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cmpdi

A Mini Ratna Company

**MINING PLAN & RECLAMATION PLAN
FOR
PURNADIH OPENCAST PROJECT (3.00 MTY)
N. K. AREA
OF
CENTRAL COALFIELDS LIMITED**

**REGIONAL INSTITUTE – III
CENTRAL MINE PLANNING & DESIGN INSTITUTE LTD.
(A Subsidiary of Coal India Ltd.)
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Mining Plan & Reclamation Plan

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BASIC INFORMATION

- | | | | |
|-------|----------------------------------|---|---|
| i. | Name of the Project | : | Purnadih Project |
| ii. | Project Category (New/Expansion) | : | New |
| iii. | Mineable Reserve | : | 57.50 M.T. |
| iv. | Total Over-burden Removal | : | 100.66 M. M ³ |
| v. | Stripping Ratio | : | 1 : 1.75 |
| vi. | (a) Normal capacity of the Mine | : | 3.00 M.T.Y. |
| | (b) Peak capacity of the Mine | : | 3.45 M.T.Y. |
| vii. | Manpower | : | 724 Persons |
| viii. | Life of the Mine | : | 27 Years |
| ix. | Coalfields | : | North Karanpura Coalfields |
| x. | Location | : | Near Khalari,
Dist. Chatra, Jharkhand. |
| xi. | Average Grade of Coal | : | F |
| xii. | Use of coal | : | Thermal Power Stations |

4.0 LOCATION AND ACCESSIBILITY:

- 4.1 Location: Purnadih Block is located in north of Damoder River in the south central part of the North Karanpura Coalfields. It falls in the Chatra District of Jharkhand. It is contiguous to Ashok Block in the North and Damodar River lies south of this block. It is bounded by latitude 23 degree 41 minutes 10 seconds and 23 degree 43 minutes 25 seconds north and longitude 84 degree 58 minutes 10 seconds and 85 degree 01 minutes 11 seconds East. It is covered by the Survey of India Topo Sheet No. 73-E/2 and A/14(RF 1: 50000 and special sheet no. 14 & 15 (RF 1: 10000).

4.2 Communication:

Purnadih Block is approachable by a 15 KM long fair weather Kachha road which is connected to Khalari-Dakra-Tandwa-Hazaribagh and metalled road near Bachra mine. Khalari is located 10 KM South of the Bachra OCP and is connected to Ranchi viz Bijupara village through Ranchi- Daltonganj State Highway No. 48. The distance between Khelari to Ranchi is 65 KMs.

The nearest Railway head is Ray (20km) and Khelari (25km) on Gomoh-Dehri-On-Sone Loop Line of the Eastern Railway.

4.3: Topography:

The Purnadih Block is characterized by more or less flat terrain with gentle undulations. Generally, the ground is sloping towards the Damodar River flowing along the Western and Southern boundary of the Block. The minimum and maximum elevation of the Area is 420 mtrs. and 469 mtrs. respectively.

The drainage of the Block is controlled by the Damodar River flowing along the Western and Southern block boundary. The Dembua Nallah flows North to South in the North-Western part of the property, whereas Henjdagarah Nallah flows roughly NNE-SSW almost through middle of the property. These two Nallahs discharge their load into the Damodar River.

4.4: Present Proposal

Land acquisition for Quarry No. 2 is already acquired where as land acquisition of Quarry No. 1 and Quarry No.3 is in advance stage. All the land has been acquired under CBA Act.

4.5: Present Status of the Project.

Land acquisition of Quarry No. 1 is in advance stage where as land acquisition for quarry No. 3 have already been acquired under CBA Act. Compensation has already been paid.

5.0 Technical Parameter and mining method :

5.1 Mining Technology:

Coal deposits in Purnadih OCP geological block up to base seams lower Dakra, top lower Dakra, Middle and Lower Dakra Bottom are potential seams for Opencast mining both qualitatively and quantitatively. These aspects are taken into account during mine planning and operation in ensuring maximum recovery.

Considering the shallow depth of deposit and gentle gradient Opencast mining using Shovel -Dumper system in combination with blast hole drilling and controlled heavy blasting is the most suitable technology for OB removal at Purnadih OCP and Coal will be produced by Surface Miner considering presence of Coal seams and partings of varying thickness with economy stripping ratio (cum/OB required to be removed to raise 1 Tonne of Coal.) The Coal Production from Opencast method in Indian Mining more than 75% of total Production. This trend is likely to continue in near future. The Opencast mining has been proposed with HEMM equipment of suitable type due to its high recovery rate and better economics.

5.2 Production enhancement:

The mine has been designed to produce at the rate of 3.0 MTY consistent basis through-out life of the mine is mainly based on lay and deposition of Coal seams and intervening parting of the block as estimated in the geological report and the HEMM productivity norms adopted in CIL mines.

Keeping into account the current state of development in technology and attainment of improved skills of operators and maintenance crew, it will be possible for Coal producing company to achieve at about 15% higher Coal Production from the targeted by achieving higher availability and utilization of HEMM.

It is, therefore, Purnadih OCP may produce Coal at the rate of 3.45 MTY in any one or all the year of the life of the mine against nominal mine capacity of 3.0 MTY.

5.3 Technology Upgrade:

Upgrading technology is pre-requisite for more effective use of resources and thus improving environmental performance which becomes all the more important in view of a rapidly growing demand of Coal in our Country. In most cases, newer technologies and processes are both more efficient and less polluting than the technology they replace, allowing increased production using less material and causing less pollution.

