
Revised Mine Plan including Mine Closure Plan (as per latest guidelines of Ministry of Coal)

MINING PLAN
(including Mine Closure Plan)
(First Modification)
FOR
BLOCK-B OCP

(Coal Production Capacity of 10.00 Mtpa with 2000m³/Day Overburden Processing Plant to generate Manufactured Sand in Project Area of 1756.77Ha.)

(Project Area ~ 1756.77 Ha)

Singrauli Coalfield, Singrauli District,
Madhya Pradesh State

(In line with the Guidelines of MoC
vide dated 29-05-2020 & 09-09-2020)

FEBRUARY – 2023



Northern Coalfields Limited

PO- Singrauli, Dist- Singrauli, State -MP - 486889

Prepared by: CMPDI, RI-VI, PO - Ja yant Colliery,
Dist - Singr auli (MP) 486890

नॉर्थ कोयलीनट्रक
(एक लिमिटेड कंपनी)
(भारत सरकार के अधीन है)



(A Marketing Company)
(A Subsidiary of Coal India Limited)



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ब्लॉक-बी, गोरबि, पो. गोरबी, डिस्ट-सिंगरौली (म.प्र.)-486892/ Block-B Project, Post-Gorbi, Distt-Singrauli (M.P.) PIN 486892

Phone: 07805-256092, (FAX) 256092 email: gmcblb@gmail.com website: www.nclil.in

In view of the above, you are hereby requested for giving permission for selling of M-Sand obtained through processing of Overburden materials generated from Block-B Project.

Encl: - 1. As above

2. Revenue plan showing location of the site earmarked for OB to sand plant installation.

Yours faithfully,

24.1.23

General Manager
Block-B Area

Copy for kind information to:

1. Director (Tech/Opm.), NCL HQ
2. Director (Tech/P&P), NCL HQ
3. General Manager (Min)/TS to CMD, NCL HQ
4. General Manager (R&D/NI), NCL HQ

Mass balance of Coal production, OB excavation & generation of Manufactured Sand (Peak excavation per year) year wise during the balance period of mine.

Block-B Opencast Project is operating since 23.03.2007. PR prepared for a production capacity of 3.50 Mtpa has been approved by the Govt. of India vide letter No.43011-16-2003-CPMA, dated 7th July, 2006. Latest EC has been obtained vide letter No. No. J-11015/80/2013-IA.II (M), dated 06.08.2014 with a production capacity of 5.47 Mtpa in an area of 1339.00 ha.

Expansion Project Report (EPR) has been prepared for normative capacity of 8.00 Mtpa and peak capacity of 10.0 Mtpa in order to meet the demand of power grade coal by NCL.

The EPR has been approved by CIL Board in 387th meeting on 22.07.2019 for an additional capital investment of 998.71 crores with Option-II i.e. total Coal departmental and total OB Outsourcing.

Balance life of the mine as on 01.04.2022: 13 years i.e. upto FY 2034-35.

The Mass Balance study of Coal Production, OB Excavation & generation of Manufactured Sand (Peak excavation per year) year wise during the balance period of mine for Block-B OCP is given below:

Consideration as per the EC / Mining Plan for mass balance/ material balance study:

- Coal mined out in a year (Peak during life of the mining activities) = 10 Million Tonne / 6.45 Million cubic meters.
- OB removed in a year (Peak during life of the mining activities) = 86.03 Million Tonne/ 49.38 Million cubic meters.
- Total Mass (Peak material handling during the life of mine) = 87.11 Million Tonne / 50 Million cubic meters (Approx.) in a year.

Based on Proposed EC scenario and proposed amendment in EC for generation of manufactured sand from overburden processing plant scenario, the mass balance study has been carried out (considering the balance life of 13 years from FY- 2022-2023).

Year wise mass/ material balance: For Production

Year	Peak Coal production as per proposed Mining Plan		Waste/ By Product		Total (Mm ³)	Peak (Coal + OB Volume in Mm ³)
	(MT)	(Mm ³) (P=1.55 Kg/m ³)	OB Removal (Mm ³) as per proposed Mining Plan	Generation of Manufactured Sand (Mm ³) from OB as per proposed amendment	As per proposed amendment	
2022-23	5.47	3.53	32.09	-	32.09	35.62
2023-24	8.00	5.16	40	-	40.00	45.16
2024-25	10.00	6.45	49.84	0.16	50.00	56.45
2025-26	10.00	6.45	49.69	0.31	50.00	56.45
2026-27	10.00	6.45	49.38	0.62	50.00	56.45
2027-28	10.00	6.45	49.38	0.62	50.00	56.45
2028-29	10.00	6.45	49.38	0.62	50.00	56.45
2029-30	10.00	6.45	49.38	0.62	50.00	56.45
2030-31	10.00	6.45	49.38	0.62	50.00	56.45
2031-32	10.00	6.45	44.44	0.62	45.06	51.51
2032-33	9.00	5.81	35.38	0.62	36.00	41.81
2033-34	8.00	5.16	27.38	0.62	28.00	33.16
2034-35	5.72	3.69	14.2	0.62	14.82	18.51
Total	116.19	74.96	539.92	6.05	545.97	620.93

From the above, it is clear that the total mass balance will remain the same with the proposed amendment so far as total material handling is concerned i.e. Coal + OB + Generation of Manufactured sand from overburden.

In other words, the total mass being handled within Proposed EC (10 Mtpa Coal production with corresponding removal of overburden) will remain the same with proposed addition of generation of manufactured sand from the excavated overburden @ 2000 cubic metre per day concurrently with the coal production at the rate of already Proposed EC capacity.

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Singrauli Coalfield, Singrauli District,
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(In line with the Guidelines of MoC
vide dated 29-05-2020 & 09-09-2020)

February – 2023



Prepared by: CMPDI, RI-VI, PO- Ja yant Colliery,
Dist - Singr auli (MP) 486890

INDEX OF CHAPTERS OF THE MINING PLAN (INCLUDING MINE CLOSURE PLAN)

INDEX

Sl No.	Chapters	Page No.
	MINING PLAN	
1	Checklist (NCL)	
2	Justification for Revision of Mining Plan(NCL)	i-v
3	Chapter 1- Project Information	1-18
4	Chapter 2-Exploration, Geology, Seam Sequence, Coal Quality and Reserve	19 -32
5	Chapter 3-Mining	33-37
6	Chapter 4-Safety Management	38-52
7	Chapter 5-Infrastructure Facilities proposed and their Location	53-55
8	Chapter 6-Land Requirement	56-58
9	Chapter 7-Environment Management	59
10	Chapter 8-Progressive & Final Mine Closure Plan	60-65
11	Plates	66-80
12	Annexures	81-106

LIST OF PLATES (AS APPLICABLE AS PER GUIDELINES DATED 09-09-2020)

LIST OF PLATES

Sl. No.	Plan	Drawing No.	Page No.
1	Location Plan	Plate-01	66
2	Plan showing satellite Image of Block-B OCP	Plate-02	67
3	Geological and Surface Plan	Plate-03	68
4	Plan showing leasehold boundary and details of land	Plate-04	69
5	Plan showing the Floor contour, iso-chore and isograde line of turra seam	Plate-05	70
6	Plan showing the Floor contour, iso-chore and isograde line of purewa merged seam	Plate-06	71
7	Plan showing existing mine working as on 01.04.2022	Plate-07	72
8	Plan showing quarry cross-section	Plate-08	73
9	Final stage dump plan	Plate-09	74
10	Plan showing first year stage plan	Plate-10	75
11	Plan showing third year stage plan	Plate-11	76
12	Plan showing fifth year stage plan	Plate-12	77
13	Post mining landuse plan	Plate-13	78
14	Plan showing post mining dump profile	Plate-14	79
15	Plan showing proposed OB to Sand Segregation plant	Plate-15	80

LIST OF ANNEXURES
(AS APPLICABLE AS PER GUIDELINES DATED 09-09-2020)

S.N.	Name of Annexure	Page no.
I	Plan/chart showing schedule of Implementati on of Mine closure activities (progressive and final closure) with duration of important activities	81
II	Environment clearance	82-90
III (A)	Google Earth Image (KML of the Project Boundry)	91
III (B)	Leasehold Boundary of BlockB OCP showing Cardinal-Points	92
IV	Letter of rejection for diversion of 631.39 ha (instead of 622.783 ha) forest land by EAC, MoEF&CC	93
V	Approving Authority for mining plan for projects of CIL and its subsidiary companies reg.	94
VI	Guidelines for Preparation, Formulation, Submission, Processing, Scrutiny, Approval and Revision of Mining plan for the coal and lignite blocks	95-104
VII	Land details as given by Block-B OCP	105-106

CHECK LIST

Details		(✓ /x)
	Expert-review Report	
Chapter -1	Project Information	✓
Chapter -2	Exploration, Geology, Seam Sequence, Coal Quality and Reserve	✓
Chapter -3	Mining	✓
Chapter -4	Safety Management	✓
Chapter -5	Infrastructure Facilities proposed and their Location	✓
Chapter -6	Land Requirement	✓
Chapter -7	Environment Management	✓
Chapter -8	Progressive & Final Mine Closure Plan	✓
	Annexures and Plates	✓

Justification for Revision of Mining Plan (including Mine Closure Plan) for inclusion of Overburden Processing Plant to generate Manufactured Sand

The Project Report for Block-B OCP (3.50 Mtpa) was prepared and approved by the Govt. of India vide letter No.43011-16-2003-CPMA, dated 7th July, 2006. PR of Block-B (3.5 Mtpa) has been completed on 18.12.2015 for a capital of Rs.550.32 crores.

The project has Environmental Clearance for capacity of 5.47 Mtpa in project area of 1339 Ha by MoEF&CC vide letter No. J-11015/80/2013-IA.II (M), dated 06.08.2014.

Subsequently, Expansion Project Report (EPR) has been prepared for normative capacity of 8.00 Mtpa and peak capacity of 10.0 Mtpa in order to meet the demand of power grade coal by NCL.

The expansion project involved diversion of 631.39 Ha of forest land (71.976 Ha for mining and 559.416 Ha for OB dumping). However, the proposal of diversion of 631.39 Ha of forest land required for the expansion of the project from 5.47 Mtpa to 10.00 Mtpa was rejected by FAC of MoEF&CC vide letter no. File No.8-08/2021-FC dated 29.06.2022 citing, "The proposal was examined in detail and it has been observed that the proposal in its present form is not site specific as more than 78% of the forest area is proposed for dumping the overburden, which can be done over non-forest land. Keeping this in view the above proposal for diversion of forest land stands rejected."

Therefore, a revised Mining Plan of Block-B OCP (10 Mtpa) is prepared considering the restriction on use of forest land for OB dumping by increasing the dump height from 90m to 120m and flushing the internal and external OB dumps in Vindhya I & II quarry so that bare minimum forest land i.e., 139.86 ha (45.86 Ha for excavation and 94 Ha for OB dumping) is required for the expansion project.

Subsequently, as per directives of Ministry of Mines (Sand Mining Framework, 2016) and Ministry of Coal, new initiative for conservation of minerals and to reduce environmental impacts on river ecosystem, production of manufactured sand from the overburden materials at Block-B Opencast Coal mine has been proposed. This sand generated from overburden processing will be an initiative for converting waste to useful resources. For

this an overburden processing plant for generation of manufactured sand with capacity of 2000 m³/day is proposed to be installed within present project area of Block-B OCP.

For installation & commissioning of plant for sand segregation from overburden material excavated from revenue land at Block-B OCP along with regular coal mining operations with 10 Mtpa production in same project area of 1756.77Ha; amendment in proposed EC has to be obtained from MoEF&CC.

Accordingly revised Mining Plan (including Mine Closure Plan) has been prepared for inclusion of overburden processing plant for generation of manufactured sand along with coal mining operations.

BRIEF ON OVERBURDEN PROCESSING FOR GENERATION OF MANUFACTURED SAND :

Sand is formed by natural erosion processes over thousands of years. Sand and gravel are mined out worldwide and account for the largest volume of solid materials extracted globally.

These are being extracted at a greater rate than their natural formation rate. Use of sand and gravel in colossal quantities in construction activities, increases dependence on these materials. Ensuring their availability is vital for infrastructure development. Excessive removal of sand from river bed has adverse impacts on river, delta, coastal and marine ecosystem and may significantly distort the natural equilibrium of a stream. Major impacts are evident like loss of land through river/ coastal erosion, lowering of water table and decrease in the amount of sediment supply. Sand mining from rivers can also damage private and public properties as well as aquatic habitats. Thus extraction has to be regulated and required environmental safeguards during sand mining are to be ensured.

Use of manufactured sand, artificial sand and alternative technologies in construction materials and processes have to be encouraged for reducing the dependence on naturally occurring sand and gravel.

The excavated overburden material from revenue land at Block-B OC is dumped at earmarked sites in external and internal dump. The overburden materials generated from coal mine of this region consists mainly of alluvial soil, hard rocks viz. Sandstone, shale & their intercalations. Sandstone is the main constituent of overburden material.

Sandstone is the rock formed by cementing of sands composed largely of quartz and silicate minerals. Preliminary investigation report suggests 70-80% sand (as per IS-383 (2016)) concentration in overburden material of Block- B OCP.

This sand if extracted from overburden materials can be alternative to river sand and be utilized as construction material grade sand and in other geotechnical applications. Use of this manufactured sand will help in reducing environmental impacts on the river ecosystem. This Manufactured sand can be made available in all seasons and cost will also be cheaper than river sand. Sand segregation from overburden material in open cast coal mines of NCL will be an important step in this direction. Segregation of sand from overburden material can be achieved along with regular coal mining operations in accordance to permission to be obtained from Regulatory Authorities.

Accordingly, it is proposed for generation of manufactured sand by processing of overburden material excavated from revenue land, which is abundantly available at Block-B OCP.

In view of above, a revised Mining Plan (including Mine Closure Plan) to include overburden processing plant to generate manufactured sand along with coal mining operations has been prepared. It will help in conservation of minerals and reduce environmental impact on river ecosystem by minimizing the foot prints and dependency on river sand.

Mitigative measures for pollution control will be taken for both the coal mining operations and Sand segregation plant.

Sl. No.	Source of Air Pollution	Control Measures
1	Crushing	Fully covered crusher, chances for leakage will be almost negligible.
2	Vibrating Screen	Will be Covered externally to reduce the air borne dust.
3	Loading	Segregated sand after washing in the hydrocyclone will become wet.
4	Transportation	Wet segregated sand will be transported via tarpaulin covered trucks

Sl. No.	Source of Water Pollution	Control Measures
1	Hydrocyclone (washing of sand)	Treated water from ETP situated at Block-B Project will be used in the hydrocyclone to separate clay and silt from the OB. The water with clay and silt will be transferred into the thickener which will separate 90% of the total input water for reuse, whereas the balance 10% water with clay will be discharged through pipeline in clay pond for settling. The Clay pond is left for drying. The water left out after evaporation in clay pond will be reused for various purposes in plant. Thus Zero water discharge will be there.

Exercise on mass balance considering the Sand Segregation alongwith normal mining activity as per proposed EC has been carried out and enclosed as Annexure-II of this Mining Plan. As per the exercise the total production/Material handling (Coal+OB+Sand in Million Cubic Meter) has been contained within the existing EC capacity of 5.47 Mtpa and proposed EC capacity of 10 Mtpa.

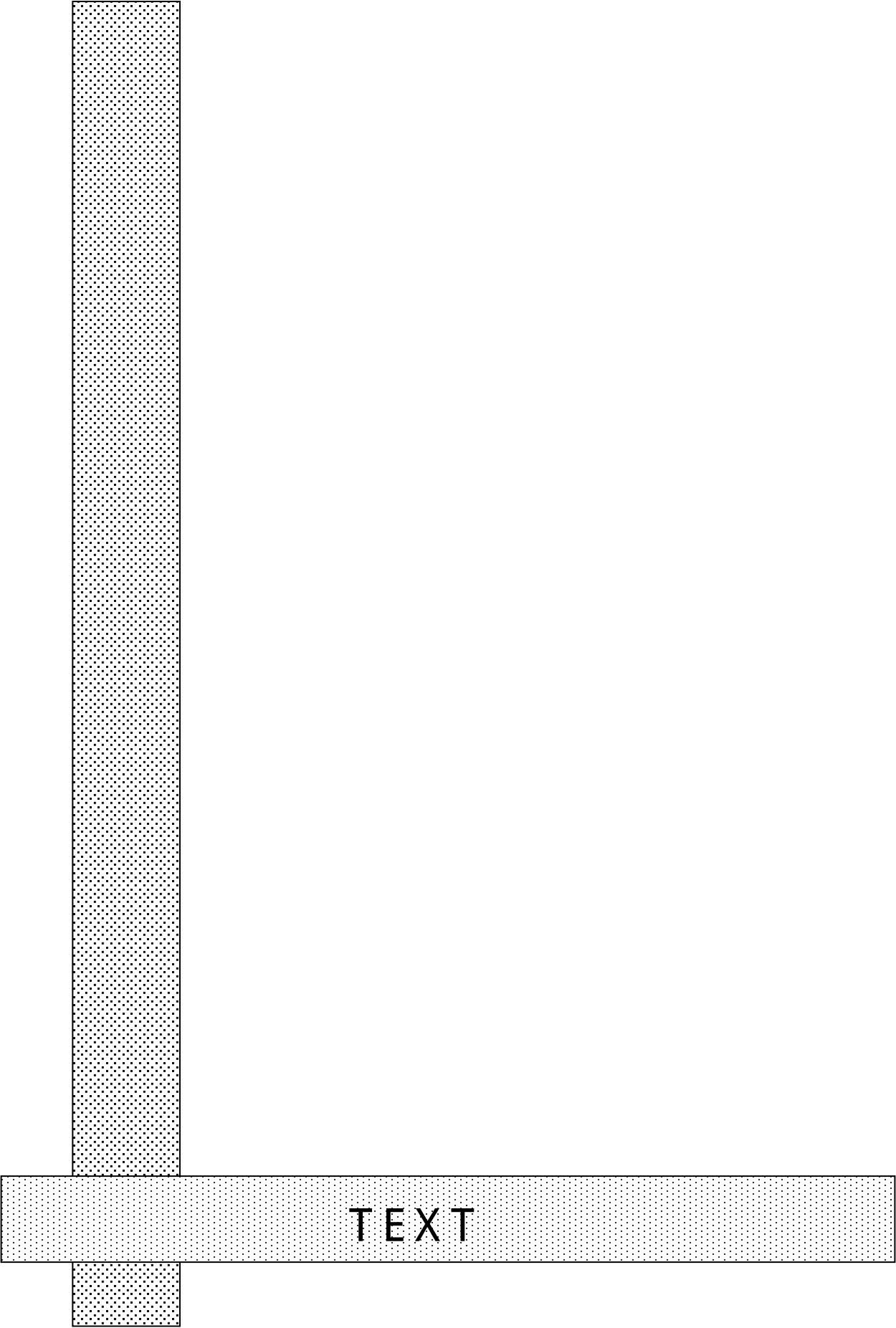
MERITS OF THE PROPOSAL :

The sand segregation plant is proposed to be commissioned within same project area of 1756.77Ha as per Proposed EC along with regular coal mining operations with production capacity of 10 Mtpa. It will have following benefits:

- (i) Degradation of land can be minimized.
- (ii) Generation of indirect employment from operation of overburden processing plant.
- (iii) Reduce the dependency and demand on naturally occurring sand for construction works to a great extent. It will help in conservation of river ecosystem.
- (iv) Availability of sand in all seasons. Uninterrupted supply of sand without any seasonal affect throughout the year.
- (v) Cost of sand will be substantially cheaper than river sand.
- (vi) Conversion of waste (OB material) to useful resource.
- (vii) Revenue generation through selling of sand segregated from overburden (Waste) materials as Business Diversification plan for the company.

Conclusi on:

Revised Mining Plan (including Mine Closure Plan) has been prepared as per the latest guidelines of Ministry of Coal dated 29.05.2020 & 09.09.2020 for approval of NCL Board. It has been revised for inclusion of Sand Segregation Plant with capacity of 2000 m³/ day along with regular coal mining operations with proposed production capacity of 10 Mtpa within project area of 1756.77Ha as proposed EC. After approval of NCL Board, application for obtaining amendment in EC to MoEF&CC will be done.



CHAPTER 1

PROJECT INFORMATION

Note: Prepared based on the Recast EPR of Block -B OCP (8 Mtpa) with Normative production capacity of 8 Mtpa, Peak capacity 10 M tpa approved by CIL Board in 387th meeting on 22.07.2019 for an additional capital investment of ₹ 998.71 crores with Option- II i.e. total Coal departmental and total OB outsourcing .

