C O N T E N T S

1. BASIC INFORMATION

i)	Name of the Project	: **Selected Dhori Group of Mines**
ii)	Total Mineable Reserves	: 58.98 Million Te
iii)	Balance Mineable Reserves	: 7.29 Million Te (on 31.03.2016)
iv)	Total Overburden	: 1.97 Mcum (on 31.03.2016)
v)	Stripping Ratio	: 0.27 cum/te
vi)	Target Capacity of Mine	: 8.25 MTY
vii)	Balance Life	: 3 years (w.e.f 01.04.2016)
viii)	Coalfield	: East Bokaro Coalfield
ix)	Location	: Bokaro District, Jharkhand
x)	Average Grade of Coal	: 'F'
xi)	End Use of Coal	: BTPS Units.

Land use Plan: (Area in Ha)

Sl No	Land Use	Area (in Ha)		
		Forest	Non-Forest	Total
1	Quarry I, II, III	130.89	15.11	146.00
	Central Sector	69.23	0.00	69.23
2	Infrastructure like CHP, W/S, Haul Road, Colony, etc	20.89	0.00	20.89
3	Safety Zone	73.58	5.35	78.93
	Total	294.59	20.46	315.05

CHAPTER- I

1.0 INTRODUCTION

1.1 Location

Selected Dhori block is located in easternmost part of the East Bokaro Coal field. It is bounded by Tisri Nala in the west, river Damodar in the south, Tarmi Colliery in the east and village Gunjardih in the north. It covers an area of about 3 sq.km and falls within latitudes 23^0 45'N to 23^0 48'N and longitudes 86^0 02'E to 85^0 03'E and falls in the Survey of India Toposheet no. 73 I/1.

1.2 Communication

Selected Dhori is well connected by rail and road. The Gomoh-Barkakana loop line of the Eastern Railway passes adjacent to the area. The nearest railway Station 'Phusro' on the Barkakana-Gomoh loop line is about 2 Km to the West of the area.

1.3 Climate & Vegetation

The area witnesses a sub-tropical climate. Heavy rainfall occurs in the months of June to September. The area is thickly forested.

1.4 Present Proposal

The pre-feasibility of Selected Dhori OCP has been prepared for nominal capacity of 8.25 MTY with expected peak capacity to 11.0 MTY in any year or life of the mine.

1.5 Mining Technology:

Conservation of coal enjoins maximum recovery of in-situ reserves of coal and its proper utilization.

Coal deposits in Selected Dhori block in East Bokaro Coalfield upto seam X 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.

Opencast mining using shovel - dumper system in combination with blast hole drilling and controlled heavy blasting is the most suitable technology for coal production and overburden removal at Selected Dhori Opencast considering presence of coal seams and partings of varying thickness with economic stripping ratio (cum of overburden required to be removed to raise one tonne of coal).

1.6 Productivity enhancement:

The mine has been designed to produce at the rate of 8.25MTY on consistent basis through out life of the mine. The design of the mine is mainly based on lay & deposition of coal seams and intervening partings 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 higher coal production from the target by achieving higher availability and utilization of HEMM.
Therefore, Selected Dhori OCP may produce coal at the rate of 11.0 MTY in any one or all the year of the life of the mine against targeted production of 8.25 MTY.

1.7 Technology Upgrade:

Upgrading technology is a prerequisite 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 proposed pre feasibility report suggests flexibility in the implementation stage within the scope of the proposed

report to respond to improvements in technology and equipment, which would result in improved profitability, productivity and mitigate environmental hazards due to mining.

CHAPTER-II

GEOLOGY

2.0 Introduction

The basic geological information given in this report is based on the **"'Geological Report on Exploration carried out in Selected Dhori Block, East Bokaro Coalfield**", prepared in May, 1977 by CCL. Selected Dhori block falls in the easternmost part of the East Bokaro Coal field. The Karo group of seams (VI to X) are available in this block.

2.1 Geological Structure

The Selected Dhori block forms a part of the northern limb of the East-West elongated synclinal sub-basin of the East Bokaro coalfield. The Barakar beds strike east-west and dip in southerly direction at angles varying in amount from 7º to 12º. The area has been traversed by 12 faults (three distinct set of faults) of varying magnitude and trend.

2.2 Sequence of Coal Seams in Selected Dhori Block

Seam / Parting	Thickness (m)		No of Boreholes considered
	Minimum	Maximum	
Combined Karo group of seams (X-VI)	57.33	69.28	12
Parting	24.50	27.10	
Seam-V	2.92	4.93	11
Parting	5.34	14.15	
Seam-IV	0.18	1.15	4
Parting	4.40	5.10	
Seam-III	3.25	7.66	4
Seam / Parting	**Thickness (m)**		**No of Boreholes**

	Minimum	Maximum	considered
Parting	4.40	8.60	
Seam-II	0.17	1.25	4
Parting	4.00	5.00	
Seam-I	0.30	0.40	2

