GROUP OF OC MINES
(4.75 MTY PEAK CAPACITY)
FOR
PUBLIC HEARING**

1.0 Purpose

Dhanpuri and Amlai OC Expansion Sector B (4.75 Mty) is planned in the Dhanpuri geological block. The Dhanpuri geological block has been divided into four sectors i.e. A,B ,C & D separated by geological faults. Out of these four sectors, only sector B has been left virgin. Amlai OC which is being operated on the northern side of Sector 'A' is on the verge of exhaustion. The PR for Dhanpuri and Amlai OC Expansion Sector B is being planned to replace the existing Amlai OC.

Amlai OC which is being operated on the northern side of Sector 'A' of Dhanpuri Geological Block is nearing the quarriable limit. The left out reserve will last for couple of years. For gainful utilization of existing resources another patch i.e. Sector 'B' of Dhanpuri Geological Block is proposed to be opened.

Therefore, preparation of PR for Dhanpuri and Amlai OC Expansion (Sector B) (4.75 Mty) with enhanced coal production and extended life is proposed with a view to fulfill the growth in demand.

To meet the requirement of non coking coal in the country for power generation this mine has been identified as one of the project and it is proposed to expand the mine to produce 4.75 MTY of coal. The life of the projects are about 11 years for Dhanpuri OC and 15 years for Amlai oc (sector B). It is proposed to mine the Seams by opencast method (Dragline and Shovel– Dumper combination).

The EIA/EMP has been prepared for getting environmental clearance of the project for enhance production from 1.95 to 3.50 (Normative) and 4.75 MTY as peak capacity from Ministry of Environment and Forest.

2.0 Location

Dhanpuri & Amlai OC Expansion Sector B Opencast area falls within Survey of India Toposheet No. 64E/7, 8, 11&12 and lies in the Shahdol& Anuppur District of Madhya Pradesh. It is located to the south and south east of Amlai Colliery in Sohagpur Area of SECL. Amarkantak Power House is about 6 km

away to the north east of the mine.

The project is well connected by rail and road. Amlai railway station on Bilaspur-Katni Branch Line (SEC Railway) is about 6 km away. Bilaspur and Katni are located at a distance of about 164 km and 154 km respectively from Amlai station. The PWD road joining Rewa and Amarkantak passes on eastern boundary of the property.

3.0 Source of data & scope

This report has been formulated using various data from the following sources:

Table – 1.1

Sl.No.	Type of Data	Sources
1	Mining and economic parameters and other miscellaneous data	CMPDIL and Sohagpur area, SECL
2	Environmental data including meteorological data, air quality, water quality, noise level data & soil quality data.	Environmental-data generation carried out by CMPDI & Govt. approved labs.
3	Socio-economic study & Land use/cover mapping buffer zone	Census data 2001 & through Remote Sensing data.
4	Flora and fauna	Survey Report prepared by the competent authority in this field.
5	Ground water levels	District ground water survey unit, Shahdol, at the nearest permanent hydrograph station, Burhar and Patna villages
6	Surface hydrology and hydrogeology	CMPDIL, RI-V, Bilaspur
7	Meteorological data	IMD, Umaria.
8	Land use/ cover mapping core zone	As per State Govt. record, data supplied by the concerned SECL area office.

4.1 Project Description:

Dhanpuri-Amlai *group of Mines* project is a group of existing OC mines named Dhanpuri and Amlai OC with an approved consented capacity to produce 1.95 Mte of coal per annum. Mine started coal production in 1987-88 i.e. before EIA notification of 1994.

To meet the requirement of non coking coal in the country for power generation Dhanpuri-Amlai *group of Mines* has been identified as a *group* of the project and it is proposed to expand the mine to produce 4.75 MTY of

coal.

The extent of the property is mainly circumscribed by two main down thrown faults which has made it a ditch like having a max width of 600m. Considering the geo-mining parameters of the quarry, (Dragline and shovel-dumper mining system has been adopted to excavate OB, while it has been proposed that extraction of coal will be done through Surface Miner.