	<i>Parameters</i>	<i>Details</i>
1.1	INTRODUCTION	
1.1.1	Name of Coal / Lignite Block	Block-B Geological Block and part of Block-B Extension Block
1.1.2	Name of the Coalfield/ Lignite Field	Singrauli Coalfields, Moher Sub-Basin
1.1.3	Base date of Mining Plan/ Mine Closure Plan	01.04.2022
1.1.4	Linked End Use Plant	<p>The Recast EPR of Block-B OCP will have linkage with Kota & Suratgarh TPS of RRVUNL and Obra TPS of UPRVUNL. It will also serve as a Basket Linkage to meet the overall demand of coal on NCL including availabilityof coal for e-auction.</p> <p>The sand segregated from the OB will be supplied to Govt. Agencies / Private construction organisations.</p>
1.1.5	Distance of End use plant from the pit head of the project in “km”	<p>Kota and Sutagarh TPS of RRVUNL and OBRA TPS of UPRUVNL. It will also serve as basket linkage to meet overall demand of coal from NCL.</p> <p>The sand segregated from the OB will be supplied to Govt. Agencies / Private construction organisations.</p>

	Parameters	Details
		Sand Segregation from the OB dumps has been proposed of Rs.59.2505 Crores approximately.
1.1.6	Mode of Coal Transport	Coal by Rail. Sand to be transported by Road.
1.2	LOCATION, TOPOGRAPHY AND & COMMUNICATION	
1.2.1	Location of coal deposit (District and State)	<p>District-Singrauli, State-Madhya Pradesh</p> <p>The Expansion of Block-B OCP comprising of two geological blocks namely Block-B Block and Block-B Extension Block, lies in the north-western part of the Moher sub-basin of Singrauli Coalfield.</p> <p>Latitude: 24⁰8' 59.72"N to 24⁰12' 35.31"N</p> <p>Longitude: 82⁰31' 48.19"E to 82⁰ 36' 0.12"E</p> <p>Area is covered under survey of India topo-sheet No.63/L/12 Sheet No.-2 & 4.</p> <p>The sand segregation plant will be installed within the project boundary in an area of 4 Ha.</p>
1.2.2	Communication: PWD roads, railway lines, Air	<p>The project area is well connected with road and rail. The Project office situated near the northern boundary of the block is on Ranchi-Rewa National highway (NH-75E) and adjacent to Mahadaiya railway station on Katni-Chopan branch line of East-Central Railway. The project is also connected with NCL (HQ), Singrauli by road. The nearest airport is in Varanasi at a distance of 240 Km.</p>

	Parameters	Details
1.2.3	Availability of power supply, water etc.	<p>This project will receive power at 33kV by two single circuit overhead lines from 132/33kV Madhuli Substation of NCL.</p> <p>At 10 Mtpa stage, 3 Nos. 10 MVA, 33/6.6kV (each) has been proposed for Option-II power supply arrangement of Block-B OCP.</p> <p>Additionally, the sand segregation plant will require 0.70 KVA of power which will be met through the existing power source.</p> <p>Illumination</p> <p>The general area of the quarry would be illuminated by 2 x 150W LED lamps mounted on 15 m high fabricated tower installed all along the quarry workings and near substation.</p> <p>The haul road would be illuminated by 120 W LED lamps mounted on poles all along the haul road. On each pole two fixtures would be installed to illuminate both sides of the pole.</p> <p>Spoil dumps would be illuminated by 120 W LED flood lights installed on steel tubular poles.</p> <p>Water Supply And Sewage Disposal Arrangement</p> <p>The provisions for augmentation of drinking water supply, non-drinking water supply and Sewage disposal system have been envisaged on the basis of the norms and practices for planning of EPR for Block-B OCP.</p> <p>The Project has already constructed a Sewage Treatment Plant (STP) of 800 m³/d (0.80 MLD) capacity for treatment of domestic effluent from</p>

	<i>Parameters</i>	<i>Details</i>
		<p>colony. The existing STP has sufficient capacity to cater the need of Expansion Project.</p> <p>The effluent from Mine Discharge, Workshop and CHP is being treated in existing Effluent Treatment Plant (ETP) of 8620m³/d (8.62 MLD) capacity. The existing ETP has sufficient capacity to cater the need of Expansion Project.</p> <p>The total requirement for 0.5 MGD of domestic/drinking water shall be fulfilled by IWSS source.</p> <p>Industrial water demand of 0.82 MGD for 'OB to Sand' plant shall be fulfilled by mine water/ETP treated water.</p>
1.2.4	Prominent physiographic features, drainage pattern, natural water courses, rainfall data, highest flood level	<p>The block can be morphologically divided into two distinct units' viz. eastern unit and western unit. The western unit is mainly Block-B Geological Block, whereas the eastern unit is a part of Block-B Extension Block.</p> <p>The western unit, which seems parallel to the scrap faces of the plateau, is dissected by numerous streams. The ground elevation varies from 375m to 512m above MSL. The drainage of the area is controlled by a number of westerly flowing seasonal streams which are ephemeral and are tributaries of Kachani River which, in turn, joins Rihand River, a main artery of Son Basin.</p> <p>Most of the streams are of multiple nature and except one, all the streams drain into Karahia Nalla which is a tributary to Kachani river.</p> <p>The eastern part of the project area comprising mainly western part of Block-B Extension Block</p>

	<i>Parameters</i>	<i>Details</i>
		<p>exhibits undulating terrain with general slope towards North-East.</p> <p>The surface elevation varies between 413 m to 505 m above mean sea level. The highest point is located in the south-western corner of the block, whereas, the lowest point falls in the north-eastern corner of the block. The major nala in the block, called 'Bijul Nala' is flowing north-easterly. The general slope is towards south-east in eastern part of the block. There is a water divide trending East-West in the northern part of the block. The ground slope changes towards north, where, a hilly nala is flowing towards east. Many other small nallas flow north-easterly and south-easterly discharging into the main Bijul nalla, which form the Dendritic Drainage network reflecting the undulating terrain of the block.</p> <p>The Singrauli Coalfield is characterized by tropical climate with three well recognized seasons i.e. summer, rainy and winter. During summer, in May/June temperature shoots up to 46°C, whereas the same goes down to 4°C during December/January in winter.</p> <p>Monsoon starts from the end of June/beginning of July and continues till October. The average annual rainfall is 1000mm, of which, about 95% precipitates during rainy season. Maximum Relative Humidity, during rainy season, varies from 55% to 88%, while it varies from 35% to 55% and 15% to 56% during winter and summer seasons, respectively. Average wind velocity is around 5 km per hour blowing in ESE direction</p>

	Parameters	Details
		during the major period of the year. The maximum rainfall in 24 hours was recorded as 225 mm on 20.08.1975 at Jhingurdah Rain Gauge Station located in the coalfield.
1.2.5	Important surface features within the project area and major diversion or shifting involved	There is no major diversion or shifting involved. It has been estimated that around 207 PAFs shall be rehabilitated from the Expansion Area. For inclusion of sand segregation plant there is no diversion or shifting involved.

1.3 DETAILS OF THE ALLOTMENT AGREEMENT

1.3.1	Name of the Allottee	Not Applicable
1.3.2	Details of allotment/ vesting order	
1.3.3	Name and address of the applicant	Block-B OCP (5.47 Mtpa) is an operating mine under Northern Coalfields Limited (NCL), a subsidiary of Coal India Limited (Maharatna Company), under the Ministry of Coal, Govt of India. The subject mine falls in Singrauli District of Madhya Pradesh and operating under Block-B Area of NCL.
1.3.4	Name of the Previous Allottee of the Block	
1.3.5	Starting date of the Mine as per CMDPA	Block-B Opencast Project is operating since 23.03.2007. The PR prepared for a production capacity of 3.50 Mtpa has been approved by the Govt. of India vide letter No.43011-16-2003-CPMA, dated 7th July, 2006. EC of 5.47 Mtpa has been granted by MoEF vide letter No. J-11015/80/2013-IA.II (M), dated 06.08.2014.
1.3.6	Rated Capacity as per CMDPA	

		<p>A Expansion Project Report (EPR) has been prepared for normative capacity of 8.00 Mtpa and peak capacity of 10.0 Mtpa in order to meet the demand of power grade coal by NCL.</p> <p>The EPR has been approved by CIL Board in 387th meeting on 22.07.2019 for an additional capital investment of ₹998.71 crores with Option-II i.e. total Coal departmental and total OB Outsourcing.</p>																																																			
1.3.7	Production Schedule as per opening permission (meeting provisions of CMDPA if any)	<p>Latest EC has been obtained vide letter No .No. J-11015/80/2013-IA.II (M), dated 06.08.2014 with a production capacity of 5.47 Mtpa in an area of 1339.00 ha.</p>																																																			
1.3.8	End Use of Coal / Lignite as per Allotment order if any																																																				
1.3.9	Cardinal Points co-ordinates of the Block boundary	<p>Latitude and Longitude of the points under which the project is operating is as follows (Cardinal Points B249 to B270 is undiverted forest land):</p> <table border="1"> <thead> <tr> <th>Name</th><th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr><td>B1</td><td>24°12'03.47138"N</td><td>82°35'42.28706"E</td></tr> <tr><td>B2</td><td>24°12'09.01562"N</td><td>82°35'45.07888"E</td></tr> <tr><td>B3</td><td>24°12'09.85364"N</td><td>82°35'42.84512"E</td></tr> <tr><td>B4</td><td>24°12'11.86846"N</td><td>82°35'44.21941"E</td></tr> <tr><td>B5</td><td>24°12'13.06433"N</td><td>82°35'45.00791"E</td></tr> <tr><td>B6</td><td>24°12'16.04334"N</td><td>82°35'46.96728"E</td></tr> <tr><td>B7</td><td>24°12'17.00394"N</td><td>82°35'47.63563"E</td></tr> <tr><td>B8</td><td>24°12'19.15037"N</td><td>82°35'49.02205"E</td></tr> <tr><td>B9</td><td>24°12'20.91227"N</td><td>82°35'50.16925"E</td></tr> <tr><td>B10</td><td>24°12'21.83023"N</td><td>82°35'50.80192"E</td></tr> <tr><td>B11</td><td>24°12'02.93327"N</td><td>82°35'51.66668"E</td></tr> <tr><td>B12</td><td>24°12'10.12008"N</td><td>82°36'10.14820"E</td></tr> <tr><td>B13</td><td>24°12'09.93895"N</td><td>82°36'10.00307"E</td></tr> <tr><td>B14</td><td>24°12'07.68186"N</td><td>82°36'08.05473"E</td></tr> <tr><td>B15</td><td>24°12'04.97726"N</td><td>82°36'05.62433"E</td></tr> <tr><td>B16</td><td>24°12'04.10185"N</td><td>82°36'04.84465"E</td></tr> </tbody> </table>	Name	Latitude	Longitude	B1	24°12'03.47138"N	82°35'42.28706"E	B2	24°12'09.01562"N	82°35'45.07888"E	B3	24°12'09.85364"N	82°35'42.84512"E	B4	24°12'11.86846"N	82°35'44.21941"E	B5	24°12'13.06433"N	82°35'45.00791"E	B6	24°12'16.04334"N	82°35'46.96728"E	B7	24°12'17.00394"N	82°35'47.63563"E	B8	24°12'19.15037"N	82°35'49.02205"E	B9	24°12'20.91227"N	82°35'50.16925"E	B10	24°12'21.83023"N	82°35'50.80192"E	B11	24°12'02.93327"N	82°35'51.66668"E	B12	24°12'10.12008"N	82°36'10.14820"E	B13	24°12'09.93895"N	82°36'10.00307"E	B14	24°12'07.68186"N	82°36'08.05473"E	B15	24°12'04.97726"N	82°36'05.62433"E	B16	24°12'04.10185"N	82°36'04.84465"E
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		B206	24°12'36.85008"N	82°33'59.00786"E
		B207	24°12'40.33177"N	82°34'02.30915"E
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		B212	24°12'45.24271"N	82°34'08.80473"E
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		B223	24°12'41.73426"N	82°34'17.50659"E
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		B225	24°12'40.14319"N	82°34'15.41228"E
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		B236	24°12'34.22375"N	82°34'39.97953"E
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		B239	24°12'31.76104"N	82°34'51.88220"E
		B240	24°12'30.97290"N	82°34'55.72666"E
		B241	24°12'30.38960"N	82°34'58.47647"E

		B242	24°12'29.27907"N	82°35'02.30288"E
		B243	24°12'26.48730"N	82°35'11.48175"E
		B244	24°12'25.99439"N	82°35'12.98073"E
		B245	24°12'20.13281"N	82°35'10.92492"E
		B246	24°12'17.54937"N	82°35'09.99275"E
		B247	24°12'12.53395"N	82°35'08.20681"E
		B248	24°12'03.47138"N	82°35'42.28706"E
		B249	24°11'54.97271"N	82°34'54.52404"E
		B250	24°11'54.10096"N	82°34'53.05607"E
		B251	24°11'51.65128"N	82°34'54.48763"E
		B252	24°11'51.63542"N	82°34'54.49689"E
		B253	24°11'43.38275"N	82°34'59.31960"E
		B254	24°11'43.26226"N	82°35'01.30401"E
		B255	24°11'43.23434"N	82°35'01.76402"E
		B256	24°11'43.18217"N	82°35'02.62291"E
		B257	24°11'45.16844"N	82°35'05.34034"E
		B258	24°11'48.43371"N	82°35'08.00957"E
		B259	24°11'53.56990"N	82°35'12.00252"E
		B260	24°11'55.95021"N	82°35'15.16818"E
		B261	24°11'55.29462"N	82°35'20.65799"E
		B262	24°11'58.33221"N	82°35'22.55527"E
		B263	24°12'00.84748"N	82°35'23.82549"E
		B264	24°12'02.17030"N	82°35'18.20907"E
		B265	24°12'01.81239"N	82°35'12.83484"E
		B266	24°12'00.18112"N	82°35'06.70966"E
		B267	24°11'57.25488"N	82°34'58.41646"E
		B268	24°11'55.81168"N	82°34'55.95490"E
		B269	24°11'55.21732"N	82°34'54.94118"E
		B270	24°11'54.97271"N	82°34'54.52404"E

1.4 DETAILS OF THE PREVIOUS APPROVAL OF MINING PLAN

1.4.1	Date of Approval	06.08.2014
1.4.2	Conditions, if any	Not applicable
1.4.3	Scheduled year of start of production	Block-B Opencast Project is operating since 23.03.2007
1.4.4	Proposed year of achieving the targeted production	2015-16
1.4.5	Date of actual commencement of	Mine is in operation since 23.03.2007 and is continuing.

	mining operations, if operations already started																																			
1.4.6	Likely date of mining operations, if operations not yet started & reasons for non-commencement of operations	Not applicable																																		
1.4.7	Planned production and actual levels achieved in last 3 years (Coal in Mte, OB in Mm ³ , SR in m ³ /t)	<table> <tr> <th rowspan="2">Year</th> <th colspan="3">Plan Production</th> <th colspan="3">Actual Production</th> </tr> <tr> <th>Coal</th> <th>OB</th> <th>SR</th> <th>Coal</th> <th>OB</th> <th>SR</th> </tr> <tr> <td>2019-20</td> <td>5.47</td> <td>32.80</td> <td>6.00</td> <td>5.47</td> <td>1.86</td> <td>0.34</td> </tr> <tr> <td>2020-21</td> <td>5.47</td> <td>32.80</td> <td>6.00</td> <td>5.47</td> <td>13.11</td> <td>2.40</td> </tr> <tr> <td>2021-22</td> <td>5.47</td> <td>32.80</td> <td>6.00</td> <td>5.47</td> <td>18.14</td> <td>3.32</td> </tr> </table>	Year	Plan Production			Actual Production			Coal	OB	SR	Coal	OB	SR	2019-20	5.47	32.80	6.00	5.47	1.86	0.34	2020-21	5.47	32.80	6.00	5.47	13.11	2.40	2021-22	5.47	32.80	6.00	5.47	18.14	3.32
Year	Plan Production			Actual Production																																
	Coal	OB	SR	Coal	OB	SR																														
2019-20	5.47	32.80	6.00	5.47	1.86	0.34																														
2020-21	5.47	32.80	6.00	5.47	13.11	2.40																														
2021-22	5.47	32.80	6.00	5.47	18.14	3.32																														
1.4.8	Statutory obligations vis-à-vis compliance status in a tabular form	<p>Existing coal mining operations are being carried out as per the following:</p> <ol style="list-style-type: none"> 1. Latest EC has been obtained vide letter No . No. J-11015/80/2013-IA.II (M), dated 06.08.2014 with a production capacity of 5.47 Mtpa in an area of 1339.00 ha. 2. Approval of Sand Segregation: Installation of Sand Segregation Plant is included in present modified Mining Plan for approval. 3. State permissions: Request has been made to obtain permission from Govt. of Madhya Pradesh for installation of Sand Segregation Plant. 																																		
1.4.9	Reasons for difference between the planned and actual production levels	Not applicable																																		

1.5 PARAMETERS OF APPROVED MINING PLAN VIS -ũ -VIS PROPOSED MINING PLAN

		Approved Mining Plan	Proposed Mining Plan
1.5.1	Block Area in `Ha_	608	709
1.5.2	Block Area Projectised `Ha_	Full Area projectized	Full Area projectized
1.5.3	Lease area `Ha_	1339	1756.77
1.5.4	Project Area `Ha_	1339	1756.77
1.5.5	Life of the Project `Yrs_	27	13
1.5.6	Minimum and Maximum Depth of working `m_	15-280	134-285
1.5.7	Net Geological Block `Ha_	608	709
1.5.8	Production Target `Mtpa_	Coal - 5.47 Mtpa	Coal - 10 Mtpa Generation of Manufactured Sand from OB Processing Plant – 2000 m ³ /day
1.5.9	Seams Available “As per GR”	2 nos. Seams <ul style="list-style-type: none"> • Purewa Merged • Turra 	2 nos. Seams <ul style="list-style-type: none"> • Purewa Merged • Turra
1.5.10	Seams not considered for Mining with Reasons	Kota Seam Thin seam, not techno-economically feasible to extract	Kota Seam Thin seam, not techno-economically feasible to extract
1.5.11	Gross Geological Reserve “Mt”	122.97	160.68
1.5.12	Net Geological Reserve “Mt”	110.67	144.61
1.5.13	Blocked Reserve “Mt”	Nil	Nil

1.5.14	Minable Reserve “Mt”	87.67	138.07
1.5.15	Extractable Reserves “Mt”	87.67	138.07
1.5.16	% of Extraction/ recovery	79.21%	95%
1.5.17	Reserve Depleted (till the base date) Reserves “ Mt”	25.50	21.88
1.5.18	Balance Extractable reserve “Mt”	62.17 as on 01.04.2014	116.19 as on 01.04.2022
1.5.19	Average Grade	G9	G9
1.5.20	OB in Mm ³	206.14 As on 01.04.2014	545.97 as on 01.04.2022
1.5.21	SR m ³ /t	3.31	4.70
1.5.22	Mining Technology	Coal & OB-Shovel Dumper Combination	Coal & OB-Shovel Dumper Combination Sand- Crusher, Vibrator, Hydrocyclone
1.5.23	Coal Beneficiation envisaged	NA	NA
1.5.24	Handling of Rejects	NA	Sand Segregation Plant- Negligible quantity of clay , pebbles
1.5.25	Land use pattern “ Ha”		
1	Excavation Area	460.20	709.57
2	Top Soil Dump		-
3	External Dump	429.10	523.10
4	Safety Zone		18.08
5	Other Use		-
6	Infrastructure area (built-up area)	81.10	103.45

7	Green Belt(Afforestation)	183.98	402.57
8	Undisturbed Area	184.62	-
	Total	1339.00	1756.77
1.5.26	Reasons for revision	NA	<p>Expansion Project Report (EPR) has been prepared for normative capacity of 8.00 Mtpa and peak capacity of 10.0 Mtpa in order to meet the demand of power grade coal by NCL.</p> <p>The expansion project involved diversion of 631.39 Ha of forest land (71.976 Ha for mining and 559.416 Ha for OB dumping). However, the proposal of diversion of 631.39 Ha of forest land was rejected by FAC of MoEF&CC.</p> <p>Therefore, a revised Mining Plan of Block-B OCP (10 Mtpa) is prepared considering the restriction on use of forest land for OB dumping by increasing</p>

			<p>the dump height from 90m to 120m and flushing the internal and external OB dumps in Vindhya I & II quarry so that bare minimum forest land i.e., 139.86 ha (45.86Ha for excavation and 94.00 Ha for OB dumping) is required for the expansion project.</p> <p>To include sand segregation along with coal mining operations in the present EC in which Processing of OB (Overburden) to generate Sand and other byproducts materials from OB (Overburden) including other ancilliary activities such as storage of finished products and rejects from the plant (Clay, silt etc.) / mine premises at specified places of Block-B OCP, Singrauli Coalfields.</p> <p>Accordingly, Modified Mining Plan has been prepared for revision.</p>
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CHAPTER 2