Considering, what has been stated in the above paragraph, the proposal and feasibility report suggests flexibility in the implementation stage within the scope of the proposed report to respond to improvement in technology and equipment which would result in improved profitability, productivity and mitigate environmental hazards due to mining.

54 Main Technical decision for the quarry:

It is proposed to mine top lower Dakra , Middle lower Dakra and Bottom lower seams for producing power grade coal. The Grade is varying from G to E. This proposal is based on "GR" on Purnadih Block of North Karanpura Coalfields of CCL.

Targeted capacity of the Mine:

Targeted capacity of the mine will be 3.0 MTY Coal.

Design Criteria:

The following design criteria have been adopted for the mining operation as per prevalent norms of mine design considering in CIL Mine.

- | | | |
|----|-----------------------------|-----------|
| 1. | No. of Annual working days: | 330 days. |
| 2. | No. of shift per day | 3 |
| 3. | Duration of each shift: | 8 hours. |

The Opencast mine will be worked in the above three shifts per day basis and 7 days per week schedule and no. of working days per year are adopted as 330 considering annual public holidays, un-scheduled delays and bad weather effect particularly in rainy season.

Boundary of Mine:

Northern-Boundary: Northern surface boundary has been fixed at a distance of 40 mtrs. from proposed railway siding of Ashok OCP (shown in the Plan)

Eastern Boundary: Eastern surface boundary has been fixed in between Purnadih OCP and Benti Block.

Southern Boundary: The Southern surface boundary has been fixed leaving a barrier of about 60 to 70 Mtr. From the edge of the Damodar River.

Western Boundary: The Western surface boundary has been fixed leaving a barrier of about 60- 70 Mtr. From the edge of the Damodar River.

Geological and Mining Characteristic

Sl No	Particulars	Unit	Quarry No- 1	Quarry No- 2	Quarry No- 3
I	Coal				
A	Seam Thickness	M			
1	Lower Dakra (Top)		3-4	Not present	3
2	Lower Dakra (Middle)		11-16	6-9	3-6
3	Lower Dakra (Bottom)		1	1-1.5	1
B	Dip	Degree	1-2	2	2
C	Avg. Specific Gravity	T/Cum			
1	Lower Dakra (Top)		1.64	1.64	1.64
2	Lower Dakra (Middle)		1.68	1.68	1.68
3	Lower Dakra (Bottom)		1.62	1.62	1.62
D	Excavation Category	Assumed	III	III	III
II	OVERBUURED N				
A	OB/Parting Thickness				
1	Top OB		1.5-19.5	2.5-20.5	6.7-23.0
2	Between LD(Top) & LD(Middle)		5-15	-	8-13
3	Between LD(Middle)- LD(Bottom)		2-4	3-9	14-18
4	OB Volume Weight		2.4	2.4	2.4
5	Excavation Category	Assumed	50% III 50% IV	50% III 50% IV	50% III 50% IV
III	Quarry Parameters				
1	Max. Length of Quarry along strike	KM			
a.	At Surface		2.26	1.42	1.17
b.	At Floor		2.20	1.35	1.07
2	Max. width of Quarry along Dip	KM			
a.	At Surface		1.60	1.49	0.75
b.	At Floor		1.55	1.46	0.70
3	Max. Depth of Quarry	M	50	30	55
4	Area of Excavation	Sq.KM			
a.	At Surface		3.2	1.57	0.90
b.	At Floor		2.91	1.45	0.77

5.5 Mining Method:

Considering the geo-mining condition of (a) Flat gradient of upto 2-3 degree of coal seams (b) limited reserve of 57.5 MT and (c) Occurrence of multiple fan cut faults F-9, F-10, F-12, F-13 & F-14 having a maximum throw of 5m, 5m, 5m, 17m and 10m respectively, following mining system has been proposed for different quarries:

1. Quarry No. 1 : This is the eastern most quarry of Mine having Coal reserve of 41.49 MT with stripping ratio 1.37 M.cum per Tonne. Maximum depth of quarry is 40m only.

2. Quarry No. 2 : This is a central quarry of the mine having Coal reserve of 9.98 MT only with stripping ratio 2.17 M.Cum per tonne. Maximum depth of quarry is around 30m approximately.

3. Quarry No. 3 : This is the Western most quarry of the mine having reserve of 6.03 MT with stripping ratio 3.67 M.Cum per Tonne. Maximum depth of this quarry is 55 M only. This mine will start working from 18th year of quarry operation having same set of HEMM.

4. Shovel- Dumper combination is proposed with drilling and blasting for OB removal and Coal Production proposed by Surface miner.

5. Drilling & Blasting Operation:

RDH Drill of 160mm diameter are envisaged for drilling in overburden and coal benches.

6. Haul Road:

In all the quarries, Haul road has been planned in the gradient of 1:16. As per HEMM proposed in the RPR width of the road has been taken as 20 Meter. A typical cross section of Haul Road is attached showing all the necessary dimensions.

7. Spoil Dump:

The total volume of OB to be removed is estimated as 100.66 M cum. The entire volume will be placed internally excluding sump 7.37 M/cum OB required for the extension of the embankment. The total internal dump area is 4.74 esq.

8. Embankment along Damoder River:

An embankment has been proposed all along the three quarries to avoid submerging of mine from inundation. Highest flood level of Damodar is 428M. Height of proposed Embankment along the mine 433M i.e. 5M above HFL of Damodar River. Top road on embankment is 8 M wide. This Road may be used for HEMM movement. Total length of proposed embankment is 4.4 KM (Approx). Toe of embankment is 15M away from the edge of Damodar River. A cross section of embankment position is attached showing internal dump, river and quarry floor. A cross section of embankment is also attached.