4.2 Reserves & Overburden

Table – 1.2

S.N	PARTICULARS	DHANPURI OCP	AMLAI OCP	AMLAI SECTOR B
1	CAPACITY (MTY) NORM PEAK	2.00 2.725	0.70 1.15	1.50 2.025
2	MINEABLE RESERVES (M.T.)	26.00 (QRY: A& D) BALANCE: 21.18	10.85 BALANCE: 1.15	18.70
3	TOTAL VOLUME OF OB (Mcum)	128.00 (QRY: A& D) BALANCE: 104.00	46.96 BALANCE: 4.60	142.0
4	Av STRIPPNG RRATIO	4.92	4.33	7.59
5	OVERBURDEN (TOP O.B.) (m)	14.0 – 70.0	37	12.56 – 75.48
6	MAXM DEPTH (m)	83	55	110
7	MINE LIFE (Yrs)	11	2 (MAXM)	15
8	MAJOR HEMM	DRAGLINE, SHOVEL, DUMPER	DRAGLINE, SHOVEL, DUMPER	DRAGLINE, SHOVEL,DUMPER SURFACE MINER
9	Av. GRADE	D	D	C
10	MANPOWER	1044	623	REDEPLOYMENT OF AMLAI OC MANPOWER

5.0 Meteorological Trend

The nearest meteorological observatory is at Umaria. The climate of this area is sub-tropical one with three main seasons. Season during April to June is the summer when maximum temperature varies from 40.7⁰C to 46.9⁰C, & minimum temperature varies from 12⁰C to 23.5⁰C. July to September is the monsoon season with an average rainfall of 1490.2 mm. Winter is short and temperature during this season drops down to 0.4⁰C to 7.5⁰C in the month of December. Lowest average wind speed of 3.6 kmph recorded in December with the highest wind speed of 8.3 kmph in July. The relative humidity varies from 75 to 87% in monsoon and 18 to 60% in summer.

6.1 MINING METHOD

- Opencast mining using dragline , shovel & dumper .
- In amlai ocp coal reserves will exhaust in 2 years.
- In dhanpuri ocp coal is being extracted from :
 - Sector A : the section will exhaust in 4 yrs .
 - Sector D(dragline) : major coal producing sector
 - Sector D (eastern section) : the section will exhaust in 2 yrs
- Mine production - three shifts basis.
- In ob top layers removed by shovel dumper combination . Balance ob removed by dragline .
- Dumps are internal and are being concurrently reclaimed
- Major machines are
 - Dragline : 20/90 in dhanpuri , 10/70 in amlai
 - Shovels 4.6/5 cum : 5 nos in dhanpuri , 4 in amlai
 - Dozers : 9 nos in dhanpuri , 8 nos in amlai
 - Grader
 - Water sprinklers : 2 each in dhanpuri & amlai ocps.
- Coal production by loaders & tippers; surface miner proposed in amlai sector B

6.2 Thickness of the seam

Name of Seams (excluding bands) to be worked: Thickness(m)

Seam-VII	0.20-2.17
Seam-VI (TOP)	0.72-9.67
Seam-VI (B) TOP	0.6-2.26
Seam- VI (B) BOTT. &COMB	0.10-2.44

6.3 RESERVE & QUALITY OF COAL

	DHANPURI	AMLAI
Grade of coal :	D	C
Life of the mine :	11 years	15 years
Total mineable reserves (Coal) :	21.18 MT	18.70 MT
Corresponding O.B. volume to be removed :	104.00 Mcum	142.0

7.0 DESCRIPTION OF THE ENVIRONMENT

7.1 SOCIO-ECONOMIC ASPECTS

A study of socio-economic profile in the study area (10 Kms. radius area from the project periphery including core zone) based on 2001 census data) reveals that the total population of the area consists of about 232561 persons, of which (51.85%) are male and (48.15%) are female. Scheduled castes account for (8.35%) of total population and Scheduled tribes (27.95%), whereas (56.82%) population is literate. The data reveals that 23.25 % of the total population are main workers and 8.60% are marginal workers, the rest 68.15% are non-workers.