EXPLORATION, GEOLOGY, SEAM SEQUENCE, COAL QUALITY AND RESERVE

	Parameters	Details																																								
2.1	DETAILS OF THE BLOCK																																									
2.1.1	Particulars of adjacent blocks: North, South, East, West	North: Gorbi Block South Moher-Amlorhi Extension Block	East : Bijul Block West: Incrop of Turra Seam																																							
2.1.2	Location of the Block District / State	District-Singrauli, State-Madhya Pradesh																																								
2.1.3	Area of the Block “Ha”	709																																								
2.1.4	Area of the geological block projectized “in Ha” (Area of the geological block considered for liquidation of coal reserve)	709																																								
2.1.5	Balance area yet to be projectized “Ha”	-																																								
2.1.6	Likely reserve in the area yet to be projectized “in Ha”	-																																								
2.1.7	Cardinal Points Co-ordinates of the non-coal/lignite bearing area/existing mine lease outside the allotted Geological Coal Lignite block (Duly certified in line with para 1.9 of the Guideline, if fresh mining lease required)	Cardinal Points for Block-B OCP Leasehold (Cardinal Points B249 to B270 is undiverted forest land): <table><tr><th>Name</th><th>Latitude</th><th>Longitude</th></tr><tr><td>B1</td><td>24°12'03.47138"N</td><td>82°35'42.28706"E</td></tr><tr><td>B2</td><td>24°12'09.01562"N</td><td>82°35'45.07888"E</td></tr><tr><td>B3</td><td>24°12'09.85364"N</td><td>82°35'42.84512"E</td></tr><tr><td>B4</td><td>24°12'11.86846"N</td><td>82°35'44.21941"E</td></tr><tr><td>B5</td><td>24°12'13.06433"N</td><td>82°35'45.00791"E</td></tr><tr><td>B6</td><td>24°12'16.04334"N</td><td>82°35'46.96728"E</td></tr><tr><td>B7</td><td>24°12'17.00394"N</td><td>82°35'47.63563"E</td></tr><tr><td>B8</td><td>24°12'19.15037"N</td><td>82°35'49.02205"E</td></tr><tr><td>B9</td><td>24°12'20.91227"N</td><td>82°35'50.16925"E</td></tr><tr><td>B10</td><td>24°12'21.83023"N</td><td>82°35'50.80192"E</td></tr><tr><td>B11</td><td>24°12'02.93327"N</td><td>82°35'51.66668"E</td></tr><tr><td>B12</td><td>24°12'10.12008"N</td><td>82°36'10.14820"E</td></tr></table>		Name	Latitude	Longitude	B1	24°12'03.47138"N	82°35'42.28706"E	B2	24°12'09.01562"N	82°35'45.07888"E	B3	24°12'09.85364"N	82°35'42.84512"E	B4	24°12'11.86846"N	82°35'44.21941"E	B5	24°12'13.06433"N	82°35'45.00791"E	B6	24°12'16.04334"N	82°35'46.96728"E	B7	24°12'17.00394"N	82°35'47.63563"E	B8	24°12'19.15037"N	82°35'49.02205"E	B9	24°12'20.91227"N	82°35'50.16925"E	B10	24°12'21.83023"N	82°35'50.80192"E	B11	24°12'02.93327"N	82°35'51.66668"E	B12	24°12'10.12008"N	82°36'10.14820"E
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		B13	24°12'09.93895"N	82°36'10.00307"E
		B14	24°12'07.68186"N	82°36'08.05473"E
		B15	24°12'04.97726"N	82°36'05.62433"E
		B16	24°12'04.10185"N	82°36'04.84465"E
		B17	24°11'57.24714"N	82°35'58.50588"E
		B18	24°11'53.59299"N	82°35'55.11283"E
		B19	24°11'49.36801"N	82°35'51.19704"E
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		B23	24°11'35.92636"N	82°35'38.72790"E
		B24	24°11'31.34420"N	82°35'34.41418"E
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		B26	24°11'22.21274"N	82°35'25.91862"E
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		B28	24°11'14.31073"N	82°35'18.21624"E
		B29	24°11'13.19218"N	82°35'18.25866"E
		B30	24°11'10.87027"N	82°35'18.22994"E
		B31	24°11'09.33951"N	82°35'18.21101"E
		B32	24°11'08.42891"N	82°35'18.10597"E
		B33	24°11'06.07629"N	82°35'17.72060"E
		B34	24°11'04.95891"N	82°35'17.65052"E
		B35	24°11'03.89373"N	82°35'17.52486"E
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		B37	24°10'59.77347"N	82°35'16.74259"E
		B38	24°10'57.42300"N	82°35'16.15099"E
		B39	24°10'55.93132"N	82°35'15.68254"E
		B40	24°10'54.73145"N	82°35'15.27393"E
		B41	24°10'51.61342"N	82°35'14.05408"E
		B42	24°10'46.20141"N	82°35'11.77458"E
		B43	24°10'44.60925"N	82°35'11.04241"E
		B44	24°10'38.10421"N	82°35'07.99948"E
		B45	24°10'34.74909"N	82°35'06.42055"E
		B46	24°10'32.59247"N	82°35'05.38143"E
		B47	24°10'31.50265"N	82°35'05.96800"E
		B48	24°10'30.57778"N	82°35'05.58159"E
		B49	24°10'28.28280"N	82°35'04.61578"E
		B50	24°10'26.86143"N	82°35'03.99824"E
		B51	24°10'25.10625"N	82°35'02.40161"E
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		B53	24°10'20.77724"N	82°34'58.52329"E
		B54	24°10'15.63231"N	82°34'53.69751"E
		B55	24°10'11.47464"N	82°34'49.87770"E
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		B70	24°09'54.75764"N	82°33'45.16814"E
		B71	24°09'54.65513"N	82°33'44.71894"E
		B72	24°09'54.65604"N	82°33'44.69323"E
		B73	24°09'54.65879"N	82°33'44.66637"E
		B74	24°09'54.57538"N	82°33'44.32961"E
		B75	24°09'54.47617"N	82°33'43.92917"E
		B76	24°09'54.46269"N	82°33'43.91235"E
		B77	24°09'53.97540"N	82°33'43.30378"E
		B78	24°09'53.56959"N	82°33'42.79700"E
		B79	24°09'53.55836"N	82°33'42.78297"E
		B80	24°09'51.57252"N	82°33'40.30293"E
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		B82	24°09'47.71607"N	82°33'31.35521"E
		B83	24°09'45.56603"N	82°33'28.64331"E
		B84	24°09'45.11660"N	82°33'27.25381"E
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		B96	24°09'40.17991"N	82°33'00.61001"E
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		B98	24°09'39.80495"N	82°32'57.90816"E
		B99	24°09'39.65047"N	82°32'56.98675"E
		B100	24°09'39.28403"N	82°32'55.56375"E
		B101	24°09'38.92290"N	82°32'54.34337"E
		B102	24°09'38.47818"N	82°32'53.15125"E

		B103	24°09'37.55600"N	82°32'50.49516"E
		B104	24°09'37.81639"N	82°32'50.43105"E
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		B134	24°10'28.04004"N	82°32'55.64172"E
		B135	24°10'29.77783"N	82°32'56.42296"E
		B136	24°10'29.89209"N	82°32'56.47434"E
		B137	24°10'35.47129"N	82°32'58.98257"E
		B138	24°10'36.34581"N	82°32'59.37576"E
		B139	24°10'36.40206"N	82°32'59.21177"E
		B140	24°10'36.40621"N	82°32'59.19963"E
		B141	24°10'36.40281"N	82°32'59.20785"E
		B142	24°10'36.45040"N	82°32'58.96513"E
		B143	24°10'36.72371"N	82°32'57.57151"E
		B144	24°10'38.11880"N	82°32'50.45710"E
		B145	24°10'38.12483"N	82°32'50.39732"E
		B146	24°10'38.20745"N	82°32'49.57943"E
		B147	24°10'38.18928"N	82°32'48.74881"E

		B148	24°10'42.12460"N	82°32'49.73407"E
		B149	24°10'45.67099"N	82°32'47.52483"E
		B150	24°10'47.47203"N	82°32'53.99468"E
		B151	24°10'46.83296"N	82°32'57.56931"E
		B152	24°10'49.06672"N	82°33'01.90061"E
		B153	24°10'49.11233"N	82°33'01.88185"E
		B154	24°10'50.47701"N	82°33'01.31702"E
		B155	24°10'51.68727"N	82°33'00.71284"E
		B156	24°10'53.17445"N	82°32'59.94326"E
		B157	24°10'54.19458"N	82°32'59.43050"E
		B158	24°10'55.09390"N	82°32'58.95384"E
		B159	24°10'56.92678"N	82°32'58.01960"E
		B160	24°10'58.53647"N	82°32'57.04521"E
		B161	24°11'00.18129"N	82°32'55.99621"E
		B162	24°11'02.08544"N	82°32'54.81905"E
		B163	24°11'02.58954"N	82°32'54.30008"E
		B164	24°11'03.45866"N	82°32'53.41048"E
		B165	24°11'06.14828"N	82°32'56.19942"E
		B166	24°11'10.64276"N	82°33'00.81035"E
		B167	24°11'15.69848"N	82°33'06.04701"E
		B168	24°11'19.37588"N	82°33'09.80440"E
		B169	24°11'21.78989"N	82°33'12.33008"E
		B170	24°11'22.15022"N	82°33'12.70711"E
		B171	24°11'25.45108"N	82°33'16.27254"E
		B172	24°11'26.55606"N	82°33'17.56107"E
		B173	24°11'28.27375"N	82°33'19.49468"E
		B174	24°11'29.97402"N	82°33'21.44680"E
		B175	24°11'32.46299"N	82°33'24.22076"E
		B176	24°11'33.96271"N	82°33'25.80950"E
		B177	24°11'36.58859"N	82°33'28.71289"E
		B178	24°11'37.66175"N	82°33'29.95659"E
		B179	24°11'38.74081"N	82°33'29.57119"E
		B180	24°11'39.22540"N	82°33'29.49500"E
		B181	24°11'40.26694"N	82°33'29.62486"E
		B182	24°11'41.73927"N	82°33'29.67791"E
		B183	24°11'42.57764"N	82°33'29.69979"E
		B184	24°11'43.03870"N	82°33'29.82260"E
		B185	24°11'44.35806"N	82°33'30.11992"E
		B186	24°11'45.28036"N	82°33'30.34210"E
		B187	24°11'46.14942"N	82°33'30.51675"E
		B188	24°11'46.64308"N	82°33'30.60479"E
		B189	24°11'47.76703"N	82°33'31.08725"E
		B190	24°11'50.36640"N	82°33'32.37297"E
		B191	24°11'51.70487"N	82°33'32.90493"E
		B192	24°11'52.17606"N	82°33'33.08648"E

		B193	24°11'55.81972"N	82°33'34.23254"E
		B194	24°11'59.08846"N	82°33'35.24511"E
		B195	24°12'00.44878"N	82°33'35.74221"E
		B196	24°12'04.85038"N	82°33'37.41327"E
		B197	24°12'08.12748"N	82°33'38.66044"E
		B198	24°12'12.35289"N	82°33'40.73965"E
		B199	24°12'16.26809"N	82°33'42.66276"E
		B200	24°12'19.74437"N	82°33'44.40472"E
		B201	24°12'22.63343"N	82°33'46.79597"E
		B202	24°12'26.23679"N	82°33'49.77035"E
		B203	24°12'28.80610"N	82°33'51.88816"E
		B204	24°12'30.52310"N	82°33'53.24543"E
		B205	24°12'33.09068"N	82°33'55.52739"E
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		B209	24°12'43.26771"N	82°34'05.35765"E
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		B211	24°12'44.93797"N	82°34'08.12111"E
		B212	24°12'45.24271"N	82°34'08.80473"E
		B213	24°12'46.13787"N	82°34'10.62093"E
		B214	24°12'46.70496"N	82°34'11.92903"E
		B215	24°12'46.28453"N	82°34'14.12771"E
		B216	24°12'45.75032"N	82°34'16.93453"E
		B217	24°12'45.00349"N	82°34'20.54756"E
		B218	24°12'44.46139"N	82°34'23.07295"E
		B219	24°12'44.11315"N	82°34'24.52226"E
		B220	24°12'43.62075"N	82°34'22.23037"E
		B221	24°12'43.36553"N	82°34'20.91432"E
		B222	24°12'42.38601"N	82°34'18.94471"E
		B223	24°12'41.73426"N	82°34'17.50659"E
		B224	24°12'41.02915"N	82°34'16.03267"E
		B225	24°12'40.14319"N	82°34'15.41228"E
		B226	24°12'39.37379"N	82°34'14.95739"E
		B227	24°12'39.09236"N	82°34'16.18479"E
		B228	24°12'38.78618"N	82°34'17.72839"E
		B229	24°12'38.45887"N	82°34'19.23653"E
		B230	24°12'37.92596"N	82°34'21.91436"E
		B231	24°12'37.31643"N	82°34'24.72019"E
		B232	24°12'36.91965"N	82°34'26.70808"E
		B233	24°12'36.30819"N	82°34'29.70144"E
		B234	24°12'35.68523"N	82°34'32.76500"E
		B235	24°12'35.18632"N	82°34'35.26739"E
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2.1.8	Certificate of Qualified person/ Accredited Mining Plan preparing agency (MPPA) if the project area is confined with in the vested / allotted block boundary / existing mining lease and	Not applicable																																																																																																			

	<p>Where the project area extends beyond the block boundary, a certificate of Qualified person/ Accredited Mining Plan preparing agency (MPPA) should be supported with a certificate of State Government mines and Geology department must be attached, which should specify (a) intent of the state government for grant of lease beyond the vested geological boundary; (b) non-existence of Coal/ Lignite in the area beyond the vested/allotted geological block boundary / existing mining lease to rule out the issue of encroachment and use of coal bearing area (beyond the vested/allotted block boundary/existing mining lease in the mining plan.</p> <p>The Project area, Lease area and geological block area in "Ha" shall also be envisaged. Any other adjacent block, and non-coal bearing certificate of the area in case any proposed infrastructure or OB dump is outside the block</p>	
2.1.9	KML file of the Proposed lease area, Project Area and geological block.	Attached as Annexure-III

2.1.10	Whether the proposed project area is confined within the allotted block boundary/existing mining lease, if not, the reason for deviation from allotted block boundary, may be given.	The subject mine is an existing and operating mine. Yes
2.1.11	If the project area extends outside the allotted block boundary/existing mining lease, confirmation about non-occurrence of coal/lignite in the area under reference needs to be furnished	Not applicable
2.1.12	Type of the Project (Operating / under Implementation) and year of Starting.	Block-B Opencast Project is an operating mine since 23.03.2007 with an EC of 5.47 Mtpa. Block-B OCP has produced 66.66 Mt of coal and removed 223.65 Mm ³ of OB till 31.03.2022. Sand Segregation Plant operation is likely to be started by April, 2024.
2.2	EXPLORATION, GEOLOGY AND ASSESSMENT OF RESERVE	
2.2.1	<p>Regional geological set up of the area, local geology, structure, stratigraphic sequence, characteristics of the litho-logical units (coal seams /partings/overburden).</p> <p>The proposed mining block, located in the western part of Moher sub-Basin, is covered by rocks of Talchir, Karharbari and Barakar formations with recent soil and alluvium cover at places. Based on the sub-surface data generated from the exploratory drilling, the geological sequence of the block is given below :</p>	

	Sl. No	Form-ation	Coal Seams	Thickness of formation	Lithology
	1	Recent	-	0.00-7.65 m	Sandy soil and alluvial soil
	2	Barakar	Purewa , Turra & Turra A	Upto 190 m	Very coarse to coarse grained whitish sandstones with subordinate grey shale, clay and coal seams.
	3	Karharbari	Kota	145 to 170 m	Very coarse to medium grained sandstones and sandy shales, at places conglomeratic with thin coal seams.
	4	Talchir	-	Above 20 m full thickness not proved	Khaki grey shales and fine grained sandstone
2.2.2	<p>Local geology, Structure, Stratigraphic sequence, Characteristics of the lithological units (coal seams /partings/overburden).</p> <p>The proposed mining block, located in the western part of Moher sub-Basin, is covered by rocks of Talchir, Karharbari and Barakar formations with recent soil and alluvium cover at places.</p> <p>The seams exhibit north–south strike and are dipping easterly. In the northern portion, amount of dip is around 22 degrees which, gradually flattens out to 8 degrees in the south within Block-B block, whereas, in Block B Extension block area strike is east – west in the north and eastern part with 2 to 3 degree dip towards north and it swings to north-south towards west with easterly dip of around 7 to 8 degrees.</p> <p>A generalized sequence of coal seams and partings within the block area under report is as follows:</p>				

Particulars	Area of Development (sq. km)	Thickness range (m)	UHV Grade range	Geological Reserve	GCV Grade range
1	2	3	4	7	8
Surface Cover	14.60	0-270	-	-	-
Purewa Merged	8.29	8-30.10	G-C	274.21	G15-G5
Parting	-	60-80	-	-	-
Turra	10.46	12.16-22.95	E-B	244.51	G9-G6
Parting	-	7.75-34.90	-	-	-
Turra A	-	0.35-2.15	UG-A	3.35	G16-G1
Parting	-	31.90-79.41	-	-	-
Kota	-	0.20-3.76	F-B	1.95	G12-G4

Brief description of faults is given in Table below:

Fault No	Extent	Trend	Throw	
			Direction	Amount
F 15 (As in older Block-B GR)	This fault appears to be dying in the eastern portion.	E – W strike	South	15m
F 16 (As in older Block-B GR)	This fault also appears to be dying in the eastern portion.	E –W strike	North	10M
F19 (F 2 of Block-B Extn. block GR)	Major fault dividing Vidhya and Gorbi 'C' sectors, extending into Block B Extension renamed as F2)	NE-SE to E – W	South	55m – 90m
F18 (Fault F1 of Block-B Extn. Block GR)	Sympathetic fault of F 19, extending into Block B Extension block, renamed as F1.	E -W	South	15m
F20 (F3 of Block B Extn. block GR)	A major fault demarcating the northern boundary with Block B Extn, Phase-II, eastern extension renamed as F3 out of the Block B.	ENE TO WSW	South	Approx. 100m-220m
F-17	Vindhya sub-block	NE-SW	North-westerly	90m

2.2.3	Geological Block Area “ Ha”	709
2.2.4	Status of Exploration of the block	Fully Explored

Agency wise drilling

Explora- tion Agency	BH Series	Period of Operation		Drilling		Type of expln.
		From	To	No. of Bhs	Meterage	
A. Block B block (Revised area 7.00 sq.km.)						
GSI	SN	1961		4	851.37	Regional
NCDC	NCSB	May 1971	May 1972	25	2652.86	Semi Detailed
CMPDI	CMSM	Dec. 1984	Jan. 1985	4	316.20	Detailed during Moher Block
	CMSB	Sept.1986	April 1988	93	10289.95	Detailed
Total				126	14110.38	-
B. Block B Extension block (Area 7.60 sq.km.)						
CMPDI	CMSB	Feb 1987	Mar 1988	8	1338.70	Detailed
CMPDI	CMAE	Feb 2004	Jun 2004	7	2188.00	Detailed
CMPDI	CMBJ	Jun 2008	Jul. 2008	1	317.00	Detailed
CMPDI	CMBE	Apr. 1999	Jul. 2009	101	30603.00	Detailed
Total				117	34446.70	-
C. Block B Extension Phase-II block (Area 7.90 sq.km.)						
GSI	SN	1961	1963	2	442.65	Regional
CMPDI	CMSB	Feb. 1987	March 1987	1	120.95	Detailed
CMPDI	CMBJ	June 2008	July 2008	2	533.00	Detailed
CMPDI	CMBE	March 2005	March 2009	37	8639.00	Detailed
CMPDI	CMBE	Feb. 2015	March 2015	19	2003.00	Detailed
Total				61	11738.60	-

The area considered for present project (8 Mtpa) is as follows:

Part of Block-B Geological Block - 3.65 Sq Km

Part of Block-B Extn. Geological Block - 3.16 Sq Km

Part of Block-B Extn.Phase-II Geological Block - 0.28 Sq Km

Total - 7.09 Sq Km

		<table><tr><th colspan="6">Exploratory Boreholes within projectised area</th></tr><tr><th>Year</th><th>Agency</th><th>Block Name</th><th>Area sq. km)</th><th>Number of boreholes</th><th>Meterage</th></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td></td><td>GSI</td><td rowspan="4">Block B</td><td rowspan="4">3.65</td><td>2 (SN63,68)</td><td>435.57</td></tr><tr><td></td><td>NCDC</td><td>3 (NCSB-4,14,23)</td><td>377.37</td></tr><tr><td></td><td>CMPDI</td><td>25 (CMSB)</td><td>3824.15</td></tr><tr><td colspan="2">Total</td><td>34</td><td>4637.09</td></tr><tr><td></td><td rowspan="4">CMPDI</td><td rowspan="4">Block B Extn.</td><td rowspan="4">3.16</td><td>8 (CMSB)</td><td>1338.70</td></tr><tr><td></td><td>4 (CMAE)</td><td>1252.00</td></tr><tr><td></td><td>32 (CMBE)</td><td>9048.00</td></tr><tr><td colspan="2">Total</td><td>44</td><td>11638.70</td></tr><tr><td colspan="2">Sub-Total</td><td></td><td>6.81</td><td>78</td><td>16275.79</td></tr><tr><td></td><td rowspan="2">CMPDI</td><td rowspan="2">Block B Extn Ph-II</td><td rowspan="2"></td><td>1(CMSB-30)</td><td>120.95</td></tr><tr><td></td><td>1(CMBE-72)</td><td>130.10</td></tr><tr><td colspan="2">Total</td><td></td><td>0.28</td><td>2</td><td>251.05</td></tr><tr><td colspan="3">Grand Total</td><td>7.09</td><td>80</td><td>16526.84</td></tr></table>	Exploratory Boreholes within projectised area						Year	Agency	Block Name	Area sq. km)	Number of boreholes	Meterage	1	2	3	4	5	6		GSI	Block B	3.65	2 (SN63,68)	435.57		NCDC	3 (NCSB-4,14,23)	377.37		CMPDI	25 (CMSB)	3824.15	Total		34	4637.09		CMPDI	Block B Extn.	3.16	8 (CMSB)	1338.70		4 (CMAE)	1252.00		32 (CMBE)	9048.00	Total		44	11638.70	Sub-Total			6.81	78	16275.79		CMPDI	Block B Extn Ph-II		1(CMSB-30)	120.95		1(CMBE-72)	130.10	Total			0.28	2	251.05	Grand Total			7.09	80	16526.84
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2.2.5	Area covered by ‘detailed’ exploration within the block (sq. km)	Full Area																																																																															
2.2.6	Whether entire lease area has been covered by ‘detailed’ exploration.	Yes																																																																															
2.2.7	No. of boreholes drilled within the block	80																																																																															
2.2.8	Whether any further exploration/study is required or suggested and time frame in which it is to be completed	NA																																																																															
2.2.9	Year wise future programme of exploration	Not required																																																																															
2.2.10	Overall borehole density within the block (no./ sq. km) approx	11																																																																															
2.2.11	No of Seams available as per GR (Geological Report)	Top to Bottom and abbreviations used in this report Purewa merged (PM) Turra Turra-A Kota																																																																															

2.2.12	Seams not considered for Mining with Reasons	Kota seam & Turra-A Seam (Very thin)			
2.2.13	Dip of the Seam	4°-22°			
2.2.14	Seam wise thickness, depth and reserve				
	Description of all coal seams within the Block				
	Stratigraphic Sequence	Thickness(m)		Geological Reserves (Mt) (As on 01.04.2018)	Mineable Reserves (Mt) as per PR (As on 01.04.2018)
		Min.	Max.		
	Top partings	63.78	210.50	-	-
	Purewa Merged Seam	8.00	31.10	77.62	74.22
	Parting between Purewa Merged & Turra seam	60.00	80.00	-	-
	Turra Seam	12.16	26.23	66.99	63.85
	Total			144.61	138.07
2.2.15	Methodology of reserves estimation (also mention if any software package has been used).		AUTOCAD software is being used for reserve estimation. Grade Wise, Seam wise and Depth wise Tonnage of coal is calculated using the Detailed Resource Reporting method of MINEX software.		
2.2.16	Wt. Average GCV “KCal/kg”		G-9		
2.2.17	Gross Geological Reserve of the block “Mt”		144.61		
2.2.18	Net Geological Reserve of the block “Mt”		144.61		
2.2.19	Minable Reserve of the block “Mt”		138.07		
2.2.20	Blocked Reserve “Mt”		-		
2.2.21	Corresponding extractable reserve of the block “Mt”		-		
2.2.22	Percentage of Extraction		95%		
2.2.23	Reserve already depleted (Base date of Mining Plan)		21.88 (upto 2021-22)		
2.2.24	Balance Reserve (as on Base Date)		116.19 (As on 01.04.2022)		