This embankment can accommodate 0.40 M/Cum of OB dump removed from quarry-1 and quarry-2 (Up to 2nd year) of the mine.

9. Diversion of Dembua Nalla.

Dembua Nalla passed through quarry-3. This Nalla must be diverted prior to the opening this quarry. After exploitation of quarry-2 completely it has been proposed to divert this nalla along the floor of quarry-2 to Damodar river. Minor earth cutting is required for this diversion to maintain the water flow of this nalla to Damodar River.

Table No-3.5

YEAR OF MINE OPERATION	Producn. Year	QUARRY-I				QUARRY-II				QUARRY-III				QUARRY-I+QUARRY-II+QUARRY-III			
		COAL		SR		COAL		SR		COAL		SR		COAL		SR	
		MT	MCUM	CUM/T	MT	OB	MCUM	CUM/T	MT	OB	MCUM	CUM/T	MT	OB	MCUM	CUM/T	
		INFRASTRUCTURE DEVELOPMENT															

5-6 Type & Size of Mining Equipment

Sl.no	Particulars	Size	Existing*	Additional Requirement
A	Coal			
1	Diesel Hyd. Shovel	3.8 Cum		Coal Production Outsourced by Surface Miner
2	Rear Dumper	35 T	2	
3	RBH drill	160 mm	1	
4	Surface Miner	Drum with 2200 mm		
5	Dozer with ripper attachment	410 HP		
6	Dozer	410 HP	1	
7	FE Loader	5-6 Cum	1	
B	OB			
1	Elec.Hyd.Shovel	10 Cum		2
2	Elec.Hyd.Shovel	3.8 Cum		1
3	Rear Dumper	100 T		16
4	Rear Dumper	35 T	2	2
5	RBH Drill	160 mm	1	3
6	Dozer	410 HP	1	3
C	Common			
1	Water Sprinkler	28 KL	1	2
2	Wagon Drill (Diesel)	100-200 mm	1	1
3	Mobile Rough Terrain Crane	70 T		1
4	RT Crane	30 T		1
5	Diesel Browser	16 KL		1
6	FE Loader	5-6 Cum	1	1
7	Hyd. Shovel with back hoe	1.2-2 Cum	1	1
8	Fire Tender			1

5.10 GEOLOGY:

The Purnadih Block is situated in south central part of the Karnpura Coalfields in Karkatta-Piparwar anti-incline, the block lies between latitude 23 degree 41 minute 10 second and 23 degree 43 minute 25 second (North) and longitude 84 degree 58 minute 10 seconds and 85 degree 01 minute 11 seconds (East). The Block covered an area of 6.65 Sq. KMs

A total 8532.53 mtrs. were drilled in 152 bore holes in Purnadih Block covering an area of 6.65 sq. KM with average density 23 bore holes per Sq.KM.

Geological structure of the Block:

The Purnadih Block is located in Karkatta Piparwar anticline with almost NE-SW axis is characterised by the rolling dips.

5.7.1 STRIKE

The general trend of the strike of the seams in the North Eastern part is NE- SW strike in the North- Western part the strike swings to East-West in the North-Eastern part. The strike is almost N-S in the southern part.

5.7.2 DIP:

The dip of the formation varies from 1 degree to 5 degree towards North and North-West in the Northern part, in the middle part of the block, the dip is towards West over the larger area the dip varies from 1 degree to 3 degree towards West.

5.7.3 FAULTS:

As many as 15 faults of different magnitudes have been interpreted in Purnadih Block.

5.7.4 SEAM THICKNESS, PARTING:

Seam/Parting	East of Dembua Nalla			West of the Dembua Nalla		
	Min.	Max.	Bore hole intersection	Min.	Max.	Bore hole intersection
Strata above top lower Dakra	4.70 NNKA - 276	19.45 NNKA - 169		6.75 NNKA - 276	29.45 NNKA - 169	
Top lower Dakra	1.34 NNKA - 197	4.97 NNKA - 264	11	1.19 NNKA - 131	3.78 NNKA - 302	
Parting	4.3	15.74		6.89	16.11	
Middle Lower Dakra	6.84 NNKA - 276	16.38 NNKA - 310	30	1.71 NNKA - 276	16.11 NNKA - 302	15
Parting	0	12.24		12.99	18.38	
Bottom Lower Dakra	0.33 NNKA - 276	2.69 NNKA - 187	95	0.60 NNKA - 276	1.63 NNKA - 302	17
Bottom & Middle Lower Dakra	12.89 NNKA - 181	14.6 NNKA - 313	2			
Lower Dakra (Combined)	1.15 NNKA - 189	6.28 NNKA - 20	8			
Parting	85.64	114.17				
+Bachra	1.50 NNKA - 230	2.44 NNKA - 59	4			

3.0 Main facilities

- 1 Housing : 438 houses will be provided at housing satisfaction of 55%.
- 2 Service: Under this broad head come all the buildings such as Workshop & store, Office building community building, Medical facilities, statutory buildings apart from other service required for Industrial town ship.

- 3 Workshop & Store: Purnadih OCP is a new mine of Central Coalfields Limited. This Project report has been prepared for 3.0 MTY. So, a new unit workshop has been proposed. This unit workshop is envisaged to cater the need of daily maintenance, schedule maintenance, lubrication, routine inspections, minor/ medium repair and replacement of parts/ sub assemblies of HEMM such as Dumpers, Dozers, Shovels, and Drills etc. Minor repair of assemblies and sub-assemblies of pumps, CHP equipments, electricals light vehicles etc. deployed in the project will also be performed in this workshop.