7.2 LAND

A. Core Zone Area

It is estimated that **1500.549** Ha. of land will be required for Dhanpuri and Amlai OC Expansion Sector B (4.75 Mty) including land for quarry, external dump, industrial and residential complex, roads, safety zone & area for future mining. This also includes **1024.881** Ha. land already acquired and **312.251** Ha. land will be acquired. The land use pattern, as per the present scenario is as given in the Table given below in **Table-1.3**

**Table – 1.3
Core Zone Area
Break up of land (In Hectare)**

S.N.	CATEGORY	DHANPURI OCP	AMLAI OCP	AMLAI OC SECTOR B	CLUSTER TOTAL
1	MINE LEASE AREA (Ha)	1075.780	189.944	190.995	1456.719
a)	FOREST LAND	748.790	166.00	166.92	1081.71
b)	AGRICULTURAL	280.729	0.992	13.14	294.861
c)	GOVT / GRAZING LAND	46.261	22.952	10.935	80.148
2	COLONIES AREA (Ha)	43.83 (AGRI / TENANCY)	-	-	43.83 (AGRI / TENANCY)
TOTAL AREA		OF	CLUSTER	(Ha)	1500.549

B. Study Area

Census data of 2001 have been collected and utilised for knowing the land use pattern. Summarised landuse pattern is given in table 1.4 below.

Table – 1.4

Sl.No.	Landuse	Area (in ha.)	% of total area
a	Forest land	6375.00	14.00
b	Irrigated agricultural land	836.00	1.84
c	Unirrigated agricultural land	22454.00	49.28
d	Culturable Waste land	10001.00	21.95
e	Area not available for cultivation	5895.00	12.93
	TOTAL	45561.00	100.00

7.3 HDROGEOLOGY

The net annual groundwater recharge and draft for the study area were estimated as 64.22 M.Cum and 21.08 M.Cum respectively. Thus, the balance available annual ground water recharge in the study area was assessed as 43.14 M.Cum..

Coal mining is the major industrial development activity in the area. CGWB, NC Region, Bhopal, had assessed and reported (March, 2004) the total annual ground water recharge in the Burhar Development Block, where Dhanpuri (Cluster) OC is located, as 209.86 M.Cum. The stage of Groundwater development in this Burhar Development Block as 4 % and identified the region within category “**Safe**”. The Groundwater development in Shahdol District was reported as 7% and identified under category of “**Safe**”.

8.0 ENVIRONMENTAL QUALITY

A) AMBIENT AIR QUALITY

The analytical data generated during Oct. to Dec. for 2007 to 2009 **SPM**, **RPM**, **SOX**, and **NOx** is given in Annexure-VIII. Salient observations for all the locations are summarised in Table – 1.5

Table – 1.5

Environmental Monitoring Data (Air)

Project: Dhanpuri-Amlai OC Group of mines.

Period: Oct. to Dec, Year: 2008 Unit: $\mu\text{g}/\text{m}^3$

Station Code	Stations	Category	SPM		RPM		SOX		NOX	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
(DA ₁)	DOCM MTK Office, Core Zone.	A-O	210	344	77	162	15	30	26	34
(DA ₂)	Amlai SAM Office, Core Zone.	A-O	223	544	109	172	14	35	18	36
(DA ₃)	Shilpari Village	B	85	162	43	80	12	19	14	23
(DA ₄)	Dhunrahtola	B	92	166	40	82	11	20	5	46
(DA ₅)	Alamganj	C	90	166	45	74	13	21	16	24
(DA ₆)	Bimhauri Village									
(DA ₇)	Sanjay nagar Colony	B	126	166	54	77	12	20	06	48
		A-O	130	253	60	129	12	26	12	26

B) WATER QUALITY

Water samples were collected and analysed from different locations representing surface water sources, ground water sources and mine discharge. The analytical result shows that the physical and chemical parameters are within prescribed limits of GSR 422(E), IS 2296 and IS 10500. Provision of settling tanks to arrest suspended solids from mine water, workshop water, surface run off have been made. Domestic effluent will be treated in conventional septic tank & soak pit.