CHAPTER 3

MINING

	Parameters	Details
3.1	MINING METHOD	
3.1.1	Existing method of mining if the mine is under operation	Block-B OCP (5.47 Mtpa) is being worked by system of mining using shovel-dumper system.
3.1.2	Proposed method of mining with justification on suitability of method of mining	<p>It is proposed to continue with existing shovel-dumper combination of mining.</p> <p>The criteria for selection of mining method for the proposed block is as follows:</p> <ul style="list-style-type: none"> i) The proposed mine is an extension/expansion of existing Block-B Opencast Project; ii) The occurrence of moderately thick coal seam i.e. Turra Seam (15-25m) and Purewa Merged Seam (19-25m) leads to a stripping ratio of 4.33m³/t in the proposed mining area. iii) Grade of the seam varies between G7 to G13 (in GCV). iv) The proposed area is free from any permanent structure or major surface features. <p>Further, based on the floor gradient pattern, the entire mine has been divided into two sub-blocks i.e. Gorbi-B & C and Vindhya-I & II.</p> <p>Gorbi-B & C is limited by the fault F-20 and F-19 having floor gradient varying from 12° to 22°. In this block, horizontal slicing method has been proposed.</p> <p>Vindhya-I & II block is limited by the fault F-19 and boundary of Moher and Moher-Amlohri Block having</p>

	Parameters	Details																																																																											
		floor gradient varying from 4° to 12°. In this block inclined seam method has been proposed.																																																																											
3.1.3	Coal production capacity proposed “Mtpa”	10 Mtpa																																																																											
3.1.4	Justification for optimization of Coal production capacity	The mining plan has been prepared for the purpose of obtaining Environmental Clearance for increase in coal production capacity of Block-B OCP from 5.47 Mtpa to 10 Mtpa for supply of coal to thermal power stations and other consumers to meet the increase energy demand in the country.																																																																											
3.1.5	Calendar year from which the production will start	2022-23																																																																											
3.1.6	Year of achieving rated production	2024-25																																																																											
3.1.7	TENTATIVE COAL PRODUCTION PLAN ‘Mt’ <table><tr><th colspan="2">Year</th><th>Turra Seam</th><th>Purewa Merged Seam</th><th>Total Coal</th></tr><tr><td>Yr-1</td><td>2022-23</td><td>2.97</td><td>2.50</td><td>5.47</td></tr><tr><td>Yr-2</td><td>2023-24</td><td>4.34</td><td>3.66</td><td>8.00</td></tr><tr><td>Yr-3</td><td>2024-25</td><td>5.43</td><td>4.57</td><td>10.00</td></tr><tr><td>Yr-4</td><td>2025-26</td><td>5.43</td><td>4.57</td><td>10.00</td></tr><tr><td>Yr-5</td><td>2026-27</td><td>5.43</td><td>4.57</td><td>10.00</td></tr><tr><td>Yr-6</td><td>2027-28</td><td>5.43</td><td>4.57</td><td>10.00</td></tr><tr><td>Yr-7</td><td>2028-29</td><td>5.43</td><td>4.57</td><td>10.00</td></tr><tr><td>Yr-8</td><td>2029-30</td><td>5.44</td><td>4.56</td><td>10.00</td></tr><tr><td>Yr-9</td><td>2030-31</td><td>5.46</td><td>4.54</td><td>10.00</td></tr><tr><td>Yr-10</td><td>2031-32</td><td>5.48</td><td>4.52</td><td>10.00</td></tr><tr><td>Yr-11</td><td>2032-33</td><td>4.92</td><td>4.08</td><td>9.00</td></tr><tr><td>Yr-12</td><td>2033-34</td><td>4.37</td><td>3.63</td><td>8.00</td></tr><tr><td>Yr-13</td><td>2034-35</td><td>3.15</td><td>2.57</td><td>5.72</td></tr><tr><td colspan="2">Total</td><td>63.28</td><td>52.91</td><td>116.19</td></tr></table>		Year		Turra Seam	Purewa Merged Seam	Total Coal	Yr-1	2022-23	2.97	2.50	5.47	Yr-2	2023-24	4.34	3.66	8.00	Yr-3	2024-25	5.43	4.57	10.00	Yr-4	2025-26	5.43	4.57	10.00	Yr-5	2026-27	5.43	4.57	10.00	Yr-6	2027-28	5.43	4.57	10.00	Yr-7	2028-29	5.43	4.57	10.00	Yr-8	2029-30	5.44	4.56	10.00	Yr-9	2030-31	5.46	4.54	10.00	Yr-10	2031-32	5.48	4.52	10.00	Yr-11	2032-33	4.92	4.08	9.00	Yr-12	2033-34	4.37	3.63	8.00	Yr-13	2034-35	3.15	2.57	5.72	Total		63.28	52.91	116.19
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Total		63.28	52.91	116.19																																																																									

Parameters		Details		
TENTATIVE OB PRODUCTION PLAN `MCUM_				
Year		Top OB	Parting	Total OB
Yr-1	2022-23	24.36	7.73	32.09
Yr-2	2023-24	28.73	11.27	40.00
Yr-3	2024-25	35.82	14.18	50.00
Yr-4	2025-26	35.81	14.19	50.00
Yr-5	2026-27	35.82	14.18	50.00
Yr-6	2027-28	35.81	14.19	50.00
Yr-7	2028-29	35.82	14.18	50.00
Yr-8	2029-30	35.79	14.21	50.00
Yr-9	2030-31	35.71	14.29	50.00
Yr-10	2031-32	30.66	14.40	45.06
Yr-11	2032-33	22.90	13.10	36.00
Yr-12	2033-34	16.36	11.64	28.00
Yr-13	2034-35	6.68	8.14	14.82
Total		380.27	165.70	545.97
SUMMARISED CALENDAR PROGRAMME FOR MINE				
Year		Coal (Mt)	OB (Mm³)	SR
Yr-1	2022-23	5.47	32.09	5.86
Yr-2	2023-24	8.00	40.00	5.00
Yr-3	2024-25	10.00	50.00	5.00
Yr-4	2025-26	10.00	50.00	5.00
Yr-5	2026-27	10.00	50.00	5.00
Yr-6	2027-28	10.00	50.00	5.00
Yr-7	2028-29	10.00	50.00	5.00
Yr-8	2029-30	10.00	50.00	5.00
Yr-9	2030-31	10.00	50.00	5.00
Yr-10	2031-32	10.00	45.06	4.51
Yr-11	2032-33	9.00	36.00	4.00
Yr-12	2033-34	8.00	28.00	3.50
Yr-13	2034-35	5.72	14.82	2.59
Total		116.19	545.97	4.70

3.1.8	Rated Capacity 'Mtpa _	
	- By OC	10 Mtpa
	- By UG	-
	- Overall	10 Mtpa
3.1.9	Life of the mine : 'Years _	
	- By OC	13
	- By UG	-
	- Overall	13
	Parameters	Details
3.1.10	Whether the proposed external OB dump site is coal bearing: If so, whether coal/ lignite below waste disposal area is extractable.	No
3.1.11	Whether negative proving for coal/ lignite in the proposed site for OB dump/ infrastructure has been done.	Not required.
3.1.12	Results of any investigation carried out for scientific mining, conservation of minerals and protection of environment; future proposals.	Scientific studies for slope stability for pit and dump slopes for increasing the dump height from 90m to 120m for accommodating overburden. Further, hydro-geology study and washability study proposed.

3.1.13	Type of Equipment/ HEMM proposed	List of HEMM																																																																																																																																																																																		
		The position of major auxiliary & mining and transport equipment existing at the project as on 01.04.2022 vis-à-vis sanctioned provision as per approved option of EPR is given below:																																																																																																																																																																																		
		<table><tr><th>SI No</th><th>HEMM</th><th>SIZE / CAP .</th><th>EXISTING AS ON 01.04.22</th><th>AS PER APPROVED OPTION OF EPR (8 Mtpa)</th><th>Proposed in Mining Plan</th></tr><tr><td colspan="4">A. OB REMOVAL</td><td></td><td></td></tr><tr><td>1</td><td>Electric Rope Shovel</td><td>20m³</td><td>-</td><td rowspan="7">Outsourcing</td><td rowspan="7">Outsourcing</td></tr><tr><td>2</td><td>Diesel Hyd. Backhoe</td><td>10-12m³</td><td>-</td></tr><tr><td>3</td><td>Rear Dumper</td><td>190-210T</td><td>-</td></tr><tr><td>4</td><td>Rear Dumper</td><td>100T</td><td>-</td></tr><tr><td>5</td><td>RBH Drill (Electric)</td><td>250mm</td><td>-</td></tr><tr><td>6</td><td>Dozer</td><td>850 HP</td><td>-</td></tr><tr><td>7</td><td>Dozer</td><td>410 HP</td><td>-</td></tr><tr><td colspan="4">B. COAL WINNING</td><td></td><td></td></tr><tr><td>1</td><td>Diesel Hyd. Shovel</td><td>10-12m³</td><td>1</td><td>2</td><td>2</td></tr><tr><td>2</td><td>Diesel Hyd. Backhoe</td><td>10-12m³</td><td>1</td><td>1</td><td>1</td></tr><tr><td>3</td><td>Rear Dumper</td><td>85T</td><td>-</td><td>-</td><td>-</td></tr><tr><td>4</td><td>Rear Dumper</td><td>100T</td><td>21</td><td>20</td><td>20</td></tr><tr><td>5</td><td>RBH Drill (Diesel)</td><td>160mm</td><td>4</td><td>6</td><td>6</td></tr><tr><td>6</td><td>Dozer</td><td>410 HP</td><td>4</td><td>3</td><td>3</td></tr><tr><td colspan="4">C. COMMON</td><td></td><td></td></tr><tr><td>1</td><td>FE Loader*</td><td>5.74/6.4m³</td><td>1</td><td>1</td><td>1</td></tr><tr><td>2</td><td>FE Loader*</td><td>10-12m³</td><td>-</td><td>1</td><td>1</td></tr><tr><td>3</td><td>Motor Grader</td><td>280 HP</td><td>4</td><td>4</td><td>4</td></tr><tr><td>4</td><td>Hyd. Backhoe</td><td>2.8/3.5 m³</td><td>1</td><td>2</td><td>2</td></tr><tr><td>5</td><td>Mobile Crane</td><td>30-50T</td><td>1</td><td>2</td><td>2</td></tr><tr><td>6</td><td>Mobile Crane</td><td>8-10T</td><td>1</td><td>5</td><td>5</td></tr><tr><td>7</td><td>Wheel Dozer/Dozer</td><td>410 HP</td><td>1</td><td>1</td><td>1</td></tr><tr><td colspan="4">D. RECLAMATION</td><td></td><td></td></tr><tr><td>1</td><td>Dozer</td><td>410 HP</td><td>-</td><td>5</td><td>5</td></tr><tr><td>2</td><td>Motor Grader</td><td>280 HP</td><td>-</td><td>3</td><td>3</td></tr><tr><td>3</td><td>Water Sprinkler</td><td>28 KL</td><td>4</td><td>2</td><td>2</td></tr><tr><td>4</td><td>Water Sprinkler</td><td>70KL</td><td>-</td><td>2</td><td>2</td></tr><tr><td>5</td><td>Road Sweeping Machine</td><td>-</td><td>-</td><td>1</td><td>1</td></tr><tr><td>6</td><td>Mist SprayGun</td><td></td><td>-</td><td>2</td><td>2</td></tr></table>					SI No	HEMM	SIZE / CAP .	EXISTING AS ON 01.04.22	AS PER APPROVED OPTION OF EPR (8 Mtpa)	Proposed in Mining Plan	A. OB REMOVAL						1	Electric Rope Shovel	20m³	-	Outsourcing	Outsourcing	2	Diesel Hyd. Backhoe	10-12m³	-	3	Rear Dumper	190-210T	-	4	Rear Dumper	100T	-	5	RBH Drill (Electric)	250mm	-	6	Dozer	850 HP	-	7	Dozer	410 HP	-	B. COAL WINNING						1	Diesel Hyd. Shovel	10-12m³	1	2	2	2	Diesel Hyd. Backhoe	10-12m³	1	1	1	3	Rear Dumper	85T	-	-	-	4	Rear Dumper	100T	21	20	20	5	RBH Drill (Diesel)	160mm	4	6	6	6	Dozer	410 HP	4	3	3	C. COMMON						1	FE Loader*	5.74/6.4m³	1	1	1	2	FE Loader*	10-12m³	-	1	1	3	Motor Grader	280 HP	4	4	4	4	Hyd. Backhoe	2.8/3.5 m³	1	2	2	5	Mobile Crane	30-50T	1	2	2	6	Mobile Crane	8-10T	1	5	5	7	Wheel Dozer/Dozer	410 HP	1	1	1	D. RECLAMATION						1	Dozer	410 HP	-	5	5	2	Motor Grader	280 HP	-	3	3	3	Water Sprinkler	28 KL	4	2	2	4	Water Sprinkler	70KL	-	2	2	5	Road Sweeping Machine	-	-	1	1	6	Mist SprayGun		-	2	2
		SI No	HEMM	SIZE / CAP .	EXISTING AS ON 01.04.22	AS PER APPROVED OPTION OF EPR (8 Mtpa)	Proposed in Mining Plan																																																																																																																																																																													
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		2	Diesel Hyd. Backhoe	10-12m³	1	1	1																																																																																																																																																																													
		3	Rear Dumper	85T	-	-	-																																																																																																																																																																													
		4	Rear Dumper	100T	21	20	20																																																																																																																																																																													
		5	RBH Drill (Diesel)	160mm	4	6	6																																																																																																																																																																													
		6	Dozer	410 HP	4	3	3																																																																																																																																																																													
		C. COMMON																																																																																																																																																																																		
		1	FE Loader*	5.74/6.4m³	1	1	1																																																																																																																																																																													
		2	FE Loader*	10-12m³	-	1	1																																																																																																																																																																													
		3	Motor Grader	280 HP	4	4	4																																																																																																																																																																													
		4	Hyd. Backhoe	2.8/3.5 m³	1	2	2																																																																																																																																																																													
		5	Mobile Crane	30-50T	1	2	2																																																																																																																																																																													
		6	Mobile Crane	8-10T	1	5	5																																																																																																																																																																													
		7	Wheel Dozer/Dozer	410 HP	1	1	1																																																																																																																																																																													
		D. RECLAMATION																																																																																																																																																																																		
		1	Dozer	410 HP	-	5	5																																																																																																																																																																													
		2	Motor Grader	280 HP	-	3	3																																																																																																																																																																													
		3	Water Sprinkler	28 KL	4	2	2																																																																																																																																																																													
		4	Water Sprinkler	70KL	-	2	2																																																																																																																																																																													
		5	Road Sweeping Machine	-	-	1	1																																																																																																																																																																													
6	Mist SprayGun		-	2	2																																																																																																																																																																															

CHAPTER 4

SAFETY MANAGEMENT

	Parameters	Details
4.1	Safety Management	
4.1.1	Important safety aspects:	<p>Safety of men and machine deployed in the mining area should be properly taken care of irrespective of whether the mining activities are performed by departmental or by outsourcing means.</p> <p>All the the statutory provisions laid down in The Mines Act 1952, Coal Mine Regulation 2017 and specific permission from DGMS relating to mining in general and opencast mining in particular have to be adhered to and implemented in order to maintain day to day safety.</p> <p>1) SAFETY ASPECTS FOR OF HEMM / EQUIPMENT</p> <p>Special precaution should be taken while deploying workers in the mine. Before employing any person to the mine proper vocation training should be imparted and recommendations of various Safety Conferences should be strictly followed. Some of the major aspects are as follows:-</p> <p>A) For persons :</p> <p>i) No persons shall be deployed unless he is trained at VTC and holds VTC Certificates. A record of the same shall be maintained.</p> <p>ii) Records in Form-B and Form-D shall be maintained.</p> <p>iii) Records of driving license of operators shall be kept by competent authority and shall be made readily available for inspection by management.</p>

	Parameters	Details
		<p>iv) Adequate supervision shall be maintained by competent persons, including officials and technicians.</p> <p>B) For Machineries : Provisions of Regulation 109, 110, 216 & 217 of CMR 2017 and DGMS Cir. (Tech.) 1 of 1999 should be strictly adhered to along with the following:</p> <p>i) All machinery and plant used in connection with working of a mine shall be of good design, sound construction, and suitable material, adequate strength, free from patent defect and properly maintained.</p> <p>ii) The owner, agent and manager shall provide adequate training facilities and ensure proper training of persons employed for operation and maintenance of machinery and plant.</p> <p>iii) No person except an engineer or other competent person under his supervision shall undertake any work on machinery and plant in which technical knowledge or experience is required.</p> <p>iv) All the machineries to be deployed in mines shall be so designed as to afford the operator clear and uninterrupted vision all around.</p> <p>v) Every heavy earth moving machineries, including trucks and tippers, used in mine shall be fitted with adequate safety features or devices as specified by DGMS. All equipment shall be provided with audio-visual alarms, proper light for use at night and fitted with suitable type of the fire extinguishers.</p> <p>vi) Truck mounted drill machines designed for tube well drilling for sources of water shall not be used</p>

	Parameters	Details
		<p>and only proper type of blast hole drill machine, especially designed for mining purpose, shall be used in the mine.</p> <p>vii) Every heavy earth moving machinery shall be under the charge of a competent person (Operator or Driver), authorized in writing by the Manager.</p> <p>viii) All persons employed or to be employed to operate heavy earth moving machinery shall be trained and their competency shall be evaluated by a Board constituted by the management, who shall be persons who are not connected with imparting of training.</p> <p>ix) A proper record of repair and maintenance along with inspection done by competent authority and defect pointed out shall be maintained and signed by authorized person.</p> <p>x) Only such fitters or mechanics possessing driver's or operator's license, shall be allowed to carry out test-run of heavy earth moving machineries.</p> <p>xi) No person other than the operator or the driver or any person so authorised in writing by the manager shall be allowed to ride on a heavy earth moving machinery</p> <p>C) General:</p> <p>i) Every person shall strictly adhere to the provisions of the Act and of the rules and regulations and to any order or direction issued by the manager or an official with a view to the safety or convenience of persons not being inconsistent with the Act, rules and these regulations; nor shall he neglect or refuse to obey such orders or directions.</p>

	Parameters	Details
		<p>ii) Every person shall, immediately before proceeding to work and immediately after terminating work at the end of his shift have his name recorded in the appropriate register.</p> <p>iii) Risk Management Plan of tipper/pay loader shall be made and implemented.</p> <p>iv) All operators/drivers so authorised by the Manager shall observe the Regulation 62 and 63 of CMR 2017 and obey the systematic traffics rules prepared by management</p> <p>v) Before deploying workers they must be trained and briefed about safety aspects in opencast mine. However during course of execution of the work, if any accident occurs whether major or minor, the matter shall have to be immediately informed to mine management i.e. Colliery Manager/Agent/GM of Area so that Notices of accidents in a accordance of (Reg. 8 of CMR 2017) and Section 23 of The Mines Act 1952 may be given and other necessary steps may be taken in accordance with the Mines Act 1952.</p> <p>vi) Mine authority shall operate transport system in such a way so as to minimize pollution in the mine.</p> <p>2) STABILITY OF BENCHES, QUARRY HIGHWALLS AND SPOIL DUMPS</p> <p>During quarry operations, it is necessary to adopt required mining parameters for the stability of benches, highwalls and spoil dumps. It is also mandatory to examine systematically the fencing of mine workings, landslides and cracks between benches. It is required to maintain well-graded and wide roads on benches keeping the width of</p>

	Parameters	Details
		<p>working areas sufficient for spreading of blasted rock and movement of the mining and transport equipment.</p> <p>During actual mining operation, systematic observations of the condition of benches, high wall slopes and spoil dumps should be carried out and the dimensions be modified if necessary to suit the local conditions. To ascertain the optimum slope angles for stability of quarry benches, highwalls and spoil dumps, scientific study of slope stability along with hydro-geological study of the area needs to under taken.</p> <p>During actual mining operation, systematic observations of the condition of benches, high wall slopes and spoil dumps should be carried out and the dimensions be modified if necessary to suit the local conditions.</p> <p>Provisions laid down in Reg. 106 and 108 of the Coal Mines regulation 2017 shall be strictly adhered to for the safety of quarry and OB/ spoil dumps. In addition to this, the following precaution should be considered:</p> <p>i) The spoil dump height should not exceed 90m from immediate surface level with an overall slope of 28° or less. In case dump height exceeds 90m height scientific study should be done ascertaining stability of dump before actual dumping operation. In the event of encountering steep floor gradient, floor blasting should be done and the area properly levelled by dozer before spoil dumping. In the event of encountering steep floor gradient, floor blasting</p>

	Parameters	Details
		<p>should be done and the area properly levelled by dozer before spoil dumping.</p> <p>ii) No working or construction should be allowed within the 60m toe of the OB dump.</p> <p>iii) Before dumping the OB on the floor of seam, at least 10m length all along the strike length should be made horizontal at every 50 meter by floor dinting/blasting.</p> <p>iv) Dump should be created in such a way that there is no chance of accumulation of water in and around the base of dump as it will adversely affect the shear strength of the base material of dump. It must be ensured that there is no stagnant water at the toe of dump and the top of the dump.</p> <p>v) The toe and face of the dump should not be eroded or cut at any point of time to avoid slope failure. A suitable toe wall should be created along the dump periphery.</p> <p>vi) Formation of dumping should be done in square or circular or any regular shape as far as possible.</p> <p>vii) Proper drainage system should be provided to bring down rain water by construction of inclined drain on dump face and catch drain on all benches.</p> <p>viii) During active period of dump, all rain water should be diverted away from mining site as far as possible.</p> <p>ix) Sump and pumping capacity should be sufficient to accommodate peak surface run-off and seepage of water.</p>