A major overhaul of equipment and manufacturing spares on large scale are beyond the scope of this workshop. These works will be carried out in Regional Repair shop or Central workshop, Barkakana. This unit work shop will have two parts, Excavation and E&M workshops. Apart from this, Project store and other common facilities have been provided.

4 POWERSUPPLY:

The Piparwar 33 KV regional switching station is source of Power to all the projects/mines of the NK Area and Piparwar Area. This switching station receives power from the adjacent 2X50 MVA, 132/33 KV sub-station of DVC. There are 5 nos. of outgoing feeder from this switching station. Out of these 5 nos. 2 nos. feed power to Piparwar Project and 2 nos. feed power to KDH old sub-station and KDH new sub-station respectively. The remaining 1 no. feeder feeds power to ASHOK OCP. The Purnadih Project situated near KDH OCP at a distance of 6.0 KM and also 6.0 KM away from Ashok Project. It is proposed to make power available to Purnadih Project by extending the KDH New feeder. The Project will also receive power from 33 KV Ashok OCP feeder by extending the OHTL.

5 ROAD & CULVERT

Proposed road to project: This project is presently connected with existing Ashok Piparwar Road by a Temporary Road. For construction of 7.00 KM long bituminous road provision has been made. In addition to this, another road will be developed which would pass along the side of project up to the existing bridge on River Damodar. This should provide the much needed link with the another existing projects and township located south of Damodar. Costs of an under bridge has also been provided to cross the proposed Ashok Railway Siding.

- 6 Pumping & Drainage: The Proposed RPR of Purnadih OCP has been planned for targeted production of 3.0 MTY. In this proposed Opencast Projects there will be three quarries and the mining of two of the quarries (Quarry1 & Quarry2) will be carried out simultaneously. Quarry 3 has been proposed to be started from 20th year. The planning of dewatering the mine has been done in such a way that the working faces and haul roads in all quarries will remain dry as far as possible. The lay out of each quarry provides suitable gradient along the quarry floors and the benches to facilitate self drainage of water to the sump at the lowest level of the quarry. During the heavy monsoon period, the work in lower most benches may have to be stopped, as it will not be possible to pump out the entire make of water on the wettest day. Therefore, it is proposed to drawn a part of lower most bench which would than act as sump.

Water accumulated in the sump will be pumped out and discharged into the nalla flowing outside the quarry. It is proposed to create a sedimentation lagoon by constructing a series of check dams across the nalla. The lagoon will help to separate suspended solids from the mine water. The water over flowing the check dams would flow through garland drain and finally join near by the River Damodar.

1. Important Parameters

1.1 DETAILS OF RECLAMATION PLAN OF PURNADIH O.C.P

Purnadih OCP is a new mine and expects to produce at the rate of 3.0 MTY as per planned capacity. It will produce 57.50 MTY of coal in 27 years with OB removal of 100.66 M/Cum. The following are the important parameters of the Purnadih OCP 3.0 MTY.

1.1 MINING PARAMITERS

(A) Taget output	3.0 MTY
(B) Total reserve	57.50 MTY
(C)Total OB	100.66 M/C;um.
(D) Life of Mine	27 Year
(E) Stripping Ratio	1.75 Cum/Tonne.

1.2 QUARRY PARAMENTERS

	Quarry-1	Quarry-2	Quarry-3
(A) Dip of seam, degree	1-2	2	2
(B) Strike length (KM)	2.45	1.42	1.17
(C)Max. Depth (M)	50	30	40
(D) Area of Excavation, Ha.	318	123	88

1.3. TOTAL LAND REQUIREMENT.

(a) Quarry	550.89 Ha.
(b) External O.B. Dump	24.20 Ha.
(c) Industrial Area	21.00 Ha.
(d) Embankment	14.39 Ha.
(e) Safety Zone	<u>125.08 Ha.</u>
Total	735.56 Ha.

2. RECLAMINATION SCHEDULE

YEAR	O.B. (M/Cum)	Area of Int. Dump (Ha.)	Area Ext. Dump
1.	6.21		
2.	6.39		
3.	5.97		
4.	5.05		
5.	4.49		
Total up to 5 th year	28.11	139	24
6.	4.49		
7.	4.49		
8.	4.49		
9.	4.13		
10.	4.10		
Total up to 10 th year	21.70	84	Nil
11.	4.10		
12.	4.10		
13.	4.06		
14.	4.06		
15.	3.89		
Total up to 15 th Year	20.21	78	Nil
16.	3.60		
17.	3.29		
18.	2.44		
19.	3.18		
20.	2.8		
Total up to 20 th Year	15.31	67	Nil
21.	3.15		
22.	3.04		
23.	3.15		
Total up to 23 rd Year	9.34	81	Nil
24.	3.16		
25.	2.85		
Total up to 25 th Year	6.01	18	Nil
Total	110.66	467	24
Grand Total	110.66	491	

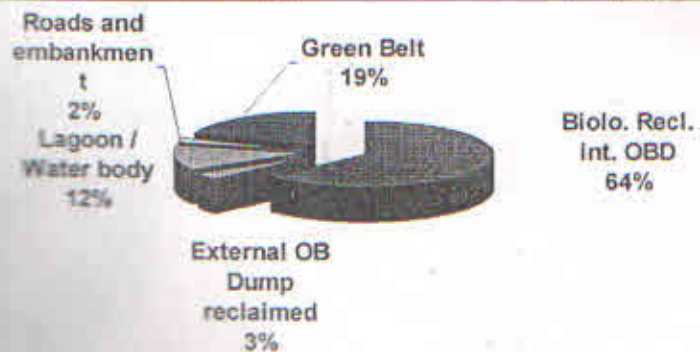
DETAILS OF STAGE RECLAMATION PLAN

SL NO	YEAR	AREA IN Ha	
		External OBD	Internal OBD
1	1-5	24.2	139.0
2	6-10	-	84.0
3	11-15	-	78.0
4	16-20	-	67.0
5	21-23	-	81.0
6	24-25	-	18.0
	TOTAL	24.2	467.0