C) NOISE LEVEL

The L_{eq} Noise levels at Day-time and Night-time are ranging from 47.7 - 69.8 db(A) and 38.7 – 64.2 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.

D) COMPOSITION OF FLORA AND FAUNA.

There is about 1081.710 Ha. of forest land involved in the mining area of Dhanpuri - Amlai group of mines. The forest cover in buffer zone is about 6375.00Ha.(14%) . Thus a total of 7456.71 Ha. of forest land is in the study area. As a measure of biological diversity assessment, Reconnaissance survey was undertaken to catalogue the plant and animal species present in the core zone and the area which are likely to be indirectly affected by the mining activities, termed as Buffer zone.

9.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

9.1 **SOCIO ECONOMIC IMPACT**

The project will have on the whole a positive impact on socio-economic profile of the area due to increase in employment opportunities, trade and business, community development, improved communication link etc.

9.2 **IMPACT ON LAND USE**

The project involves total **1500.549**Ha of land for quarry, industrial and residential complex, safety zone and external dumps etc. About **209** nos. of Project Affected Persons (PAPs) have already been provided employment in SECL out of **255** nos. of eligible PAPs for employment. The post mining landuse is given below.

Table – 1.6

Land use- Post mining					
Purpose	Government		Private		Total
	Forest	Others	Agricultures	Others	
Reclaimed internal dump	965.64	0.00	0.00	0.00	965.64
Water body / void		37.00	0.00	0.00	37.00
Reclaimed External OB Dumps	72.34	0.00	0.00	0.00	72.34
Green belt	75.53	0.00	0.00	0.00	75.53
Residential, R&R Colony, Roads & Infrastructures		73.83	0.00	0.00	73.83
Other (specify) safety zone & area for future mining	276.209	0.00	0.00	0.00	276.209
TOTAL	1389.719	110.83	0.00	0.00	1500.549

9.3 **IMPACT ON ENVIRONMENT**

- A. **Air environment**: - Air quality in respect of SPM, RPM, and SO₂ & NO_x within and around the project area are found to be within the prescribed limits of MOEF. These parameters may increase their values if proper mitigative measures are not taken care of may cause pulmonary infections like pneumoconiosis , silicosis etc, irritation of eyes , poor visibility etc.
- B. **Water environment** : - Untreated mine water , Workshop & Domestic effluent water could cause pollution to surface & ground water courses with excess of Suspended solids , Oil & Grease , COD and BOD, Dissolved solids , Sulphates , Chlorides , Bacterial contamination leading to serious problems to aquatic life & human health hazard.

Lowering of ground water table are the likely impacts on surface & ground water courses leading to water scarcity in the area..

C. **Noise environment:** - The impact of continued exposure of higher noise levels on humans and fauna are as follows:

- * Annoyance and irritation
- * Mental and Physical fatigue
- * Interference in normal activities.
- * Health hazards resulting from impaired hearing
- * In extreme cases, cardio-vascular diseases etc.
- * Task interference.
- * Interference with communication i.e. masking.
- * Hypertension and higher blood cholesterol.

9.4 FLORA & FAUNA: - There are following identified impacts on flora & fauna.

- a) Removal of vegetation due to mining activities.
- b) Pollution of surrounding water bodies due to leaching from overburden dump and pollutants from other activities. This affects the aquatic fauna. Plantation on dump surface and provision of foot & catch drains have been made to control this phenomena.
- c) Dust in atmosphere, contributed by mining and associated activities, when deposited on leaves of the plants in the surrounding areas may retard their growth. Provision of dust suppression system on haul roads, CHP etc has been made.

9.5 HYDROGEOLOGICAL ASPECT:

As mentioned earlier, because of the low permeability of aquifers, the impact of mining on local water regime will be marginal and the radius of influence will be limited to a small distance. So also, due to stratification, the individual permeable beds develop individual drawdown cones and the impact is usually limited to few hundred meters.