Parameters	Details
	<p>x) Gabion wall and garland drain should be constructed and maintained to trap the surface run-off and sludge coming from dump.</p> <p>xi) Plantation and grassing should be done on top and slope of the dump respectively.</p> <p>xii) Regular monitoring is required for development of tension crack, gullies, movement of soil mass, stagnation of water and any other unusual occurrence. In case of dump movement, rate of movement of dump should be monitored. Special attention should be given at curve area/turning area of the dump.</p> <p>3) PRECAUTIONS AGAINST DANGER OF INUNDATION FROM SURFACE WATER</p> <p>i) Adequate protection against any danger of inrush of surface water into the mine or part shall be provided and maintained to the satisfaction of DGMS, whose decision shall be final.</p> <p>ii) The entrance into the mine shall be so designed, constructed and maintained that its lowest point (which means the point at which a body of rising water on surface can enter the mine) shall be not less than 3.0 meters above the highest flood level at that point.</p> <p>iii) Every year, during the rains constant watch shall be kept on the flood levels on the surface of the mine and if at any time the levels cross the highest levels earlier recorded, such levels shall be marked by permanent posts along the edges of water and the new highest levels thus observed shall be</p>

	Parameters	Details
		<p>recorded with the date as the highest flood level on the plans by an actual survey.</p> <p>iv) If water dams or reservoirs are built across rivers and water courses on the upstream side of the mine, arrangements shall be made for communication between appropriate authorities for the purpose of ascertaining the quantity and timing of water released from the dams which is likely to endanger safety of the mine and arrangement for similar communication shall be made when water level rises on the upstream side which is likely to endanger the mine.</p> <p>v) The highest flood levels and danger levels at least 1.2 meters below the highest flood level, shall be permanently marked at appropriate places on the surface and whenever water rises towards the danger level at any place, all persons shall be withdrawn from the mine sufficiently in advance and for this purpose adequate arrangements of quick communication to all parts of the mine by effective systems shall be provided and maintained.</p> <p>vi) No working shall be made in the mine at any spot lying within a horizontal distance of 15 meters from either bank of a river or nala.</p> <p>vii) A competent person shall, once at least in every fourteen days during the rainy season and once at least in every thirty days during other periods of the year, examine every protective measure provided under regulations 149, whether in use or not, for their stability, and a report of every such examination shall be recorded. The protective measures and workings shall also be inspected,</p>

	Parameters	Details
		<p>once at least in every quarter by the Manager personally.</p> <p>viii) A careful assessment is to be made against the danger from surface water before the onset of rainy season. The necessary precautions should be clearly laid down and implemented. A garland drain needs to be provided to drain away the surface rainwater from coming into the mine.</p> <p>ix) An embankment, 3.0m above the HFL, along the Bokaro River and Naktinala should be made. Inspections for any accumulation of rainwater, obstruction in normal drainage and weakening in the embankment should be made.</p> <p>x) Standing order for withdrawal of working persons in case of apprehended danger. During heavy rain inspection of vulnerable points is essential. In case of any danger persons are to be withdrawn to safer places.</p> <p>4) PROTECTION OF EQUIPMENT DEPLOYED AT BOTTOM HORIZONS FROM FLOODING:</p> <p>During the heavy monsoon period, the mining operation in the lower-most bench may have to be stopped. Therefore, it is proposed to drown the lower-most bench, which would work as a sump. The water will be pumped out and discharged into the nearby nala/ river after proper sedimentation.</p> <p>For ensuring safety of the equipment while working out bottom horizons with no access to surface profile, the following measures should be taken:</p>

	Parameters	Details
		<p>i) Drivage of initial trenches if any and coal cutting on bottom benches should be done during the dry period of the year.</p> <p>ii) Ramps should be made for quick shifting of equipment from bottom horizons, liable to be flooded during monsoon period, to the top horizons.</p> <p>5) PREVENTION OF ELECTRIC SHOCKS :</p> <p>During mining operations, all the statutory provisions of the Indian Electricity Rules 1956, and Indian Standards for installation and maintenance of electrical equipment etc. should be observed.</p> <p>i) For protection from electric shocks to persons, all electrical equipment with voltage up to 1000V should be provided with Earth Leakage Relay, which will automatically disconnect electrical circuits.</p> <p>ii) Closed mobile substations and switchgears should be mechanically interlocked which exclude the possibility of opening the door when oil switch and air circuit breakers are in operation.</p> <p>iii) All metal parts of electrical equipment should be properly earthed to avoid failure of insulation.</p> <p>iv) All H.T lines and cables located within the blasting zones should be disconnected during charging & blasting operations.</p> <p>6) DUST SUPPRESSION & DILUTION OF EXHAUST FUMES :</p> <p>For precaution against dust, Regulation 143, 144 and 145 of CMR 2017 should be observed. Beside this the following measures should be adopted for</p>

	Parameters	Details
		<p>dust suppression at all quarry working places, dumps, haul roads, CHP and near other auxiliary mining operations.</p> <p>i) Spraying with water on all working faces & haul roads, by special spraying machines or water-sprinkler.</p> <p>ii) While drilling holes, it is necessary to use dust extraction devices.</p> <p>iii) Installation of local dust suppression and air conditioning devices in cabins of excavators and drilling rigs may be considered.</p> <p>iv) Leveling of spoil dump surface.</p> <p>v) Separate dust suppression arrangement should be provided for CHP.</p> <p>To prevent collection of harmful mixtures in the atmosphere, from the different sections of quarry workings, it is recommended:-</p> <p>To spread out the sources of dust formation and omission of harmful gases throughout the working area of the quarry, the following precautions should be taken:</p> <p>i) Drilling & blasting operations should be timed for periods of maximum wind activity during the day.</p> <p>ii) Dumpers may be provided with purifiers for exhaust gases.</p> <p>7) MEASURES TO BE TAKEN FOR FIRE FIGHTING AND FIRE PREVENTION :</p> <p>In addition to statutory provisions as laid down in Reg 135, 139 and 140 of CMR 2017, the measures for firefighting and prevention of fires are as follows:</p>

	Parameters	Details
		<p>i) Organisation of special cell for systematic observations to examine and prevent fire.</p> <p>ii) Removal of spillage of coal on benches and cleaning of coal horizons to prevent cases of coal heating.</p> <p>iii) Storage of lubricants and cotton waste in enclosed fireproof containers in working places.</p> <p>iv) Provision of fire extinguishers.</p> <p>8) MEASURES TO BE TAKEN WHILE WORKING ABOVE UNDERGROUND GALLERIES :</p> <p>In addition to provisions laid down in DGMS Circulars (Tech. 2 & 3 of 1980, Tech. 11/1979), the additional measures for extracting pillars by opencast method are as follows:</p> <p>i) Quarry shall be worked by Heavy Earth Moving Machinery only. No manual operation in the quarry will be done.</p> <p>ii) HEMMs, except drilling machines shall not be deployed on the bench where thickness of coal or overburden above the UG galleries, as proved by advance boreholes or other suitable methods, is less than 6m.</p> <p>iii) Exposed coal faces (including UG galleries shall be kept covered with fine grained incombustible OB material to prevent breathing of air and control fire to dip side working. This cover shall be removed only at the time of coal extraction.</p> <p>iv) Overburden containing carbonaceous material shall not be dumped within 30m of the exposed side of the coal benches. Hot overburden shall be quenched and cooled at dump sites.</p>

	Parameters	Details
		<p>v) No person shall be allowed at any place in the opencast working where the thickness of overburden and/or coal over any gallery is less than 1.5m.</p> <p>vi) Except for the purpose of inspection and support work no person shall be allowed in the underground mine beneath and within 200m of the opencast excavation. The person visiting UG will take all safety precautions for safe working.</p> <p>vii) Blasting in fire area</p> <p>No explosive other than slurry and emulsion explosive shall be used.</p> <p>Blasting shall be done with detonating fuse down the hole. Fresh drill holes should be tightly plugged at the mouth.</p> <p>Temperature inside the hole shall be measured by bi-metallic thermocouple heat sensor (before filling with water) and if the temperature exceeds 80°C in any hole, the hole will not be charged.</p> <p>All blast holes shall be kept filled with water. When any hole is traversed by cracks or fissures the hole shall not be charged unless it is lined with an asbestos pipe and the hole filled with water. In addition, bentonite should be used for sealing any cracks at the bottom of the hole.</p> <p>Detonating fuse shall not be laid on hot ground without taking suitable precautions.</p> <p>Charging and firing of holes in any one round shall be expeditiously completed and in any case within 2 hours.</p>

	Parameters	Details
		<p>A parting of at least 2m between the bottom of a short hole and roof of underground gallery shall be left intact.</p> <p>Effective muffling of hot shot holes with old wire rope screens shall be done for prevention of flying hot fragments.</p> <p>No blasting shall be done in crushed or broken ground.</p> <p>No person shall be employed within 150m when blasting the heated material.</p> <p>The spacing of hole in the coal/OB benches lying immediately above the galleries shall be so adjusted that the holes do not lie immediately above the galleries in order to ensure that blast holes do not directly fire into the underground working.</p> <p>All holes in the coal/OB benches lying immediately above the galleries shall be charged with water impulses or with moist sand of at least 0.6m in length at the bottom of the hole.</p> <p>No person including a shot firer shall take shelter within 100m of the quarry opening. Such shelter shall be of an approved design.</p> <p>9) MEASURES TO BE TAKEN WHILE DRILLING BLASTING :</p> <p>Following measures should be taken during drilling and blasting operation in the quarry beside the statutory requirements:</p> <p>i) Drilling and Blasting in quarry should be done in accordance with the provisions of Mines Act, rules</p>

	Parameters	Details
		<p>and regulations and based on the Standing Orders for the safe use of explosives.</p> <p>ii) Adequate safety measures have to be taken during blasting operation in the quarry so that men/machine is not affected.</p> <p>10) CONSERVATION</p> <p>Suitable measures should be taken to minimize coal loss during mining operations. Selective mining of in-seam dirt bands has been proposed. It is proposed not to dump any spoil material over coal bearing area, amenable for mining, at present or even at a future date.</p> <p>11) SCIENTIFIC STUDIES</p> <p>The slopes of the quarry and dumps have been proposed on the basis of experience in the adjoining areas. However, to ascertain optimum slope angles for stability of quarry batter and dumps a scientific study need be carried out. In case dump height exceeds 90m height scientific study should be done ascertaining stability of dump before actual dumping operation. In the event of encountering steep floor gradient, floor blasting should be done and the area properly levelled by dozer before spoil dumping. Similarly, hydro-geological study of the area is to under taken as none is available at present. Studies should also be carried out to ascertain the pattern of surface drainage, the manner of diversion of water courses to other water courses away from the mining area and the dimension of diversion dams, garland drains and other protective structures to be constructed.</p>

CHAPTER 5

INFRASTRUCTURE FACILITIES

	Parameters	Details
5.1	Mine infrastructure required e.g. Equipment maintenance planning, Office buildings, Workshop, Power Supply arrangement, Water supply, etc.	<p>Block-B OCP (3.5 Mtpa) is in operation since 23.03.2007. All infrastructure like Equipment maintenance planning, Office buildings, Workshop, Power supply arrangement, Water supply etc. are in place.</p> <p>However, for EPR of Block-B OCP (8 Mtpa), additional infrastructure/ extension of existing infrastructure is proposed.</p> <p>The overburden processing plant for generation of manufactured sand additionally involves installation of machinery over an area of 4 Ha.</p>
5.2	Power supply & illumination	<p>This project will receive power at 33kV by two single circuit overhead lines from 132/33kV Madhuli Substation of NCL.</p> <p>At 8 Mtpa stage, 3 Nos. 10 MVA, 33/6.6kV (each) has been proposed for Option-II power supply arrangement of Block-B OCP.</p> <p>The general area of the quarry would be illuminated by 2 x 150W LED lamps mounted on 15 m high fabricated tower installed all along the quarry workings and near substation.</p> <p>The haul road would be illuminated by 120 W LED lamps mounted on poles all along the haul road. On each pole two fixtures would be installed to illuminate both sides of the pole.</p> <p>Spoil dumps would be illuminated by 120 W LED flood lights installed on steel tubular poles.</p>
5.3	Drainage & Pumping:	The planning of de-watering of the mine has been done in such a way that as far as possible the working faces and haul roads remain dry. The layout of the quarry provides suitable

	Parameters	Details
	Assessment of volume of water for Pumping, Pumping Capacity	<p>gradient along the quarry floors and the benches to facilitate self-drainage of water to the lowest level of the quarry.</p> <p>Two sumps are proposed for collecting the rain as well as strata water inflow into the quarry workings. The first sump will be located near the fault F5-F5 between Vindhya I and Vindhya II sections. The second sump will be located centrally in the dip –most side of Gorbi-B & C sub-blocks.</p> <p>Capacity of sump has been decided to accommodate rain water corresponding to maximum daily rainfall.</p> <p>Total make of water: 6440150 m³ (Gorbi B&C) and 198045 m³ (Vindhya I&II)</p> <p>Above volume of water will be dewatered in 5 days at the rate of 20 hours pumping per day.</p> <p>Total pumping capacity per hour : 8382 m³ (For B&C, I&II)</p> <p>Drainage of Water on Surface</p> <p>Fresh garland drains shall be made before every monsoon at the peripherally of active edge of the quarry to prevent the surface rain water to enter the quarry.</p> <p>A sedimentation pond/ lagoon shall be made between the qualities and mine water will be discharged into it. After sedimentation of suspended particles, the fresh water will be discharged in to river/nallah.</p>
5.4	Coal Handling Arrangement: Brief detail of CHP/ Mode of Dispatch, Coal	<p>A Coal Handling Plant for 8.0 Mtpa coal production has been envisaged in Expansion Recast EPR for Block-B Opencast Project. The Coal Handling Plant shall receive ROM coal from Rear discharge dumper, crush the coal to (-) 100 mm size by Gyratory crusher and secondary sizer, store and reclaim the coal from bunker and will be dispatched by existing Silo and loading on wagons through railway siding which is under construction. The ROM coal shall be crushed from (-) 1500 mm to (-) 250 mm size by primary crusher (semi-mobile</p>

	Parameters	Details
	quality and coal staking and handling arrangement	<p>crushing plant) and further crushed to (-) 100 mm size by secondary twin shaft sizer and then it is stored in the ground bunker for further transport by railway wagon. The semi-mobile crusher plant initially will be installed near the mouth of the mine in future this plant will be shifted in the face of the mine as per requirement.</p> <p>The coal handling plant has been provided with facilities such as pollution control, proper communication, firefighting, water supply, rest room, office maintenance and repair room, lifting tools and tackles, approach road, proper drainage, automatic measuring and monitoring instruments etc.</p> <p>Transportation of Sand : The segregated sand from OB will be despatched to the customers through tarpaulin covered trucks</p>
5.5	Coal washing and the proposed handling/ disposal of rejects.	NA

CHAPTER 6

LAND REQUIREMENT


	Parameters	Details																																																					
6.1	LAND REQUIREMENT																																																						
6.1.1	Total Land requirement for the mine in “Ha”	<div>Break up of pre-mining land type (indicative) and source of data.</div> <table><tr><th colspan="2">Land Type</th><th>Area</th></tr><tr><td rowspan="7">Tenancy</td><td>Agricultural</td><td rowspan="7">526.50</td></tr><tr><td>Township</td></tr><tr><td>Grazing</td></tr><tr><td>Barren</td></tr><tr><td>Water Bodies</td></tr><tr><td>Road</td></tr><tr><td>Community/ other use</td></tr><tr><td rowspan="4">Govt Non Forest</td><td>Agricultural</td><td rowspan="4">643.41</td></tr><tr><td>Township</td></tr><tr><td>Grazing</td></tr><tr><td>Barren/ other use</td></tr><tr><td rowspan="3">Forest</td><td>Reserve</td><td rowspan="3">586.86</td></tr><tr><td>Protected</td></tr><tr><td></td></tr><tr><td>Freehold</td><td></td><td>-</td></tr><tr><td rowspan="2">Land in physical possession</td><td>Forest</td><td>447</td></tr><tr><td>Non-Forest</td><td>1083.96</td></tr><tr><td>Total</td><td></td><td>1756.77</td></tr></table>	Land Type		Area	Tenancy	Agricultural	526.50	Township	Grazing	Barren	Water Bodies	Road	Community/ other use	Govt Non Forest	Agricultural	643.41	Township	Grazing	Barren/ other use	Forest	Reserve	586.86	Protected		Freehold		-	Land in physical possession	Forest	447	Non-Forest	1083.96	Total		1756.77																			
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6.1.2	Land Use During Mining																																																						
	<table><tr><th rowspan="2">Type</th><th rowspan="2">Land use (Proposed)</th><th rowspan="2">Land Use (End of Life)</th><th colspan="6">Land Use (Post Closure)</th></tr><tr><th>Agricultural land</th><th>Plantation</th><th>Water Body</th><th>Public / Company Use</th><th>Forest Land (Returned)</th><th>Undisturbed</th><th>Total</th></tr><tr><td>Excavation Area</td><td>709.57</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Backfilled Area</td><td></td><td>461.06</td><td></td><td>461.06</td><td></td><td></td><td></td><td></td><td>461.06</td></tr><tr><td>Excavated Void</td><td></td><td>248.51</td><td></td><td></td><td>248.51</td><td></td><td></td><td></td><td>248.51</td></tr></table>									Type	Land use (Proposed)	Land Use (End of Life)	Land Use (Post Closure)						Agricultural land	Plantation	Water Body	Public / Company Use	Forest Land (Returned)	Undisturbed	Total	Excavation Area	709.57									Backfilled Area		461.06		461.06					461.06	Excavated Void		248.51			248.51				248.51
Type	Land use (Proposed)	Land Use (End of Life)	Land Use (Post Closure)																																																				
			Agricultural land	Plantation	Water Body	Public / Company Use	Forest Land (Returned)	Undisturbed	Total																																														
Excavation Area	709.57																																																						
Backfilled Area		461.06		461.06					461.06																																														
Excavated Void		248.51			248.51				248.51																																														

	Parameters	Details								
	Without plantation									
	Top Soil Dump									
	External Dump	523.10	523.10		523.10					523.10
	Safety Zone	18.08	18.08						18.08	18.08
	Haul Road between quarries									
	Road diversion									
	Diversion / below River/Nala/canal									
	Settling pond									
	Road & Infrastructure area	99.45	99.45				99.45			99.45
	Rationalization area									
	Garland drains									
	Embankment									
	Green Belt	402.57	402.57						402.57	402.57
	Water Reservoir near pit									
	UG entry									
	Undisturbed/ Mining right for UG									
	Resettlement									
	Sand segregation plant Area	4.0	4.0				4.0			4.0
	Water harvesting									
	Agricultural land									
	Total	1756.77	1756.77	0.00	984.16	248.51	103.45	0.00	420.65	1756.77

	<i>Parameters</i>	<i>Details</i>
6.1.3	Surface features over the block area	Coal Mine and infrastructure.
6.1.4	No. of villages/ Houses to be shifted	207 PAFs have to be rehabilitated.
6.1.5	Population to be affected by the project	
6.1.6	Proposed Rehabilitation programme	R&R Programme as per CIL Policy.