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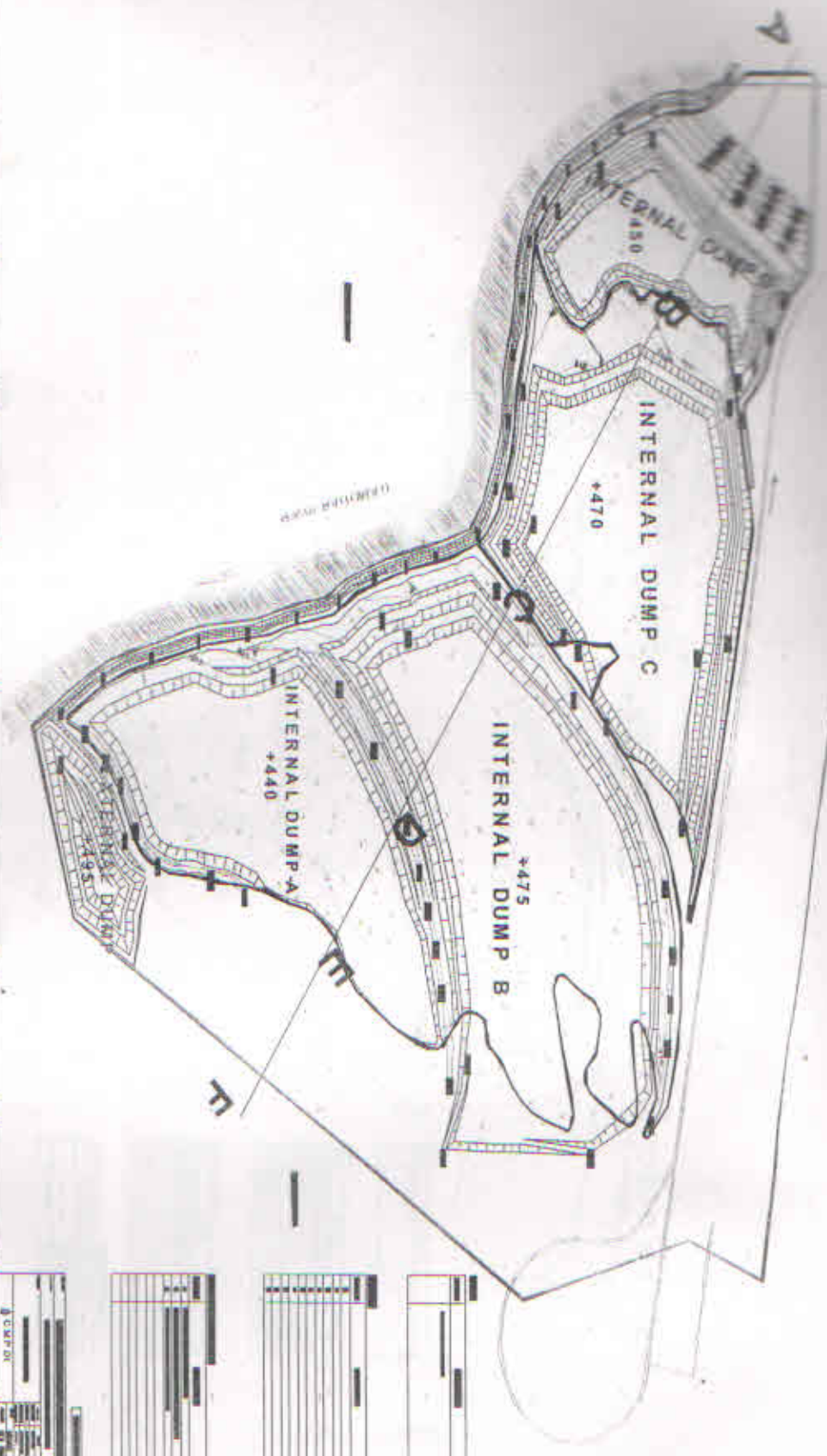
CONCEPTUAL POST-MINING LAND USE

Sl No	Land use Type	Area (Ha)
1	Biologically reclaimed internal dump area	467.00
2	External OB Dump reclaimed	24.20
3	Lagoon / Water body	100.00
4	Roads and embankment	14.00
5	Green Belt	146.54
Total		751.74