2.3 Reserves

The details of the reserves are given in table below: -

Sector wise coal reserves

in Selected Dhori block

Sector	**Area (in sq m)**	**Sp Gr**	**Gross Reserve (in MT)**	**Net reserves** (after 10% deduction) **(in MT)**
SECTOR - I	574880	1.66	36.44	32.79
SECTOR – II	221768	1.67	14.75	13.27
SECTOR – III	575264	1.67	38.04	32.24
SECTOR – IV	370720	1.67	22.84	20.56
TOTAL	1742632		112.07	98.86

CHAPTER III

3.0 MINING:

3.1 Brief History

The approved Project Report for Selected Dhori OCP proposed to mine Sectors I, II and IV having a net coal reserve of 58.98 M.tes of coal at a stripping ratio of 0.60 Cum/te. The Central Sector (Sector-III) was left out of the Feasibility Report of Selected Dhori OCP due to the presence of active fire in the western side. It was envisaged that while working sector-I & II, the investigation regarding fire in the central sector would be continued and thereafter, the reserves of central sector may be mined to the extent possible.

The existing Selected Dhori OCP presently working in sector-I(Kalyani OCP) and in sector-IV(SDQ-3) is nearly exhausted. Therefore, the fire in central sector (sector-III) has to be dealt with, so that the reserves blocked in this sector may be mined.

3.2 Mining Reserves – Volume of OBR – Stripping Ratio

The mineable reserves have been estimated from the isochore plans of the different seams. A geological loss of 10% and a mining loss of 10% have been considered in the estimation of the mineable reserves of the seams.

The total volume of OBR has been estimated from the total iso-excavation plan. The parting wise volume of OBR has been estimated from the cross-sections.

Mineable Reserve

Sl. No.	Particulars	Mineable Reserve (MT)
A	Mineable reserves	7.29
B	Total Volume of Partings/OB	1.97
C	Average Stripping Ratio	0.27

3.3 Mining System

Considering the mining characteristics of the mining block i.e.

(a) Thick Karo group of seams VI to X with an average full thickness of 57-66m.

(b) Persistent parting of about 2m (between middle & top section),

(c) Hilly terrain with RL ranging from 213 to 326m.

(d) OB thickness varying from 6 to about 60 m and

(e) Maximum lift for coal being 67m in Quarry No. I,

Shovel dumper combination has been adopted for the OCP.

3.4 Coal Winning and O.B. Removal

OB Removal

To remove the overburden, one 5.0 cum electric rope shovel with 60T Rear Dumpers have been proposed.

Coal Winning

4.5-5.5 cum electric hydraulic shovel with 60T Rear Dumpers have been proposed for mining of 8.25 MTY of coal.

3.5 HEMM for Coal & OB Production:

Sl No	Particulars	Size/Capacity
1	Electric Shovel	5 cum
2	Electric Hyd. Shovel/Back-hoe	4.5-5.5 cum
3	Tractor shovel/ FE Loader	5-7 cum
4	Rear Dumper	60T
5	RBH Electric Drill	160 mm dia
6	Dozer	410 HP
7	Mobile Crane	50T
8	Motor Grader	110HP
9	Wagon Drills (track mounted)	100mm

3.6 Calendar Programme of Excavation

The mineable reserve for Selected Dhori Group of Mines including Central Sector has been estimated as 7.29 MT with an estimated volume of OB as 1.97 M m^3 at an average stripping ratio of 0.27 m^3/T. The summarized calendar programme for all the three quarries are given below:

Year	Coal	OB	S.R.
1	3.5	0.95	0.27
2	2.5	0.68	0.27
3	1.29	0.35	0.27
TOTAL	**7.29**	**1.97**	**0.27**

3.7 O.B Dumps

The total volume of O.B to be removed is estimated at 1.97 M.cum. The entire OB is proposed to be dumped as internal dump in the existing void of Quarry-I & III of Selected Dhori OCP.

CHAPTER IV

4. Main Facilities:

4.1. Housing:

4.1.1 RESIDENTIAL BUILDINGS – No additional provision for construction of quarters has been made.

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4.1.2 SERVICE BUILDINGS: No new provision has been made for construction of office, store, workshop, substation, statutory welfare & community buildings.

4.2 Service:

4.2.1 Workshop & Store:

Additional provision for workshop, store etc. has not been made as the balance coal is proposed to be outsourced.

4.2.2 Power Supply:

Central Coalfields Ltd. has one regional sub-station at Kargali, where power is received at 33kV from DVC's Bokaro Thermal Power Station and stepped down to 11kV and 3.3kV and distributed to various projects. It is proposed that Selected Dhori OCP will receive power from Kargali Regional sub-station. A 11kV feeder of approx. 7.5 km length with "DOG" ACSR conductor is utilized to feed the Selected Dhori OC Project. A provision for extension of this overhead line (with "DOG" ACSR conductor for about 5km has been made. One main sub-station (3x3.15 MVA, 11/6.6 kV) is proposed. Power shall be distributed from this sub-station to various additional electrical equipment and load points.