9.6 ENVIRONMENTAL MONITORING PROGRAM

The implementation and monitoring of pollution control measures and for overall environmental management, environmental cell at the area and Corporate level will take all necessary care. It will look after the following aspects of environmental management.

- * Generation of environmental data bank.
- * Evolving micro environmental management plan for the project in collaboration with other agencies and consultants.
- * Monitoring project implementation along with environmental control measures.
- * Co-ordinate with other project activities to ensure timely

- implementation of the project.
- * Co-ordination with Ministry of Environment & Forest, Central/State Pollution Control Board for prevention and control of water and air pollution.

9.7 ADDITIONAL STUDIES

(A) PUBLIC CONSULTATION

To ascertain the concern of local affected and others who have a plausible stake in environmental impacts of the project / activity public consultation will be done at project site or close proximity for local affected persons.

(B) RISK ASSESSMENT

Assessment of risk and its management is essential to guard against and mitigate the consequences of major accidents. The term, "major accident" means an unexpected and sudden occurrence of event from abnormal developments in course of one's industrial activity leading to a serious danger to public or environment, whether immediate or delayed, inside or outside the installation involving one or more hazardous substances.

10.0 PROJECT BENEFITS

10.1 IMPROVEMENT IN THE SOCIAL INFRASTRUCTURES:

a) Literacy Drive:

An action plan for achieving 100% literacy among workers in the SECL, was launched in the year 1992. Under the same scheme, workers of proposed project will be covered to achieve 100% literacy level.

b) Socio-Economic Development: Infrastructure Development in nearby villages.

c) Community Development works in nearby villages. Vocational Training Programme for the village provided by *Dhanpuri-Amlai* Group of mines

10.2 EMPLOYMENT POTENTIAL

a) In the project

There has already been direct employment of 1044 nos. in Dhanpuri OC and 623 nos. in Amlai OC in different categories of manpower. For Amlai OC Sector B the manpower of Amlai OC will be redeployed after its exhaustion

b) Secondary Employment opportunities

There will be spontaneous economic stimulus in the area with the expansion

of opencast mine. Traders and private enterprises will grow in the area with this economic growth. Besides, the State exchequer will derive financial revenues through levy of royalty, sales tax etc. and Central Government will also be benefited by way of Central Sales Tax, Income Tax, Cess's etc.

11.0 ENVIRONMENTAL MANAGEMENT PLAN

**Table – 1.7
Compensation (All area in Hectare)**

Land use - Pre-mining land use					
Purpose	Government		Private		Total
All project activities	Forest	Others	Agricultures	Others	1500.549
	Total=1081.71 DhanpuriOC=748.79 AmlaiOC=166.00 Amlai OC Sector B=166.92	Total=80.148 Dhanpuri OC=46.261 Amlai OC=22.952 AmlaiOCSectorB=10.935	Total=338.691 DhanpuriOC=280.729 Amlai OC=0.992 Amlai OC Sector B=13.14 Colony(Outside Mine lease area)=43.83*	0.00	

*** Total Mine lease area is 1456.719Ha. and 43.83Ha of Colony area(agri-land) is located outside of the mine lease area**

The project involves total **1500.549 HA** of land for quarry, industrial and residential complex, safety zone and external dumps etc. The **249** numbers in Dhanpuri and **6** nos. in Amlaioc, project affected persons has been estimated and employment already given to **249** number of project affected persons The PAF's and PAP's will be rehabilitated and paid economic compensation / employment as per **State Govt. R&R package of M.P.**

11.1 RECLAMATION

(i) Dhanpuri OCM

It is an existing mine and all the OB would be dumped in internal dump as its external dump is already reclaimed. The calendar programme has been prepared according to the dumping projection of RPR of Dhanpuri OC (1.25 Mty).

(ii) Amlai OC Sector - B

The mine will be advanced towards dip direction exposing the floor of Seam-I along the sectors shown in the final stage quarry plan. The targeted level of the production will be achieved in the 4th year. First year has been taken as the construction period.