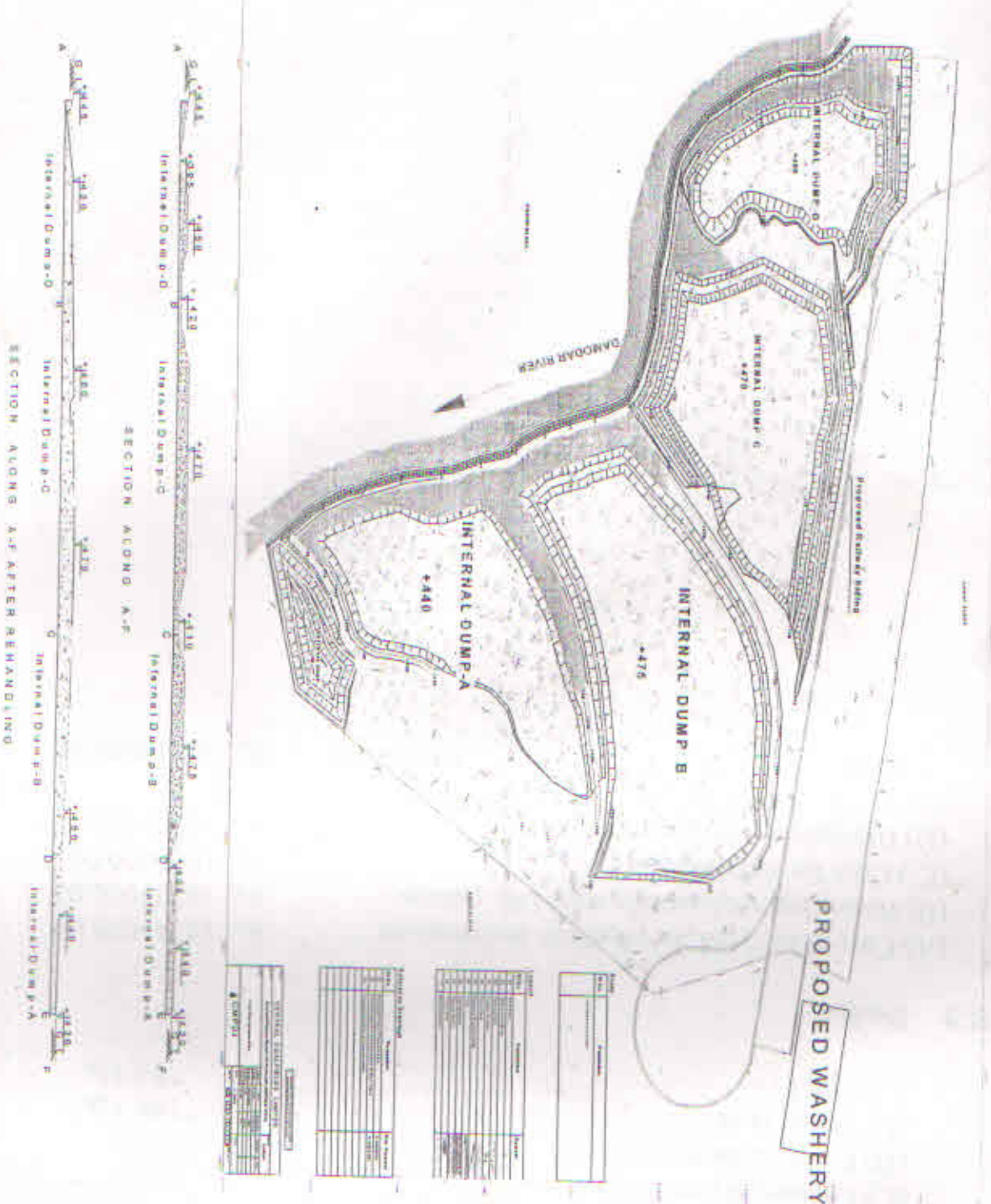
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OB DUMP PLAN



SECTION ALONG A-F

POST MINING LAND USE PLAN



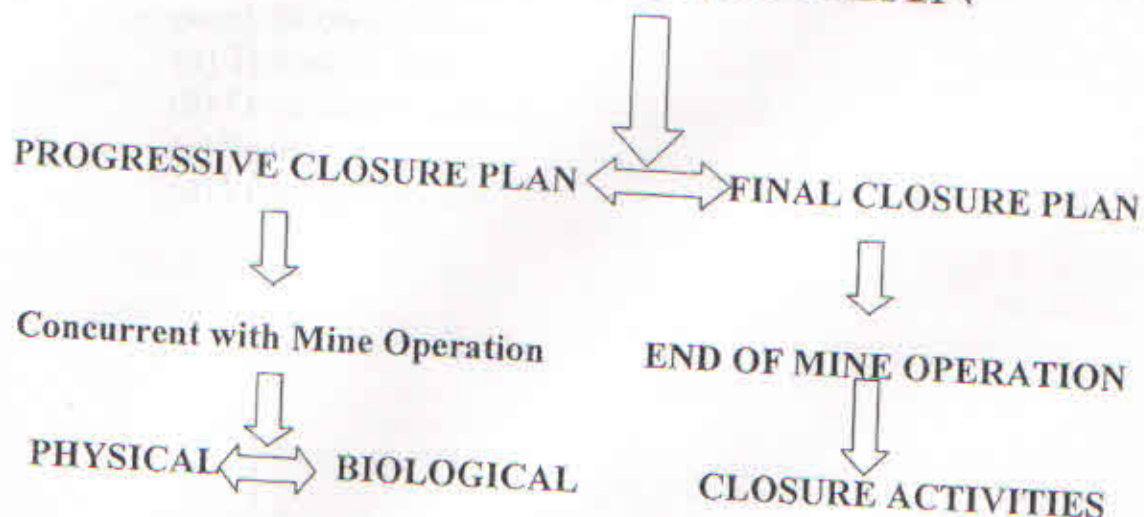
5.2 Conceptual plan for post mining land use of core zone.

(A) Back filled Area (To be biologically reclaimed)	459 Ha.
(B) Reclaimed ext. OB dump.	24 Ha
(C) Lagoon/Water Body	92 Ha
(D) Embankment cum Road	14 Ha
(E) Green Belt	146 Ha.
Total :-	735 Ha.