CHAPTER 7

ENVIRONMENTAL MANAGEMENT

	<i>Parameters</i>	<i>Details</i>
7	ENVIRONMENTAL MANAGEMENT	
7.1	Commitment from the project proponent that the company will comply Environment and Forest Condition stipulated in the respective clearances	<p>In order to carry out the proposed mining activity in an environmentally sustainable manner, suitable environmental protection measures shall be taken up at different stages of project operation and post closure. A certificate of commitment from Project Proponent that the project will comply with the conditions stipulated in the Environmental Clearance and Forest Clearance is given below.</p> <p>In addition to this, some environmental protection measures have been suggested as a part of mine closure activities, as detailed in the section 8.10 in this report.</p> 

CHAPTER 8

PROGRESSIVE & FINAL MINE CLOSURE PLAN

	Parameters	Details							
8.1	Land Degradation and restoration Schedule								
8.1.1	Tentative Land Degradation and Technical Reclamation (Commutative Area "Ha")								
	Year/Stage	Land Degraded Area in Ha				Technically Reclaimed Area			
		Excav	Dump (Extn + Top Soil)	Infra/ othes	Total	Backfill	Dump (Extn + Top Soil)	Others	Total
	Up to Base year (01.04.22)	307.69	289.76	120.46	717.91	166.46	106.88		273.34
	Y-1	352.00	380.00	120.46	852.46	166.46	206.88		373.34
	Y-3	433.36	523.10	120.46	1076.92	166.46	349.98		516.44
	Y-5	479.45	523.10	120.46	1123.01	215.00	523.10		738.10
	Y-10	623.28	523.10	120.46	1266.84	368.79	523.10		891.89
	Y-13	709.57	523.10	120.46	1353.13	461.06	523.10		984.16
	Post Closure	709.57	523.10	120.46	1353.13	461.06	523.10		984.16
8.1.2	Tentative Biological Reclamation (Cumulative in “Ha”)								
	Year/ Stage	Biologically Reclaimed Area in Ha.					Forest land Return (in Ha)	UnDisturb- ed / To be left for Public/ company Use	Total
	(Life of the mine plus post closure period)	Agricult ure	Plantati on	Water Body	Plain Area	Total			
	Up to Base year 01.04.22		101.88		420.65	522.53		103.45	625.98
	Y-1		151.88		420.65	572.53		103.45	692.99
	Y-3		223.43		420.65	644.08		103.45	747.53
	Y-5		334.26		420.65	754.91		103.45	858.36
	Y-10		459.26		420.65	879.91		103.45	983.36
	Y-13		505.40		420.65	926.05		103.45	1029.50
	Post Closure		984.16	248.51	420.65	1653.32		103.45	1756.77

	Parameters	Details								
8.2	Post Closure Water Quality management :	Water quality monitoring will be carried out quarterly during the post closure stage, as per the CPCB Norms and will be compared with the IS 10500:2012 & 2015. The actual end use and treatment measures, if any required will be decided at the post closure stage depending upon the quality of water.								
8.3	Post Closure Air Quality management	<p>Air quality monitoring will be carried out throughout the life of mine and at post closure stage to assess the impact of proposed activity on the surroundings.</p> <p>No. of location of stations shall be fixed as per the MoEFCC norms and prevailing local factors.</p> <p>Air pollution control measures like development of greenbelt and avenue plantation, mobile water sprinkling along haul roads, fixed water sprinklers at stock yard, Crushers, CHP will be deployed to minimize the impact on surroundings.</p>								
8.4	Waste Management (Figures in M m³) (Tentative)									
	Year/Stage	OB Removal in Mm ³			External Dump		Internal Backfilling		Embankment	
	(Life of the mine plus post closure period)	(Cumulative)			(Cumulative)		(Cumulative)		(Cumulative)	
		Top Soil	OB	Total	Top Soil	OB	Top Soil	OB	Top Soil	OB
	Up to Base year 01.04.22	0.37	222.42	222.79	0.37	150.41		72.02		
	Y-1	0.37	254.51	254.88	0.37	169.65		84.86		
	Y-3	0.43	344.45	344.88	0.43	232.63		111.66		
	Y-5	0.55	444.33	444.88	0.55	289.64		153.76		
	Y-10	0.85	663.32	664.17	0.85	380.44		279.78		
	Y-13	1.09	687.46	688.55	1.09	386.44		299.16		
	Post Closure	1.09	687.46	688.55	1.09	386.44		299.16		

	Parameters	Details						
	There is shortage of dump space for 80.23 Mm ³ of OB, which will be dumped in neighbouring mines.							
	Total Top soil to be generated is 1.09 Mm ³ , and this total volume of top soil will be utilized for concurrent biological reclamation of dumps and green belt.							
8.5	Top Soil Management - (Including Action plan for Top Soil management) (Tentative)							
	(All Figures are Cumulative and in Mm ³)							
	Year / Stage	Top Soil Removal Plan	Top Soil Used					
	(Life of the mine plus post closure period)		Spreading Over Embank - ment	Spreading over Backfill area	Spreadin g over External OB Dump area	Used in Green Belt area & Safety Zone	Used in land Dismant - led	Total Utilised
	Up to Base year 01.04.22	0.37			0.37			0.37
	Y-1	0.37			0.37			0.37
	Y-3	0.43			0.43			0.43
	Y-5	0.55			0.55			0.55
	Y-10	0.85			0.85			0.85
	Y-13	1.09			1.09			1.09
	Post Closure	1.09			1.09			1.09
	Total Top soil to be generated is 1.09 Mm ³ , and this total volume of top soil will be utilized for concurrent biological reclamation of internal dumps and green belt.							
8.6	Management of Coal Rejects .		No washery proposed.					
8.7	Restoration of Land used for Infrastructure		It is proposed to restore land used for infrastructure by technical and biological reclamation by plantation.					
8.8	Disposal of Mining Machinery		Mining machinery will either be surveyed off or transferred to other projects of NCL based on the balance life of HEMM. Detailed					

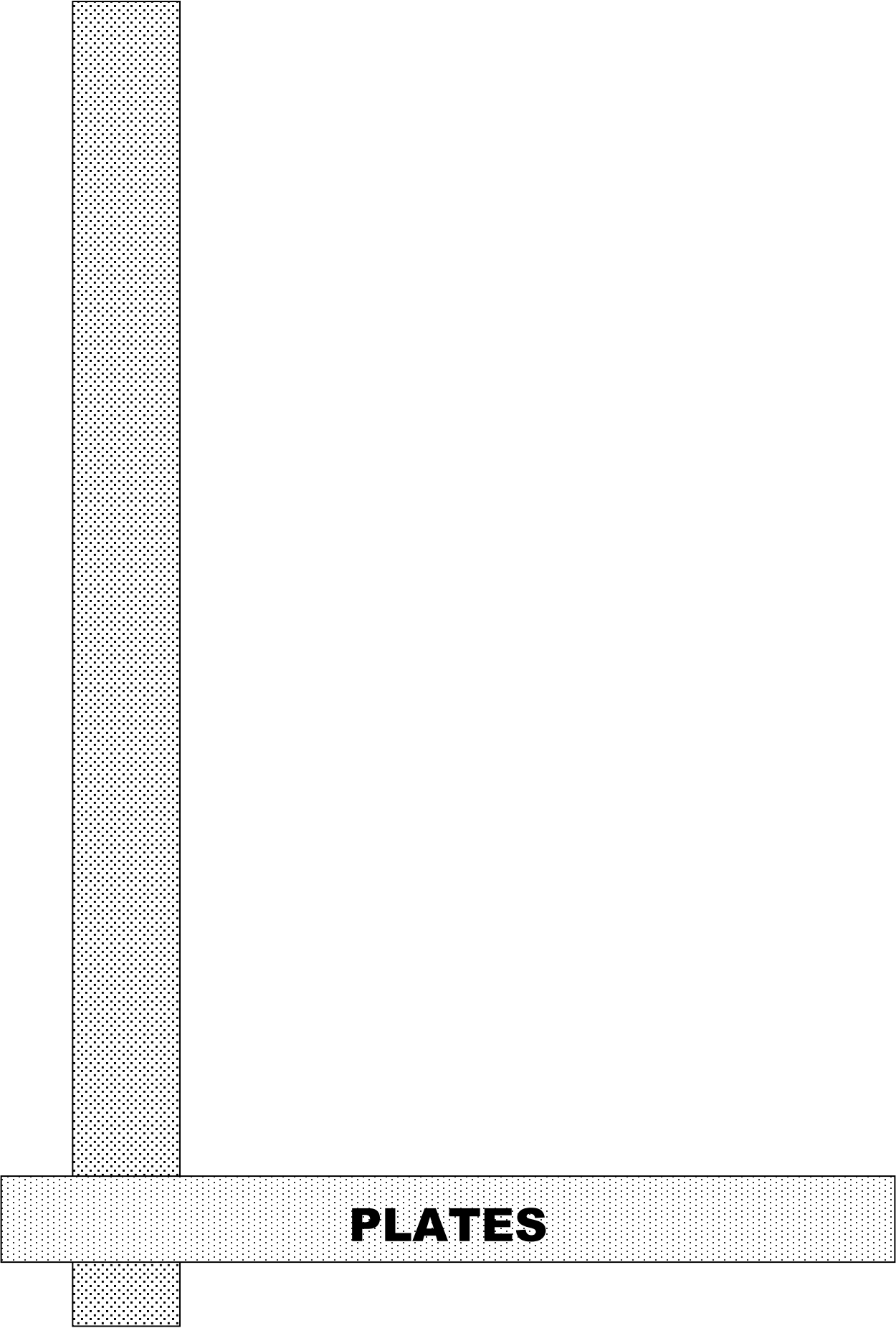
	Parameters	Details																																																															
		disposal plan will be submitted in Final Mine closure plan at 8 th year of mine operation.																																																															
8.9	Safety & Security	Safety measures proposed during operation and post closure stage include concrete wall along mine boundary, toe wall/gabion wall along OB dumps, fencing around water bodies, garland drains etc. The measures to taken up for safety and security have been discussed in detail in Section 4.1																																																															
8.10	Abandonment Cost and Financial Assurance																																																																
8.10.1	Abandonment Cost : Proposed Cost break-up for carrying out progressive and final mine closure activities as per the yardstick of CMPDI formulated based on the revised mine closure guidelines of MoC is as given below.																																																																
	<table><tr><th>Head</th><th>Activities</th><th>U nit</th><th>Qua ntity</th><th>Rate Rs/unit</th><th>Amt.</th><th>Amount in lakhs</th></tr><tr><td rowspan="12">Progressive closure</td><td>Water quality management (ETP & STP etc operating cost</td><td rowspan="3">LS</td><td></td><td></td><td></td><td rowspan="3">1273.19</td></tr><tr><td>Air quality management(Sprinkler,water tanker and other contro measures)</td><td></td><td></td><td></td></tr><tr><td>Waste management</td><td></td><td></td><td></td></tr><tr><td>Filling of void – Rehanding of Crown Dump</td><td rowspan="3">LS</td><td></td><td></td><td></td><td></td></tr><tr><td>Top soil management</td><td></td><td></td><td></td></tr><tr><td>Technical and Biological Reclamation of Mined out of land and OB Dump</td><td></td><td></td><td>11411.56</td></tr><tr><td>Plantation over virgin area including green bell</td><td></td><td></td><td></td><td></td></tr><tr><td>Manpower Cost and supervision</td><td></td><td></td><td></td><td></td></tr><tr><td>Barbed wire fencing around dump</td><td rowspan="4">LS</td><td></td><td></td><td></td><td rowspan="4">914.81</td></tr><tr><td>Barbed wire fencing around the pit</td><td></td><td></td><td></td></tr><tr><td>Retaining wall/Toe Wall around the Dump</td><td></td><td></td><td></td></tr><tr><td>Garland drain & Catch drains</td><td></td><td></td><td></td></tr></table>	Head	Activities	U nit	Qua ntity	Rate Rs/unit	Amt.	Amount in lakhs	Progressive closure	Water quality management (ETP & STP etc operating cost	LS				1273.19	Air quality management(Sprinkler,water tanker and other contro measures)				Waste management				Filling of void – Rehanding of Crown Dump	LS					Top soil management				Technical and Biological Reclamation of Mined out of land and OB Dump			11411.56	Plantation over virgin area including green bell					Manpower Cost and supervision					Barbed wire fencing around dump	LS				914.81	Barbed wire fencing around the pit				Retaining wall/Toe Wall around the Dump				Garland drain & Catch drains			
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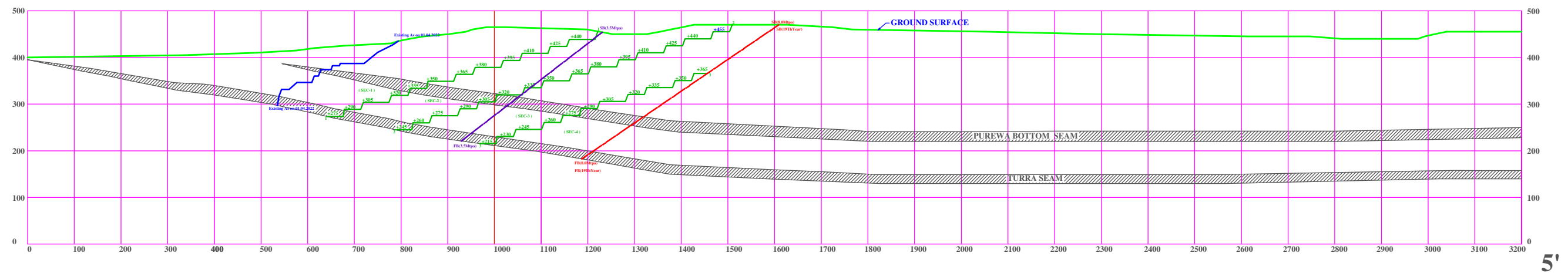
	Parameters		Details					
		Garland drain around the Dump						
		Cleaning of garland drains and catch drains						
	Dismantling of structure & Disposal /rehabilitation of Mining machinery	Dismantling of workshop	LS					801.64
		Rehabilitation of the dismantled facilities						
		Dismantling of pumps and pipes						
		Dismantling of stowing bunker						
		Dismantling of ug equipment						
		Rearranging water pipe line to dump toppark/agricultural land						
		Dismantling of power lines						
	Technical and Biological Reclamation of mined out land	Filling of Void						2518.09
		Top soil management						
		OB Rehandling for backfilling						
		Terracing, blanketing with soil and vegetation of External OB Dump						
		Panpheral road, gates, view point, cemented steps on bank	LS					
		Expenditure on development of Agriculture land						
		Landscaping and Plantation	LS					895.95
	Post cost management and supervision	Power cost	LS					301.79
		Post Mining Water quality management						
		Post Mining Air quality management						
		Subsidence monitoring						
		Waaste management						
		Manpower cost and supervision						
	Others	Enterprenuership development (vocational/skill development training for sustainable income of affected people	LS					141.47
		Golden handshake/Retrenchment benefits to 100 employees of OC	LS					603.59

Parameters		Details					
		Onetime financial grant to societies/institutions/organisations which is dependent on project					
		Provide jobs in other mines of the company					
		Continuation of other services like running of schools etc.					
	Total						18862.08

8.10.2	Financial Assurance: Amount to be deposited in Escrow account as a security against the mine activities to be carried out for the closure of the mine
ESCROW ACCOUNT	
<u>Block -B OCP</u>	
Project Area (Ha)	1756.77
Escrow Amount per Ha. For OC Project as on April, 2019 (lakhs/ Ha)	9
WPI as on April 2019	121.60
WPI as on Nov. 2022 (final)	152.50
Escrow Amount per Ha. For OC Project as on Nov. 2022 (lakhs/ Ha)	11.33
Current value of corpus as on November 2022	19904.2
Amount deposited as on 31.03.2022	6060.95
Balance Corpus for which provision is to be made	13843.25
Balance Life of mine	13
Annual corpus (Balance corpus / Balance life, in Rs. Lakh)	
Year	Amount in Lakh (Rs .)
1	1064.87
2	1118.11
3	1174.02
4	1232.72
5	1294.36
6	1359.08
7	1427.03
8	1498.38
9	1573.3
10	1651.97
11	1734.57
12	1821.3
13	1912.37
Total	18862.08
Total Mine closure cost (in Rs Lakhs)	



CROSS-SECTION - 5-5'



CROSS-SECTION - 10-10'

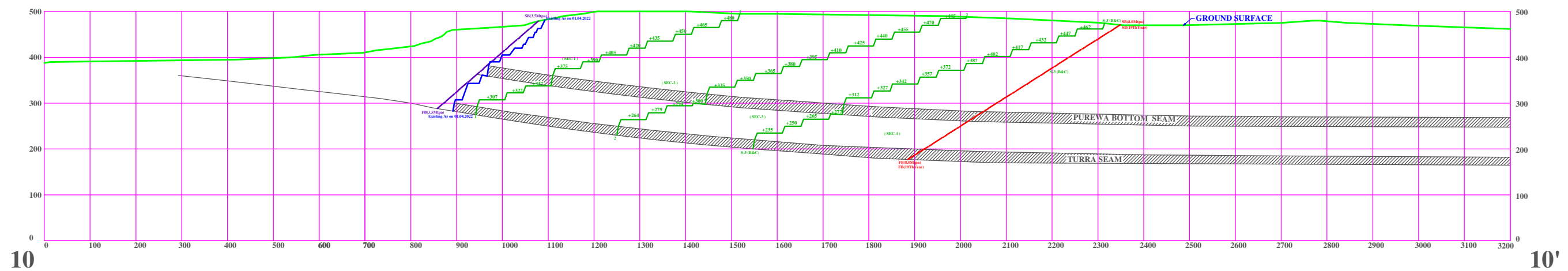


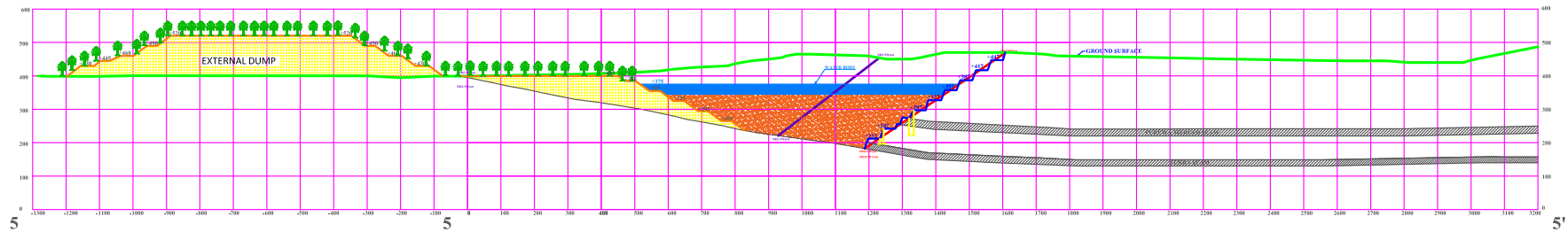
PLATE NO. - 8

CUSTOMER :		NORTHERN COALFIELDS LIMITED			
Job Title :	RECAST EPR For Block-B OCP (10.0 Mtpa)	Job No. :	212204164		
subject :	PLAN SHOWING THE QUARRY CROSS-SECTIONS ALONG 5.5° & 10.10°	Author/Design :	Name :	Designation :	Signature :
		Drawn By :	Name :	Designation :	
		Checked :	N. S. Meehan :	21-01-2016, P. 1 :	
		Approved :	Ajay Bhatnagar :	MD :	
		Scale :	1 : 4000		SHEET 4 OF 4

POST MINING DUMP CROSS SECTIONS

SHOWING DUMP PROFILE AT THE END OF MINING OPERATION

CROSS-SECTION - 5-5'



SHOWING DUMP PROFILE AT THE END OF MINING OPERATION

DUMP CROSS-SECTION - 11-11'

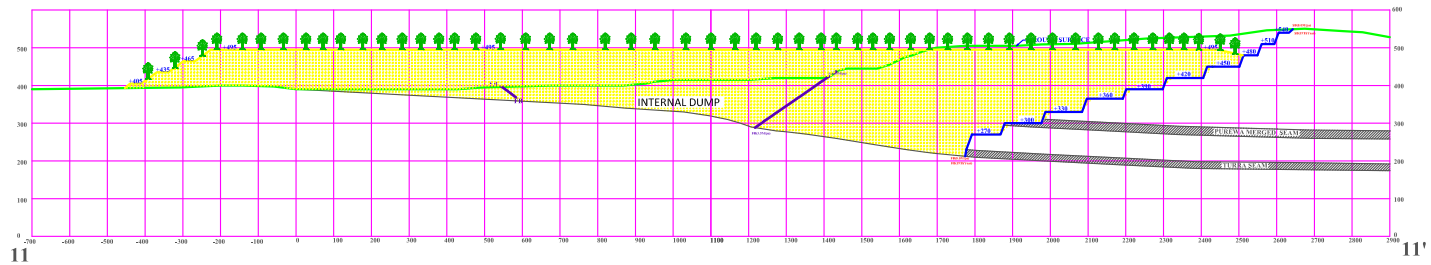



Plate-14

Customer :	NORTHERN COALFIELDS LIMITED
Job Title :	Mining Plan For Block-B OCP (10.0 Mtpa)
Subject :	Plan Showing Post Mining Dump Cross Sections
	Scale - 1 : 10000



ANNEXURES

PLAN /CHART SHOWING SCHEDULE OF IMPLEMENTATION OF MINE CLOSURE

S.N.	TYPE OF ACTIVITY	LIST OF ACTIVITIES	TIME FRAME (YEARS)					
			1st	3rd	13th	PC1	PC2	PC3
1	PROGRESSIVE CLOSURE	Environmental Monitoring (Air quality, Water quality, Groundwater level and quality, Noise Quality)						
2		Filling of Void— Re-handling of crown dump						
3		Construction and maintenance of Garland Drain around quarry						
4		Construction and Maintenance of soil conservation measures /OB dump & embankment strengthening measure						
5		Operation and Maintenance of Sedimentation Tank and Workshop Effluent Treatment plant in the Project Area						
6		Installation, Operation and Maintenance of dust suppression measures						
7		Landscaping and Plantation in OB Dump, plain land and on other areas within Project Area						
8		Other Mitigative measures pertaining to Air & Water Pollution control, Soil conservation & mitigation of Land degradation etc.						
9		Entrepreneurship Development						
10	FINAL CLOSURE	Post Closure Environmental Monitoring						
11		Dismantling of Industrial and Residential structures within project Area						
12		Stabilization and Blanketing of OB Dump with Green Cover						
13		Grading of Highwall slopes						
14		Construction and Maintenance of Garland Drain in and around OB Dumps and of other soil conservation measures						
15		Man power cost of supervision (Added with Power Cost)						
16		Entrepreneurship Development						
17		Plantation (On Plain Land, OB Dump, Land obtained after dismantling and other areas) and Landscaping						
18		Barbed Wire Fencing around the mine						
19		Construction, Operation and Maintenance of Sedimentation Tank, AMD Treatment Plant in the Project Area						
20		Installation, Operation and Maintenance of dust suppression measures						
21		Other mitigative measures						

No. J-11015/80/2013-IA II (M)
Government of India
Ministry of Environment, Forests & Climate Change

Indira Paryavaran Bhawan,
Jor Bagh Road
New Delhi-110003
Dated: 06th August, 2014

To
The General Manager (Environment),
M/s Northern Coalfields Ltd.,
PO Singrauli Colliery,
District Singrauli,
Madhya Pradesh - 486889

Sub. : Expansion under 7(ii) of EIA Notification 2006 of Block -B Opencast Project from 4.375 MTPA to 5.47MTPA (25% additional of 4.375 MTPA of the existing EC) on an ML area of 1339 ha; Latitude 24° 09' 32" to 24° 11' 32" N & Longitude 82° 32' 36" to 82° 35' 12" E of M/s Northern Coalfields Ltd., Dist. Singrauli, Madhya Pradesh - Environment Clearance - reg.

Sir,

This is with reference to letter no. NCL/SGR/Env./13/3990 dated 08.03.2013 along with the application for expansion of the production under section 7(ii) of the EIA Notification, 2006. Reference is also invited to the subsequent letter nos. dated 23.05.2013; 21.08.2013; 12.09.2013; 22.10.2013; 28.11.2013; 18.12.2013 and 20.5.2014 for Environmental Clearance on the above-mentioned subject.

2. The Ministry of Environment, Forests & Climate Change has considered the application. It is noted that the proposal is for grant of Environmental Clearance for **Expansion under 7(ii) of EIA Notification 2006 of Block -B Opencast Project from 4.375 MTPA to 5.47MTPA (25% additional of 4.375 MTPA of the existing EC) on an ML area of 1339 ha; Latitude 24° 09' 32" to 24° 11' 32" N & Longitude 82° 32' 36" to 82° 35' 12" E of M/s Northern Coalfields Ltd., Dist. Singrauli, Madhya Pradesh.** The proposal was considered in the 75th EAC meeting held on 3rd - 4th June, 2013 and reconsidered in the 5th EAC meeting held on 25th - 26th November 2013. The proponent has informed that:

- i. Ministry had issued the environmental clearance vide letter no. J-11015/40/2009-IA.II (M) dated 19.05.2009 for 4.375 MTPA. Now, project proponent requested for 25 % expansion as per O.M no J-11015/30/2004-IA II (M) dated 19.12.2012.
- ii. The land usage of the project will be as follows.