In the second year 0.5 Mty of coal will be produced with a corresponding volume of OB removal of 8.00 Mcum. In third year, 10 Mcum of OB will have to be taken out to produce 1.0 Mty of coal. From fourth year onwards 13.00 Mcum/year will be kept on removing for smooth production 1.50 Mty of coal/year. .

Internal dumping will start from 3rd year onwards. Thereafter OB will be backfilled in internal dump.

To the extent possible, top soil will be removed and stored separately. This soil will be directly spread over the leveled graded backfilled spoil for reclamation of the quarried out land. Biological reclamation work will follow in next progressive year.

Table – 1.8

DUMP	AREA (Ha.)	OVERBURDEN(M.cum)
1. Internal Dump	262.25	208.60
2. External Dump	42.00	42.0
Total	304.25	250.60

1) Reclamation

Technical reclamation involves backfilling of excavated area with overburden in a systematic manner, after leveling and grading, the dump slope and top. Then the top soil would be laid over dump surfaces. Then plantation will be done on dump surface.

2) Compensatory afforestation

About **1081.71Ha.** of forest land is involved in the quarry for which compensatory afforestation is to be carried out. Cost of compensatory afforestation is 232.68Lakhs for both the projects.

11.2 AIR QUALITY CONTROL MEASURES

Considering anticipated affect on air quality due to advance in mining operations, following control measures will be implemented.

1. Water spraying by water Sprinkler will be done regularly on approach roads within the mining area to minimise the dust generation.
2. Water sprinkling arrangement will be provided at the transfer point of coal.
3. Intensive plantation of adequate width all along the haul road and other road will be raised to minimise transport generated pollutants.
4. Crusher house of CHP will be provided with dust extraction arrangements.
4. Minimising the transport of coal from the crusher house to silo loading system, belt conveyor has been provided.

5. Coal transportation to Railway siding will be done in covered trucks.
6. Exposed overburden dumps will be covered through an appropriate plantation
7. Optimum blast hole geometry will be followed to reduce the dust during blasting.
13. Regular monitoring of ambient air quality of project area.

11.3 WATER QUALITY CONTROL MEASURES

1) Management of surface water drainage:-

Garland drains will be made around the periphery of the quarry. These drains will be connected to the Katna nalla which is not likely to be disturbed by mining operation. In the workings, heavy duty pumps will be deployed which will throw the accumulated water from the working face into these garland drains. For treatment prior to discharge effluent will pass through Oil & Grease traps & sedimentation tanks/ ponds.

2) Industrial Effluent Treatment

The mine waste water is collected at the face sump (346212Cum capacity) will be pumped to the settling tank where suspended solids will get settled. The clear water after sedimentation will be reused for water sprinkling, plantation etc. Workshop effluents will be treated in Oil and Grease trap and zero discharge will be attempted.

3) Domestic Effluent Treatment

Domestic effluent treatment will be performed by the conventional septic tank and soak pit arrangement.

4) Water Conservation

Storage of conserved water in mine pits will be given due emphasis to provide water round the year and quality of water will be maintained before and after storage.

11.4 CONTROL MEASURE FOR NOISE LEVEL

To minimise anticipated noise pollution, following control measures will be implemented.

1. Planting of rows of trees with thick foliage along roads and other noise generating centres to act as acoustic barriers.
2. Isolating/enclosing the noisy machines/sources by using resilient mounting/altering structures.
3. Routine maintenance schedules for HEMM and other machineries to eliminate noise as far as possible.

4. Balanced and properly aligned conditioning of machines to reduce vibration.
5. Provision of ear muffs/ear plugs to workers subjected to noise level above recommended limits.
6. Controlled blasting.
7. Regular monitoring of noise level of project area.

11.5 FLORA & FAUNA

The forest land to be acquired by the Opencast Project (Cluster) is 1081.71Ha. Against this a total of 1389.713Ha of land will be returned as forest in the proposed expansion (cluster) of the project as per the post mining landuse given below.