5.3 Budget.

(A) Cost of HEMM for physical reclamation	Rs. 18245000.00
(B) Biological reclamation over OB dumps	Rs. 10807000.00
(C) Cost for Arboriculture	Rs. 1000000.00
(D) Biological reclamation on dump	Rs. 12361000.00
Total:-	Rs. 42413000.00

MINE CLOSURE PLAN



Physical :- External & Internal OB dump dozed and leveled to a bench slope angle 28°. A layer of top soil is laid over this graded and leveled surface of OB dump.

Biological: Revegetation covers in terms of grass, trees of appropriate species are raised over physically reclaimed OB dump.

Closure Activities : Most of the mined out area shall be reclaimed and balance area shall be converted into water body of very shallow depth after re-grading and filling up the mined out area at the final stage for use of society.

A small team consisting of 2-3 technical people may be required to oversee the efficacy of the closure activities.

A fund shall be judiciously created so that the objective of the final mine closure and progressive closure can be smoothly met.

Mine Closure plan: Mine closure operations is proposed to be undertaken after examination and detailed study that there is no further expansion possibility of the mine and the void is to be suitably filled up so that the land is utilized gain fully by the society. Intermediate stoppage of operations due to any reasons for a period of time, do not come under the proposed scheme of mine closure. This chapter proposes following aspects.

- (a) Technical aspects.
- (b) Environment aspects.
- (c) Social aspects.
- (d) Financial aspects.

Rehabilitation Plan of Purnadih OCP

Purnadih OCP is a new open cast Project (3.0MTY.) mine of NK Area, Central Coalfields Limited. The proposed capacity of mine is 3.0 MTY. The Environment Management plan for this project has been prepared and approved by ministry of Environment and forest, Government of India. The Environment Clearance Certificate of the Project has already been obtained from MOEF GOI Vide letter no. J-11015/36/2007.IA,II(M) Dtd. 19/05/2009. (Copy enclosed)

The total land requirement for Purnadih OCP has been estimated as 735.56 Ha. including colony. Out of which 323.48 hectare is forest land and 412.08 hectare is non-forest land.

Purnadih open cast Project lies in Tandwa Block of Chatra district in Jharkhand. Five villages namely Dembua, Henjda, Kutki, Jhulundia, and Koilara will be affected by this project. This mine is proposed to be worked in three sections namely Quarry-1, Quarry-2 and Quarry-3. It has been proposed to open the mine from Quarry-2. This will affect Dembua village initially. This will involve the rehabilitation of 149 nos. of families. All these 149 families are proposed to be suitably rehabilitated as per modified rehabilitation and resettlement policy of the company. Land compensation has been paid as per the State Government schedule of rate, payment of one time lump-sum compensation at the rate of Rs.100,000/- per families is under process to shift at their own new site in lieu of providing rehabilitation site by the company, as per the option given by the families. Shifting allowance as per the new R&R policy of the company is proposed to be paid in due course at appropriate time, compensation of the tree is also under process for payment. Employment to 116 persons (land losers) as per modified R&R policy of the company has already been provided by the company.

In due course the other villages will also be suitably rehabilitated as per the approved R&R policy and guidelines of the company/State Government as and when required.

The provision has been made in the approved project report of Purnadih OCP rehabilitation of the affected families. It has been proposed to rehabilitate the families at a well developed rehabilitation site created near Jamdih village. The rehabilitation site plan and the township planning has been separately enclosed within this application Annexure L&M.

CHAPTER – VIII

COAL HANDLING PLANT

8.1 Introduction

The P.R. of Purnadih Open cast Project is being prepared for a rated capacity of 3.0 MT of ROM coal / annum. The Coal Handling Plant for this project has been envisaged in Variant –I only to handle total production of coal from this mine.

The coal produced from the mine will be dispatched by tipping trucks to Piparwar washery / nearby washery for washing and onwards dispatch to customers by Indian Railways wagons.

For this size of coal handling plant other supporting infrastructures and suitable repair facilities have also been provided.

The coal handling plant will operate on 3 shifts/day and 7 days per week basis round the year like the mine.

It was decided to utilize the existing assets of Karkatta Project, at this Project. However, three nos. of feeder breaker was utilized by karkatta project which may be required to crush ROM coal of other mines of N.K.Area.

8.2 Location

The plan showing the location of CHP is given in drg. No. R3 / E&M / 002334.

The following factors have been considered in finalizing the location of CHP.

- (a) Mine boundary
- (b) Mine entry
- (c) Topography
- (d) Availability of free space
- (e) Overall economy of the system

8.3 Basic Data

8.3.1	Production capacity of the mine	:	3.0 MTY
8.3.2	No. of working days / Year	:	330
8.3.3	No. of working shifts/day	:	3

8.3.4	No. of effective working hours/shift	5
8.3.5	Feed size of coal in (mm)	(-) 1200
8.3.6	Product size of coal in (mm)	(-) 100
8.3.7	Consumer	Power Station & others
8.3.8	Mode of despatch	By truck to piparwar / near by washery
8.3.9	Loading hours/day	365 days / Round the clock

8.4 System Capacity

System capacity of the CHP has been selected as 3.0 MTY to match with the mine production. The ROM Coal will be hauled to the surface by dumpers of 35 Te capacity. At the surface ROM coal (-) 1200 mm will be crushed to (-) 200 / 250 mm by twin shaft sizer (primary sizer) and it will be further crushed to (-) 100 mm by secondary sizer. The sizers crushing capacity has been selected as 1200 TPH along with conveyor capacity of 1200 TPH. The crushed coal of secondary sizer (-) 100 mm is carried by conveyor of 1200 TPH capacity to 8 X 200 Te capacity overhead truck loading hoppers. Each hopper is fitted with actuator operated motorised gate to facilitate loading of coal into trucks. Coal from the CHP shall be transported to the nearby washery / Piparwar washery from where coal will be despatched to the customer.