Pre-mining		
S.No	Particulars	Land Area (Ha)
1	Forest Land	447.00
2	Agriculture Land (Tenancy Land)	46.00
3	Government Land	429.00
	Total	

Post-mining

Sl. No.	Land use	Total Land Area (Ha)	Post mining land use in Ha			
			Plantation/ afforestation	Water body	Public use	Undisturbed Land
1.	Top Soil dump	Not estimated separately. Included in OB dump.				
2.	External Waste Dump (OB Dump)	429.10	429.10			
3.	Excavation area	460.20	113.30	346.90		
4.	Built up area	81.10			81.10	
5.	Afforestation (Green Belt)	183.98	183.98			
6.	Undisturbed area	184.62				184.62
	Total	1339.00	726.38	346.90	81.10	184.62

Core Area: Total excavation area will be 460.20 ha and the back filled area would be 113.30 ha with a void/water body of 346.90 ha.

- iii. The total geological reserve is 110.67 MT. The mineable reserve is 87.67 M, extractable reserve is 87.67 MT. The per cent of extraction would be 79.21 %. The coal grades are C, D, E & F having stripping ratio of 3.31 m³/tonne. The average Gradient is 8 - 22 degrees. There will be total two seams with thickness ranging from 14.95 - 26.3 m.
- iv. There is no water river/nullha flows adjacent to the proposed mine.
- v. The total estimated water requirement is 5000 m³/d. The potable water would be 1280 m³/d from bore well & industrial water 3720 m³/d from mine sump and surface reservoir. The level of ground water ranges from 0.52 - 16.14 m.
- vi. The Method of mining would be mechanized opencast by shovel loader combination requiring drilling and blasting.
- vii. Power demand of 0.52 MW is being met by MPSEB through Morwa substation and is adequate for proposed expansion.
- viii. There are one external OB Dumps covering an area of 429.10 Ha. The height for the dumps would be 90 m. The total quantity of 242.29 mcm³. The year of back filling would be 2027-28. There is two internal dump covering an area of 113.30 ha having a height upto 120 m. With the quantity of 47.82 mcm³. The final mine voids will have an area of 346.90 ha. and depth 30-40 m which is proposed to be converted into a water body.
- ix. The ambient air quality monitored on fortnightly basis throughout the year. The monitoring activity is carried out since the year 2007 to till date and all results at all stations are within prescribed limits.
- x. The life of mine is 17 years from 2012-13.
- xi. **Transportation:** Transportation of coal in pit by rear dumpers. Surface to siding at present by trucks, CHP under construction and siding to loading by at present by trucks. The CHP is under construction.
- xii. There is no R & R involved. The no of PAF's will be 569.
- xiii. **Project Cost:** Total capital cost of the project is Rs. 535.10 Crore as. The cost of production would be Rs. 507.93/ton (Jan-13). The R&R Cost would be Rs. 579.04 Lakhs. Environmental Management Cost is Rs. 1819.98 lakhs.
- xiv. **Approvals:** Ground water clearance has been obtained. The Mine Closure plan obtained on 14.05.2011. The Mining Plan for 4.375 MTPA approved on 07.04.2009. The Board's Approval was recorded on 23.02.2011.
- xv. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

- xvi. **Forestry issues:** Total forest area involved for mining 447.00 ha. The forest clearance for total area has been obtained. Extent of forest land in the project is Ha. Stage - I FC issued vide letter F. No. 8-59/2005-FC dated 14.09.2006 for 447.00 Ha which is valid for 20 years.
- xvii. Total afforestation plan shall be implemented covering an area of 726.38 ha at the end of mining where reclaimed external OB dump 429.10 and Internal OB Dump 123.30 ha. Green Belt over an area of 183.98 ha. Density of tree plantation 2500 trees/ ha of plants. Till date 3.69 lakh plants are planted.
- xviii. **The proponent has informed that the project is not under moratorium.**
- xix. There are no court cases/ violation pending with the project proponent.
- xx. **Public hearing:** The public hearing for opencast mine having capacity 4.375 MTPA was held on 26.08.2003.

3. Certificate of compliance of earlier EC from MoEF, Regional office, Bhopal has been received vide their letter no. 3.25/2005(ENVY/1315 dated 20.08.2013. The Committee deliberated upon the compliance report received from MoEF, Regional Office, Bhopal. The Committee noted that the proponent has not complied with several conditions of the earlier EC which include reclamation of Gorbh Mine; measures for addressing Acid Mine Drainage (AMD) occurring in the Gorbh mine; progressive afforestation plan; Construction of the retaining wall at the toe of the dumps and OB benches within the mine to check run of and siltation shall be based on the rainfall data etc.

4. The Madhya Pradesh State Pollution Control Board, vide its letter no. 8723TS/MPPCB/2013 dated 07.12.2013 forwarding the letter from its Regional Office vide letter no. RO/MPPCB/2013 dated 6.12.2013 informed that "The area of Block-B project is not included in CEPI area as specified in MoEF OM dated 15.3.2013"

5. The proponent has submitted additional information, vide letter no. NCL/Env./Block B/EC/MoEF/47-17 dated 20.5.2014 intimating that implementation of acid mine water treatment will be carried out by CMPDI by treatment with lime. The salient features of the action plan include the following:

- (i) Preparation of interim report for acid water treatment by liner by the end of 2013.
- (ii) Preparation of final report of acid water treatment by the end of 3rd quarter of 2014.
- (iii) Precautionary work for acid treatment (experimental) by the end of 1st quarter of 2014.
- (iv) Start of acid treatment by neutralisation by the middle of 2nd quarter of 2014.
- (v) Neutralisation process Phase-I(Exp) by the end of 3rd quarter of 2014.
- (vi) Monitoring of Phase-I: by the end of 3rd quarter of 2015.
- (vii) Neutralisation Process Phase II. by the end of 2nd quarter of 2015.
- (viii) Monitoring of Phase-II: by the middle of 4th quarter of 2015.
- (ix) Filling of voids by OB: by the end of 4th quarter of 2016 and will be continued till 2017.
- (x) Reclamation of filled area: by the end of 4th quarter of 2016 and will be continued till 2017.

6. The proposal was reconsidered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 5th meeting held on 25th - 26th November, 2013 for granting Environmental Clearance. The Ministry of Environment, Forests & Climate Change hereby accords environmental clearance for the above-mentioned Expansion under 7(ii) of EIA Notification 2006 of Block -B Opencast Project from 4.375 MTPA to 5.47MTPA (25%

additional of 4.375 MTPA of the existing EC) on an ML area of 1339 ha; Latitude 24° 09' 32" to 24° 11' 32" N & Longitude 82° 32' 36" to 82° 35' 12" E of M/s Northern Coalfields Ltd., Dist. Singrauli, Madhya Pradesh under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments thereto subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions:

- i. The Proponent shall implement its Action Plan dated 20.5.2014 for treatment of acid mine water. This shall be reviewed in the 1st quarter of 2017 by the MoEFCC/EAC. The Proponent and the State Pollution Control Board shall monitor the progress of the report and send reports to the concerned Regional Office of the MoEFCC.
- ii. The Proponent shall implement the acid mine treatment based on IIT, Bombay report,
- iii. NEERI to make annual inspection at the Proponent's cost but submit report directly to the MoEFCC regarding implementation of acid mine water treatment in the mine and also to assess impact of acid mine water in the mine to the nearby villages.
- iv. The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
- v. The conditions as stipulated in the earlier J-1101/540/2009-JA.II (M) dated 19.05.2009 shall also be complied with
 - i. Details of water recharge plan be developed within next six months for implementation.
 - ii. Rs. 2.75 Cr. shall be provided as CSR cost which was agreed by the Proponent as against the proposed Rs. 1.635 Cr.
 - iii. Plantation be carried out in around the mine.
 - iv. Long term studies of impact of Garbi acid mine on the surrounding surface and ground water need to be carried out. Detailed remedial management plan of the acid mine void be submitted and implemented.
 - v. External OBD to be fully recharged into the mine void and mine void brought to the near surface level.
 - vi. Road transport from mine to siding (13 Km) away is to be stopped within two years and coal dispatch through CHP under construction through Railway wagons with silo loading.
 - vii. Screening of local population for health disorders need to be conducted by a competent Institute.
 - viii. Comparative analysis of land use based on satellite images and deviations, if any, be submitted for the record of the MoEFCC.
 - ix. The mining area should be grounded by green belt having thick closed thick canopy of the tree cover.
 - x. The Committee desired that a plan for repairing/plugging the cracks found in houses should be drawn up and implemented.
 - xi. Transportation of coal in pit by rear dampers. Surface to siding at present by trucks, CHP under construction and siding to loading by at present by trucks. The CHP is under construction. The production shall be within the same Mining Lease area.
 - xii. The void area will be converted into water body. The depth of the internal void shall be 40 m from the ground level and be used for fishery purpose. The rest of the area will be back filled upto the ground level and covered with about a meter thick top soil and put to use.
 - xiii. The OB shall be completely re-handled at the end of the mining.
 - xiv. Gullane drains be provided.
 - xv. There are 1689 PAFs. The R&R Cost would be Rs. 579.04 Lakhs.
 - xvi. Appropriate embankment shall be provided along the side of the river/raah flowing near or adjacent to the mine.
 - xvii. The land after mining shall be brought back for agriculture purpose.

- xxviii. Mine water should be treated for discharge into the lagoon. The quality of lagoon water shall be regularly monitored and irrigation measures taken.
- xix. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
- xx. Everybody in the core area should be provided with mask for protection against fugitive dust emissions.
- xxi. Dust mask to be provided to everyone working in the mining area.
- xxii. The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.
- xxiii. People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.
- xxiv. The mining area should be graced by green belt having thick closed thick canopy of the tree cover.
- xxv. The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.
- xxvi. There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.
- xxvii. OB shall be stacked at two earmarked external OB dumps(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self sustaining. Compliance status shall be submitted to the Environment, Forests & Climate Change and its concerned Regional office on yearly basis.
- xxviii. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil OB and mineral dumps. The water so collected shall be utilised for watering the mine area, maada, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
- xxix. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- xxx. Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.
- xxxi. Drills shall be wet operated.
- xxxii. The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.
- xxxiii. Controlled blasting shall be practiced with use of delay detonators and only during daytime. The proponent would need to repair the cracks in the houses if it occurred on account of blasting. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- xxxiv. A Progressive afforestation plan shall be implemented covering an area of 726.28 ha at the end of mining, which includes reclaimed external OB dump area (429.10 ha), internal OB dump area (112.30 ha), and green belt (183.98 ha) and in township located outside the lease by planting native species in consultation with the local DFO-Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.
- xxxv. An estimated total 290.14 Mm³ of OB will be generated during the entire life of the mine. Out of which 242.29 Mm³ of OB will be dumped in one external OB Dumps in an earmarked area

- covering 429.10 ha of land. 47.85 Mn³ of OB will be dumped in two internal OB Dumps in an earmarked area covering 113.30 ha of land. The maximum height of external OB dump for hard OB will not exceed 90 m and that for soft OB shall not exceed 60 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEFCC and its Regional Office on yearly basis.
- xxxvi. The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.
- xxxvii. Compensatory Ecological & Reclamation of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.
- xxxviii. The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.
- xxxix. No groundwater shall be used for mining operations.
- xl. Of the total quarry area of 440.20 ha, the backfilled quarry area of 113.30 ha shall be reclaimed with plantation and a void of 346.90 ha at a depth of 40 m which is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/forestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- xli. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry Environment, Forests & Climate Change and to the Central Pollution Control Board quarterly within one month of monitoring.
- xlii. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xliii. Sewage treatment plant shall be installed in the existing colony. LTP should also be provided for workmen and CHP wastewater.
- xliv. Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialised agency/institution within the District/State and the results reported to this Ministry and to JSCMS.
- xlv. Land disputes shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.
- xlvi. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEFCC and its concerned Regional office.
- xlvii. A detailed Final Mine Closure Plan along with details of Closure Fund shall be submitted to the Ministry of Environment, Forests & Climate Change within 6 months of grant of Environmental Clearance.
- xlviii. The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.
- xlix. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.

I. Corporate Environment Responsibility:

- a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
- b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
- c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
- d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliance/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

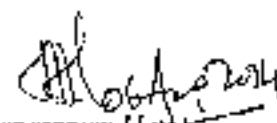
B. General Conditions:

- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change.
- ii. No change in the calendar plan of production for quantum of mineral coal shall be made.
- iii. Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM_{10} , $PM_{2.5}$, SO_2 and NO_2 monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM_{10} , $PM_{2.5}$, SO_2 and NO_2) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- v. Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- vi. Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 472 (F) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- vii. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- viii. Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- ix. Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- x. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.

- xi. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
 - xii. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.
 - xiii. The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the Ministry of Environment, Forests & Climate Change at <http://mef.nic.in>.
 - xiv. A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
 - xv. A copy of the environmental clearance letter shall be also be displayed on the website of the concerned State Pollution Control Board. The PC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tahsildar's Office for 30 days.
 - xvi. The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM_{10} , $PM_{2.5}$, SO_2 and NO_2 (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
 - xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office's of CPCB and the SPCB.
 - xviii. The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
 - xix. The Environmental statement for each financial year ending 31 March in Form V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEFCC by e-mail.
7. The proponent shall abide by all the commitments and recommendations made in the EIA/EEMP report as also during their presentation to the EAC.
 8. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.
 9. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
 10. The Ministry or any other competent authority may stipulate any further condition for environmental protection.



11. The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.
12. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
13. The above conditions will be enforced inter alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/ High Courts and any other Court of Law relating to the subject matter. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
14. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
15. This EC supersedes the earlier EC, vide letter no. J-11015/40/2009 I.A.II (M) dated 19.5.2009, for an expansion in production from 4,175 MTPA.


 (Dr. Manoj Kumar) Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, F-2/240 Arera Colony, Bhopal - 462016.
3. Secretary, Department of Environment & Forests, Government of Madhya Pradesh, Secretariat, Bhopal.
4. Member Secretary, Madhya Pradesh State Pollution Control Board, Paryavaran Parishad, E-5, Arera Colony, Bhopal - 462016.
5. Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. Dr. R.K. Gang, Advisor, Coal India Limited, SCOPE Minar, Core-I, 41 Floor, Vikas Marg, Laxmi nagar, New Delhi.
8. District Collector, Singrauli, Government of Madhya Pradesh.
9. Monitoring File 10. Guard File 11. Record File 12. Notice Board.

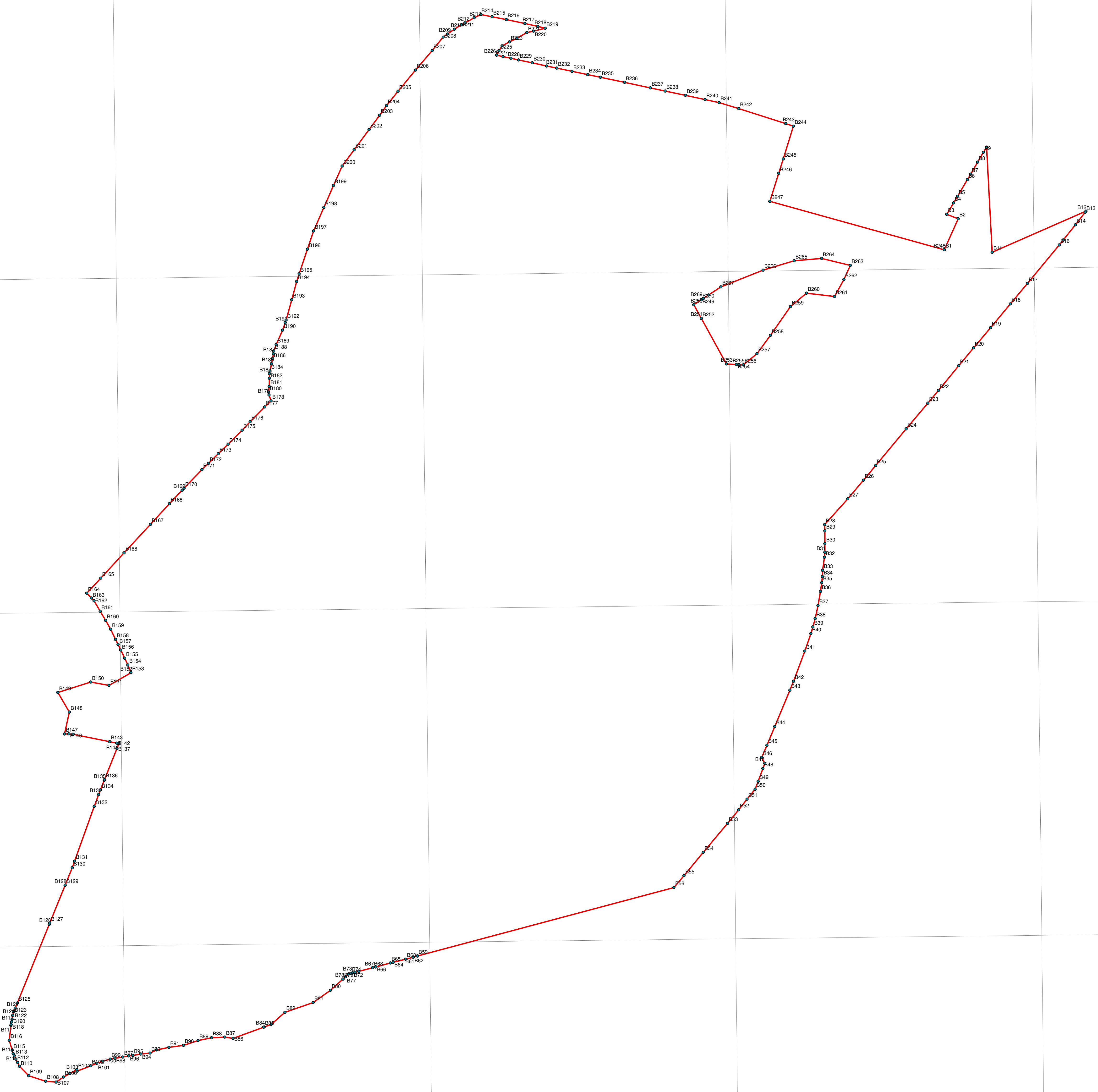

 (Dr. Manoj Kumar) Director

Plan showing satellite image of Block-B OCP

Annexure-III(A)



Leasehold Boundary of BlockB OCP showing Cardinal-Points



**Government of India
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division)**

Indira Paryavaran Bhawan

Aliganj, Jor bagh Road

New Delhi - 110003

Dated: 29th June, 2022

To

The Principal Secretary (Forests),
Government of Madhya Pradesh,
Bhopal.

Subject: Diversion of 631.39 ha (instead of 622.783 ha) forest land of Survey No. RF-276, 281 & PF -277, 278, 279, Village- Mu hair and Padri, Range Baidhan in Singrouli Forest Division for Block-B Expansion Opencast Coal Mining in favour of M/s Northern Coalfield Limited in Singrauli District of Madhya Pradesh (Online No. FP/MP/MIN/44294/2020) regarding.

Madam/Sir,

This is in reference to the Principal Chief Conservator of Forests (Land Management) & Nodal Officer, FCA, Government of Madhya Pradesh's letter No. F-1/823/2021/1011 /1408 dated 21.04.2022 on the above mentioned subject. In this regard, the subject cited proposal for diversion of forest land was considered by the FAC in its meeting held on 13th June, 2022.

The proposal was examined in detail and it has been observed that the proposal in its present form is not site specific as more than 78% of the forest area is proposed for dumping the overburden, which can be done over non-forest land. Keeping this in view the above proposal for diversion of forest land stands **rejected**

This issues with the approval of the competent authority.

Yours sincerely,

Sd/-

(Suneet Bhardwaj)

Assistant Inspector General of Forests

Copy to:

1. The PCCF (HoFF), Department of Forest and Environment, Government of Madhya Pradesh, Bhopal;
2. The Regional Officer, Integrated Regional Office, MoEF&CC, Bhopal;
3. The Nodal Officer (FCA), Department of Forest and Environment, Government of Madhya Pradesh, Bhopal;
4. User Agency;
5. Monitoring Cell, FC Division, MoEF & CC, New Delhi for uploading on PARIVESH portal.

**File No. CPAM-34011128/2019-CPAM
Government of India
Ministry of Coal**

**Room No, 622.A. Shasta Shawan.
New Delhi. dated 9th September, 2020**

To,

**The Chairman,
CIL, Kolkata**

Subject Approving Authority for mining plan for projects of CIL and its subsidiary companies . reg.

I am directed to refer to your letter No. CILCI-1:1307 dated 31.08.2020 on tne Subject cited above and to convey that there Is no change in the existing provisions of approving authority of Mining Plan of CIL and its subsidiary companies which was issued vide this Ministry's letter No. 340121(9y2012-CPAIA dated 31.05.2012.

This has the approval of competent aulhonty.

Yours Sinc rely.

**(Millar Singh)
Under Secretary to the Govt. of India
E-mail Id: hitlar.singhB5t\$nC.in**

Shastri Bhawan, New Delhi
The ..' May 2020

Office Memorandum

Subject: Guidelines for Preparation, Formulation, Submission, Processing, Scrutiny, Approval and Revision of Mining plan for the coal and lignite blocks.

Undersigned is directed to state that the guidelines for formulation of Mining plan and Mine Closure Plan has been amended. It has been decided by the Government that all coal (including lignite) mining operations in India shall henceforth be governed as per modified guidelines enumerated below.