Estimated maximum power demand for this project will be 3.20 MVA. The annual energy consumption will be 8.643 million units. Quarry/haul road/mine area lighting will be done by 250W/400W HPMV Lamps mounted on poles. Township/workshop would continue to receive power from the existing power supply network.

4.2.3 Road & Culverts:

No additional provision for roads and culverts has been proposed.

4.2.4 Water Supply & Sewerage:

The potable and industrial water requirement for the project has been assessed up to target year as follows:

Portable Water Demand : 1971 KLD

Industrial Water Demand : 870 KLD

Provision for water supply and industrial sewerage has been made.

4.2.5 Railway Siding:

Coal will be dispatched to nearby railway yard on the western bank of Tisri Nala for evacuation.

4.2.6 Coal Handling Plant: A CHP has been envisaged to handle total production of coal from the mine.

(a) Feed Size in mm : (-) 1200

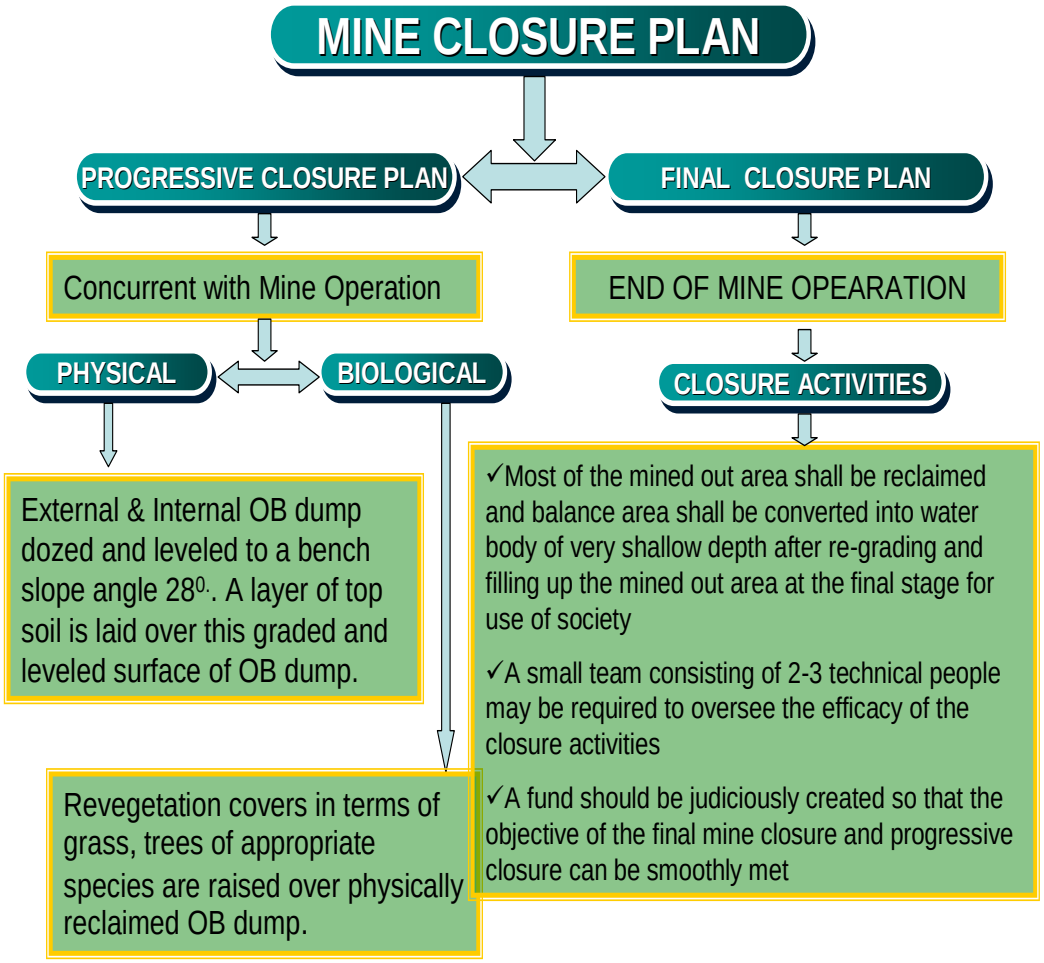
(b) Roduct size in mm : (-) 200

(c) Mode of Dispatch : By railway to BTPS,

(d) System Capacity: 2.25MTY (with 330 working days per year).

The balance coal will be crushed by feeder breakers at nearby Tarmi siding.

The approximate cost of environmental protection measures will be about Rs. 15 per tonne of coal.


MINE CLOSURE PLAN
PROGRESSIVE CLOSURE PLAN
FINAL CLOSURE PLAN
Concurrent with Mine Operation
END OF MINE OPEARATION
PHYSICAL
BIOLOGICAL
CLOSURE ACTIVITIES
External & Internal OB dump dozed and leveled to a bench slope angle 28⁰. A layer of top soil is laid over this graded and leveled surface of OB dump.
✓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 should be judiciously created so that the objective of the final mine closure and progressive closure can be smoothly met
Revegetation covers in terms of grass, trees of appropriate species are raised over physically reclaimed OB dump.