8.5 Description of CHP

The CHP will have the following functional units as shown in the key plan of CHP. Please refer drawing no. R3/E&M/002334

- (i) Receiving platform and crushing
- (ii) Conveying System
- (iii) Metal detector/tramp iron removal
- (iv) Loading and Dispatch
- (v) Pollution control and Fire fighting
- (vi) Power supply, control and internal communication

8.5.1 Receiving Platform and Crushing

A receiving platform of suitable size has been planned for the coal handling plant. Rear discharge dumpers to the receiving end of the CHP will carry ROM coal. Normally the size of coal received from the quarry to the receiving hopper will be of (-) 1200 mm size. One heavy duty Primary Sizer and another Secondary Sizer has been provided in the coal handling plant. The ROM coal will be dumped in the hopper of Sizer. The apron feeder of sizer will carry coal from receiving hopper to sizer. The Primary sizer will crush (-) 1200 mm ROM coal to (-) 200/250 mm size and will be fed to the Secondary sizer for crushing it to (-) 100 mm.

8.5.2 Conveying System

A short belt conveyor is provided to carry coal from primary sizer to secondary sizer. Finally, the crushed coal from secondary sizer will be discharged onto the elevating cum tripper conveyor for spreading and storage of coal in overhead hopper. The width & capacity of conveyors have been considered as 1400 mm wide and 1200 TPH capacity respectively.

8.5.3 Metal Detector / Tramp Iron Removal

Provision has been made for metal detector to detect ferrous and non-ferrous material coming from the mine. Provision of an electro- magnetic tramp iron remover has also been made. This will facilitate removal of magnetic materials from the belt conveyor.

8.5.4 Storage & Reclamation

Provision has been made to store crushed coal in overhead hoppers. Above the hopper a tripper has been provided. The elevating cum tripper conveyor will receive crushed coal to store into the overhead hoppers (8X200 T capacity). Provision of ground stock of crushed coal has also been made to store the coal in case the hoppers are filled.

8.5.5 Loading and Despatch

Each opening of the overhead surge hoppers will be fitted with actu operated motorised / hydraulic operated gates, which may be activated loading as and when the tipping truck will be positioned underneath opening. Coal will be loaded into trucks for transport to Piparwar washe other nearby washeries. From there the coal will be dispatched to nea railway siding and loaded into the railway wagons for transportation to customers.

8.5.6 Pollution control and Fire Fighting

Necessary arrangements have been provided for dust suppression and fighting. Dust suppression arrangements has been provided at follow locations:

- a) Receiving platform of Sizer top
- b) Discharge end of Sizer
- c) Loading / transfer points.

Suitable nos. of dry type portable fire fighting equipment has been provide to protect the plant from fire hazard.

8.5.7 Power supply, control and internal communication

All the electrical equipment will be suitable for successful operation at th ambient temperature prevailing at site.

The complete electrical engineering system can be sub-divided into th following:

- (a) Power distribution system with all protections and measuring facilities
- (b) Centralised sequence control, automation, signaling & instrumentation including electric clock system.
- (c) Interlocking
- (d) Emergency stopping
- (e) Motor control center

- (f) Instrumentation
- (g) Telecommunication
- (h) Illumination
- (i) Earthing

8.6 Other Facilities

There will be a control room to control all equipment between Sizer and truck loading hoppers. The control shall be in accordance with pre-determined sequence for starting and stopping. But provision for local control of any equipment has also been provided for emergency purpose.

Two no 50 Te capacity road weighbridges has been envisaged for Weighment of trucks through which coal being dispatched to nearby wahery for washing and onward dispatch to customer. Belt conveyor shall be provided with pull chord switches at intervals of 50m along the length of conveyors for stopping of conveyors from any point in case of emergency.

9.0 Estimated Capital Cost

The estimated capital expenditure for the coal handling plant as envisaged for handling the capacity of 3.0 MTY coal is given in the Appendix: A.3.4.0

CENTRAL COALFIELDS LIMITED
DARBHANGA HOUSE: RANCHI

Sub: Forwarding Minutes of the 348th (No.4 of 2008)
Meeting of the Board of Directors held on
02.07.08.

Extracts from the minutes of the above meeting in respect of following item is appended below:

Item No.4(4): Proposal seeking approval of Project Report of Purnadih OC (Rated Capacity: 3.0 MTY).

After detailed deliberation, the Board approved the Project Report of Purnadih OCP for a rated capacity of 3.0 MTY of coal with Variant III envisaging OB removal by Departmental Shovel-Dumper with Drilling & Blasting and Coal winning outsourced by Surface Miner with initial capital investment of Rs. 210.98 Crore for Variant III includes proposed capital of Rs.15.02 Crore as on 31.03.2007 to be transferred from Karkata OC.

It is requested kindly to take necessary action on the decision, wherever necessary, under intimation to this office.

✓ CGM(P&P)

C.V.N. Gangaram
(C.V.N. Gangaram)
Company Secretary. 19/7/08

U.O.No.CS/BM/348/2008/ 563 Dated: 19.07.2008.

Shri SANWAL, SOM(P&P) — Pl. give copies to CGM(N-K), RD-RJ-III, GM(Projects) etc

[Signature]
21.07.08