Table – 1.9

S.No	Activity	Final land use	Area (Ha)
1	Residential & R&R Colony & Roads	-	73.83
2	Reclaimed & afforested Internal OB dump	Mixed plantation	965.64
3	Reclaimed & afforested External OB dump	do	72.34
4	Greenbelt/Planted area	do	75.53
5	Safety Zone	do	276.209
6	Final mine Void	Water body / Lake	37.00

The reclaimed and afforested internal, external dump & safety zone comprising 1314.189 Ha (except green belt) will form one integral unit at the cessation of the mining activity. SECL will develop this integrated area, as habitat for the fauna, particularly those mentioned above. The following steps will be taken for development of habitat:

a) Selection of species for plantation:

Care will be taken to plant native and other suitable species on the OB dumps, slopes, etc.

b) The surface of the OB dumps contains several big and outcropping boulders. After proper afforestation of the dumps these secluded spaces will act as shelter for smaller animals like hare, snakes and monitor lizard and can also be used by other burrowing animals like mongoose.

c) A few paved / lined ditches / water holding structures will be constructed on the top of the dump as water hole for fauna.

The above efforts are directed towards creating a composite habitat for faunal species based upon prey predator relationships. After complete rehabilitation of these sites it will support populations of Insect, Bird species, small herbivores and other predatory species dependent upon these species, in the food chain. In addition to these steps SECL will get a faunal survey of the afforested areas at the end of every 3 years to ascertain the richness of these reclaimed sites based upon which additional conservation measures will be undertaken before mine closure.

12.0 Financial provisions & Responsibility for implementation of Conservation efforts:

In the EMP funds have been committed under capital & revenue heads for afforestation, reclamation and other miscellaneous expenditure. These funds will be utilized for conservation efforts. However, any additional requirement for conservation plan will be met from the normal revenue expenditure of the opencast project. A breakup of the funds proposed for conservation of faunal elements is given in the below:

Table – 1.10 A

Sl. No.	Activity	Details of Equipment & other facilities	Total Fund Provision Rs. Lakh.	
			Capital	Revenue/Yr.
1	HEMM for reclamation	Dozers , water sprinklers	151.00	-
2	Afforestation / Bio reclamation	Mixed plantation on dumps & other green belt	51.23	18.42
3	Garland drains	-	5.00	-
4	Conservation of fauna		50.00	-
5	Fencing of voids		10.00	-
6	Wages & benefits for a team of 4 persons @ Rs. 2.75 Lakhs for 5 years	-	-	11.00
	Total	-	267.23	29.42

**Table – 1.10 B
Amlai OCP Sec.-B**

Sl. No.	Activity	Details of Equipment & other facilities	Total Find Provision Rs. Lakh.	
			Capital	Revenue/Yr.
1	HEMM for reclamation	Dozers , water sprinklers	-	-
2	Afforestation / Bio reclamation	Mixed plantation on dumps & other green belt	181.45	10.82
3	Garland drains	-	5.00	-
4	Conservation of fauna		50.00	-
5	Fencing of voids		10.00	-
6	Wages & benefits for a team of 4 persons @ Rs. 2.75 Lakhs for 5 years	-	-	11.00
	Total	-	246.45	21.82

13.0 MINE CLOSURE PLANNING

Although, the mining activities may last a few decades, but they are liable to leave a long lasting impacts on the landscape, ecology and on local inhabitants. If not properly managed, effects can be detrimental for general welfare of most of the stake holders. Thus, any mining venture must have adequate closure plan, aimed at rehabilitation of disturbed area, which should be acceptable to local community as well as regulatory authority. Mine closure cost on capital head will be around **Rs.267.23**Lakhs for Dhanpuri OC and **Rs.246.45** Lakhs for Amlai OC.

लोक सुनवाई हेतु
चर्चा पुनर्गठन भूमिगत परियोजना
(4.75 मि.टन/वर्ष)
का पर्यावरण प्रभाव आकलन/पर्यावरण प्रबंधन
योजना का
सारांश

**SUMMARY
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