1. **Mining Plan:** All coal (including Lignite) mining operation in India shall henceforth be governed as per these modified guidelines listed below and henceforth, the Mine Closure Plan and Final Mine Closure Plan shall be integral part of Mining Plan. Separate approval of Mine Closure Plan/ Final Closure Plan has been done away with. The Guideline/format for formulation of Mining plan is enumerated at **Appendix ' I**.
- 1.1. **Implementation of the approved Mining Plans shall be sole responsibility of the mine owner.** Mining operations shall be undertaken in accordance with the duly approved mining plan. The mining plan once approved shall be valid for the balance life of the Mine, provided that any modification(s) of the mining plan is approved by the competent authority and such approval of the modified mining plan shall remain valid for the estimate balance life of the mining plan. Modification of the approved mining plan during the operation of a mining lease also requires prior approval.
- 1.2. The mining plan shall cover prescription for different phases of life of the mine as stage plan. The Stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life) and post closure shall be submitted at the time of initial submission of mining plan. The project proponent shall submit a **report/information** consisting **a.** compliance status with respect to approval condition of mining plan and grounds specified at para 1.3A; **b.** stage plan for next five years; **c.** revised balance life of the mine; and **d.** revised calculation of ESCROW amount with respect to revised balance life, to Coal Controller, CCO, Kolkata with a copy of the same to Administrative Section dealing with the allocation/allotment **of the block and section dealing with approval of mining plan at MoC/CCO, for information.** Such report/information must be submitted at least 180(one hundred eighty) days before the expiry of 5 (five) year, starting from the commencement of the Mineral Concession (Amendment) Rules, 2020 or the date of execution of the duly executed mining lease deed, whichever is later. Information desired above must bear certificate of **Qualified Person/ Accredited Mining Plan preparing Agency** and have approval of the respective company board. Non submission of such information during the stipulated time may result in withdrawal of mine opening permission or cancellation of the approved mining **plan, as** may be decided by CCO.

The Mining Plan approved prior to issue of this Guideline will qualify for submission of such report/information at least 180(one hundred eighty) days prior to expiry of 5 (five) year from the date of notification of the Mineral Concession Amendment Rules 2020.
- 1.3.(A) The mining plan may be modified for **a.** for change in method of mining; **b.** for facilitating increase in sanctioned peak capacity that is in excess of one hundred **and** fifty per cent of the

sanctioned rated capacity; c. change in leased area; d. in the interest of safe and scientific mining; e. conservation of minerals; f. for the protection of environment; g. addition of reserve by way of proving of reserve in the existing lease area; h. for changes in final mine closure conditions; or i. and such other change that may be determined by the Central Government. While submission of revision/ modification of mining plan the reason for revision/ modification shall be specified in writing by the lessee.

(B) Notwithstanding anything contained in clause (A) above, for other minor changes, the project proponent is empowered to make modification with the approval of the respective company board. These minor changes shall cover a. changes in land type within the leased area; b. changes in HEMM deployment plan; and c. changes in location of infrastructure within the leased area. The project proponent shall submit specific report of such minor changes to Coal Controller, CCO, Kolkata with a copy of the same to Administrative Section dealing with the allocation/allotment of the block and section dealing with approval of mining plan at MoC/CCO, for information.

- 1.4. The Mining Plan submitted for approval shall have prior approval of the concerned Board of the Company.
- 1.5. The base date of the Mining Plan should be taken as cut-off date on which the extractable reserve, balance life etc. has been quantified.
- 1.6. The proposed leased area in the Mining Plan shall include the area specified in the mining lease within which mining operations can be undertaken and includes the non-mineralized area required and approved for the activities falling under the definition of mine as referred in The Mines Act 1952. Evacuation route, R&R and Employee Township area outside the block will not be part of the Mining plan.
- 1.7. Pre-mining land ownership/land type furnished in the mining plan will be of indicative in nature along with data source at its footnote (viz. from topo sheet, cadastral plan etc.).
- 1.8. The excavation/mining area envisages in the mining plan must be restricted within the allotted/vested geological block boundary/existing mining lease and if the project area is confined within the allotted block boundary/existing mining lease, a certificate to this effect is to be provided by the Qualified Person/ Accredited Mining Plan preparing Agency preparing the mining plan. The certificate must be made on the Conceptual Plan depicting Cardinal Point Co-ordinates (shape co-ordinates) of the project boundary, Lease boundary and Geological Block boundary (binding co-ordinates given in the vesting order).
- 1.9. Under provisions of Rule 16 of MCR 1960, State Government is custodian of the exploration data. As such in the cases, where the project area extends beyond the block boundary/existing mining lease the Mines and Geology Department of the concerned State Government shall issue a certificate specifying (a) intent of the State Government for grant of lease beyond the vested geological boundary; (b) non-existence of coal/ lignite in the area beyond the vested/allotted geological block boundary/existing mining lease to rule out the issue of encroachment. The application for issue of certificate from the Mines and Geology Department of the State Government must be supported with proof of the non-existence of coal/lignite in the area under reference (along with their Cardinal Point coordinates) duly certified by custodian agency viz. CMPDIL/ SCCL in case of coal and NLCIL in case of lignite.

Where the project area extends beyond the block boundary/existing mining lease, the certificate issued by the Mines and Geology Department of the concerned State Government must be attached in the Mining Plan.

- 1.10. In case of allotted/auctioned coal/lignite blocks, the mining plan may be revised for extraction of more coal on year to year basis.
Provided that the mining plan shall be revised for extraction of less coal on year on year basis only under following circumstances: a. if the remaining extractable reserve of the coal mine is less than

3(three) times of the rated Capacity of the current Approved Mining Plan; b. Change in method of mining from Opencast to Underground necessitated due to change in geo-mining conditions. However, revision of Mining Plan for extraction of less coal would be subject to prior approval of the Nominated Authority.

- 1.11. The approval of the revised Mining Plan shall not result in changes in the terms and conditions or efficiency parameters mentioned in the CMDPA/Allotment Agreement signed at the time of allotment/vesting for the auctioned/allotted blocks without prior approval of the nominated authority or Central Government, as the case may be. However, efficiency parameters mentioned in the CMDPA/Allotment Agreement shall be linked to the rated capacity of the mine.
- 1.12. The project proponent shall envisage the action plan for exploration and liquidation of the balance reserve yet to be projectised.
- 1.13. The project proponent shall take all necessary precautions regarding safety of mine workings and persons deployed therein and shall adhere to all the statutory clearances with regards to safety.
- 1.14. Proposed project area envisaged in the mining plan shall not encroach into any other adjacent coal block unless permitted to do so by the Ministry of Coal in writing.
- 1.15. The approval of the Mining Plan is without prejudice to the requirement of approvals from competent /prescribed authority under the relevant rules/ regulations etc.
- 1.16. The project proponent shall submit an undertaking that the mine shall be operated as per the Environment Clearance (EC) & Forestry Clearance (FC) for the project.
- 1.17. **Statutory Obligation:** The legal obligations, if any, which the lessee is bound to implement, like special conditions imposed while execution of lease deed, approval of Mining Plan, conditions imposed by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Central Pollution Control Board (CPCB), State Pollution Control Board (SPCB), Directorate General of Mines Safety (DGMS) or any other organizations describing the nature of conditions and compliance positions thereof, should be indicated in the Mining Plan.

2. **Mine closure Plans:** Mine Closure Plans will have two components viz. i) Progressive or Concurrent Mine Closure Plan, and ii) Final Mine Closure Plan. Progressive Mine Closure Plan would include various land use activities to be done continuously and sequentially during the entire period of the mining operations, whereas the Final Mine Closure activities would start towards the end of mine life, and may continue even after the reserves are exhausted and/or mining is discontinued till the mining area is restored to an acceptable level. The Mine closure details of the Mining Plan should be oriented towards the restoration of land back to its original as far as practicable or further improved condition.

- 2.1. Mining is to be carried out in a phased manner along with reclamation and afforestation work in the mined-out area.

Progressive mine closure plan shall be prepared for a period of every five years from the beginning of the mining operations. These plans would be examined periodically in every five years period and to be subjected to third party monitoring by the agencies approved by the Central Government, like Central Mine Planning and Design Institute Ltd. (CMPDIL), National Environmental Engineering Research Institute (NEERI), Indian Institute of Technology (IIT-ISM) or any other institutes/ organizations/ agencies specified from time to time for the purpose.

- 2.3. Various project specific activities viz. mined-out land details & their technical and biological restoration plan, water quality management, infrastructure to be retained and demolished, disposal of mining machinery, etc. shall be furnished in the relevant paras. Where the backfilling of the mine void is being carried out as part of regular mining operation, it shall not be included in the list of progressive mine closure activities. However, in case, where the backfilling of mine void is to be carried out specifically for closure of the mine, quantum of such overburden and the mine closure fund earmarked for the purpose must be included in the list of activities to be taken up for mine closure in the mining plan at the time of submission itself.

- 2.4. The Government may at any time before the closure of mine require certain activities to be included in the mine closure plans, which it may consider necessary for the safety and conservation of environment, or in compliance with any modification/ amendment in the relevant legislation.
- 2.5. **Abandonment cost:** The total cost for carrying out such activities shall be estimated for assessment of abandonment cost of the mine involving progressive and final mine closure activities such as barbed wire fencing all around the working area, dismantling of structures/demolition and cleaning of sites, rehabilitation of mining machinery, plantation, physical/biological reclamation, landscaping, biological reclamation of left-out overburden dump, filling up of de-coaled void, post environmental monitoring, supervision charges, power cost, protective and rehabilitation measures including their maintenance and monitoring, miscellaneous charges etc. for the specified post closure period.
- 2.6. **Escrow Account Calculation:** In August 2009 it was estimated that typically closure cost for an opencast mine was around rupees six lakhs per hectare of the total project area and rupees one lakh per hectare for underground project area at the-then price level. Accordingly vide letter dated 7th January 2013 a guideline for mine closure was issued which needed modification in these rates based on the wholesale price index (**WPI**) as notified by Government of India from time to time while preparing the Mining plan and Mine Closure Plan. The escalated rate (based on the current base year i.e. 01.04.2019) is Rupees Nine Lakh per hectare in opencast and Rupees one lakh fifty thousand per hectare for underground Mine. These rates will be considered as Base Rate to be applicable from 01.04.2019, which may change as specified from time to time by the Government of India.
- [Exemplary Calculation: $[(Rs\ 6\ lakhs \times 1.561\ linking\ factor\ for\ base\ year\ 2004-05 \times WPI\ 121.1\ as\ on\ April\ 2019) / (WPI\ as\ on\ August\ 2009)] = Rupees\ 8.75\ lakh, rounded\ to\ Rupees\ 9\ (nine)\ lakhs\ per\ hectare\ in\ case\ of\ Opencast\ project]$.*
- Henceforth, these rates will stand modified based on the wholesale price index (WPI) as notified by Government of India from time to time. Annual closure cost is to be computed considering the total project area of the mine multiplied by escalated rate (at the above mentioned rates) and dividing the same by the balance life of the mine in years. An amount equal to the annual cost is to be deposited each year throughout the mine life compounded @5% annually.
- [For example if the annual cost works out to Rs 100, then in the first year the amount to be deposited will be Rs 100, in the second year $100 \times (1 + 5\%)^1$, in the third year $100 \times (1 + 5\%)^2$ and so on.]*
- Further, in case of the mine, where escrow account is already open, the annual closure cost is to be computed considering the total project area at the above mentioned rates minus the amount already deposited and dividing the same by the balance life of the mine in years and annual cost as arrived should be compounded @5% annually.
- 2.7. **Financial Assurance:** The Mining Company/ Mine Owner as a part of Financial Assurance will open a Fixed Deposit Escrow account, with the Coal Controller Organization (on behalf of the Central Government) as exclusive beneficiary prior to commencement of any activities on the land/project area of the mine and shall submit the same to Coal Controller Organization (CCO) before the permission is given for opening the mine. The mining company shall cause the payment to be deposited at the rate computed as indicated at Para 2.6. The owner of the company may select the Schedule Bank where the Escrow account is to be opened and inform the same to the Coal Controller, CCO, Kolkata.
- 2.8. Coal Controller, Kolkata shall get the WPI (used for escalation of closure cost at the time of formulation of Mining plan) updated, at the time of opening of Escrow account. The mine owner/ company including all public/ private sector companies shall deposit the yearly amount in a Schedule Bank in accordance with Para 2.6. Coal Controller, **Kolkata shall also get the**

information, submitted under to para 1.2, verified and get the yearly closure cost modified in respect **to the latest WPI in accordance with para 6.**

- 2.9. Final Mine Closure: The details of the Mining Plan (covering Final Mine Closure Plan envisaging the details of the updated cost estimates for various mine closure activities and the Escrow Account already set up, shall be submitted to the approving authority for approval at least five years before the intended final closure of the mine.
- 2.10. Final Mine Closure would be considered to be completed only after acceptance of the third-party audit report by the Coal Controller on the compliance of all provisions of Mine Closure Plan. Any Institute/ Organization/Agency as may be specified by the Government for this purpose may be engaged for Third Party audit to create a self-sustained ecosystem. Failure of restoration within the specified period may result in forfeiture of Escrow Account created as per Para 2.6 & 2.7. The details of the Final Mine Closure Plan along with the details of the updated cost estimate for various mine closure activities and escrow account already set up shall be submitted at the time of approval of final mine closure plan.
- 2.11. **Time Scheduling for abandonment:** The Action plan for carrying out all abandonment operations (progressive and final mine closure) should be furnished in the form of bar chart for a period of life of the mine plus post closure period. Post closure period shall be taken as 3 (three) years for Underground mines and Opencast mines having stripping ratio lesser than 6 (six) MM³/Te & 5 (five) years for mines having stripping ratio more than 6 (six) MM³/Te.
- 2.12. **Implementation of the approved Mine Closure Plan shall be sole responsibility of the mine owner.** Mining is to be carried out in a phased manner i.e. continuation of mining activities from one phase to other indicating the sequence of operations depending on the geo-mining conditions of the mine. Up to 50% of the total deposited amount including interest accrued in the ESCROW account may be released after every five years in line with the periodic examination of the Closure Plan as per Para 2.2. The amount released should be equal to expenditure incurred on the progressive mine closure in past five years or 50% whichever is less. The balance amount shall be released to mine owner/leaseholder at the end of the final Mine Closure on compliance of all provisions of Closure Plan. This compliance report should **be duly signed** by the lessee and certify that said closure of mine complied all statutory rules, regulations, orders made by the Central or State Government, statutory organisations, court **etc. and certified** by the Coal Controller.
- 2.13. **Responsibility of the mine owner:** It is the responsibility of the mine owner to ensure that the protective measures contained in the mine closure **plan including reclamation and** rehabilitation works have been carried out in accordance with the approved mine closure plan and final mine closure plan.
- 2.14. The owner shall submit to the Coal Controller a yearly report before 1st July of every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plans (Progressive and Final Closure Plans).
- 2.15. The money to be provided per hectare of total Project Area for the purpose is to be deposited every year on commencement of any development activity on the land for the mine after opening a Fixed Deposit Escrow Account prior to obtaining mine opening permission from Coal Controller. Mining company/owners including all Public Sector Undertakings shall deposit the yearly amount in a Scheduled Bank. If the Mine owners fail to deposit the required annual amount in accordance with Para 2.6, 2.7 & 2.8, the Government can withdraw the mining permission.
- 2.16. The funds so generated are towards the security to cover the cost of closure in case the mine owner fails to complete the relevant closure activities. The prime responsibility of mine closure shall always lie with the mine owner, and in case these funds are found to be insufficient to cover the cost of **final mine closure including the areas** covered in Para 2.3 2.6, 2.7, 2.8 & 2.9 above. The mine owner shall undertake to provide the additional fund equivalent to the gap in

funding before five years of Mine Closure failing which it may be recovered by such other methods as the competent authority may deem fit in this regard.

- 2.17. **Final Closure Certificate:** The Mine owner shall be required to obtain a mine closure certificate from Coal Controller to the effect the protective, reclamation, and rehabilitation work in accordance with the approved Mining plan covering final mine closure provisions/activities have been carried out by the mine owner for surrendering the reclaimed land to the State Government.
- 2.18. The balance amount at the end of the final Mine Closure shall be released to mine owner on compliance of all provisions of Closure Plan duly signed by the mine owner to the effect that said closure of mine complied with all statutory rules, regulations, orders made by the Central or State Government, statutory organizations, court etc. and duly certified by the Coal Controller. This should also indicate the estimated extractable coal reserves and coal actually mined out.
- 2.19. If the Coal Controller has reasonable grounds for believing that the protective, reclamation and rehabilitation measures as envisaged in the approved mine closure plan in respect of which financial assurance was given has not been or will not be carried out in accordance with mine closure plan, either fully or partially, the Coal controller shall give the mine owner a written notice of his intention to issue the orders for forfeiting the sum assured at least thirty days prior to the date of the order to be issued after giving an opportunity to be heard.

3. Formulation of Mining Plan by Qualified Person (QP) or Accredited Mining Plan Preparing Agency (MPPA):

- 3.1. System of granting Recognition to a person for preparation of mining plan u/s 22C of MCR 1960 & preparation of mining plan only by RQP u/s 228 of MCR 1960 shall be done away with, after commencement of the Mineral Concessions (Amendment) Rules, 2020.
- 3.2. After commencement of Mineral Concession (Amendment) Rule 2020, no mining plan shall be accepted unless it is prepared by Qualified Person (QP) or Accredited Mining Plan Preparing Agency (MPPA).
- 3.3. Quality Council of India (QCI) or National Accreditation Board for Education and Training (NABET) shall be engaged for accrediting following entities:
- (i) Accredited Prospecting Agency (APA) for undertaking prospecting operations and preparation of geological reports for Coal and Lignite Mines, and
 - (ii) Mining Plan Preparing Agency (MPPA) for preparation of mining plan (for Coal, Lignite Mines and Sand for Stowing)
- 3.4. The Quality Council of India (QCI) or National Accreditation Board for Education and Training (NABET) shall grant accreditation in accordance with such standards and procedures as specified in schedule VI of Mineral Concession (Amendment) Rule 2020.
- 3.5. Qualified Agency (QP) or Mining Plan Preparing Agency (MPPA) who prepares mining plan for a block/mine, shall have recognition from the concerned company board that the qualification of the QP or accreditation of the MPPA has been duly verified and is in line with the relevant provision of the MCR 1960.

4 Submission, Processing and Scrutiny of Mining Plan

- 4.1 On and from the date of publication of order and upto the min' of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, every mining plan submitted for approval/modification shall be accompanied with a non-refundable application fee specified from time to time in this regard, for the project area specified in the mining plan.
- 4.2 On and from the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, every mining plan submitted for approval/modification

shall be accompanied with a non-refundable application fee specified from time to time in this regard, for the project area specified in the mining plan and peer/expert review done by any accredited mining plan preparing or reviewing agency at their (applicant's) own cost. During examination of the Mining Plan by the internal committee of MoC, if it is felt that a review by expert or by specialized agency is required, the committee may recommend referring the mining plan to such expert/agency with the approval of the MP approving authority. Charges for the expert review shall be borne by the applicant.

- 4.3 All pages (including cover page, plates and Annexures) shall bear the signature & stamp furnishing details of the QP/Accredited Mining Plan preparing Agency (MPPA) in physical mode of submission and e-signature/digital signature during the online system of submission.
- 4.4 Ministry of Coal is in process of development of on-line portal for submission and approval of mining plan. system of acceptance of Physical copy shall be continued till the development/operationalization of online portal for submission and approval of mining plan.

4.4.1 Submission to Physical Copy Mining Plan to Ministry of Coal:

4.4.1.1 The project proponent shall submit one soft copy and four hard copies of Mining Plan (draft)-one each to the concerned Administrative Section of the Ministry of Coal for the concerned block, Section of MoC/CCO dealing with approval of Mining plan, Coal Controller, CMPDIL/ Extended office of CCO & the dispatch receipt of the speed post (confirming that the draft Mining Plan has been sent). The contact details and correspondence address of the section dealing with the approval of Mining plan, administrative section for the mine, members of the committee etc. shall be updated time to time, on the website of the Ministry of Coal/Coal Controller Organisation.

4.4.1.2 The project proponent shall incorporate the observation (if any) and submit the mining plan (after incorporating the compliance to the observation) to section of MoC/CCO dealing with approval of Mining plan, concerned administrative section of the Ministry of Coal, Coal Controller and CMPDIL/ Extended office of CCO.

4.4.1.3 Submission of Mining Plan (after incorporating compliance) to Ministry of Coal: The project proponent shall submit 04 (Four) hard copies & 01 (one) soft copy of modified Mining Plan and the compliance to the observations along with copy of the dispatch receipt of the Speed Post (confirming that the modified Mining Plan has been sent to section of MoC/ CCO dealing with approval of Mining Plan, concerned administrative section of the Ministry of Coal, Coal Controller, and CMPDIL/ Extended office of CCO).

4.4.1.4 The procedure of submission at Para 4.3.1 will be replaced by process of submission at para 4.3.2 on development of portal for online submission and approval of Mining Plan.

4.4.2 Online System of Submission of Mining Plan for Approval:

4.4.2.1 Project proponent shall register online, using registered official mail ID.

4.4.2.2 For the purpose of preparation of Mining plan through a QP or MPPA, project proponent shall share a temporary login with QP/MPPA. This temporary login shall be valid till the preparation and approval of mining plan only.

4.4.2.3 The QP/MPPA shall upload the Mining plan through the temporary login and submit it to the project proponent; QP/MPPA once submits the mining plan to the project proponent, he shall not be able to modify.

4.4.2.4 The Project Proponent shall make payment of processing charges/fees online as specified from time to time by Ministry of Coal;

4.4.2.5 The Project Proponent shall after incorporating relevant company board approvals submit the mining plan to the Approving Authority; The mining plan submitted to approving authority shall become visible to Administrative Section for the respective block, section of MoC/CCO dealing

with approval of Mining plan, members of the Internal Committee, Coal Controller, CMPDIL/ Extended office of CCO, simultaneously. System of SMS alerts shall be available at all ages;

4.4.2.6 Observations of the Committee Members shall be uploaded online and the project proponent shall also submit Mining Plan, after incorporating compliance, online

5 Scrutiny & Processing of Mining Plan

- 5.1.1 The current system of getting the mining plan scrutinized through CMPDI, Ranchi shall continue. Ministry of Coal is in process of creating an extended office of Coal Controller Organization at Delhi which shall be delegated with the work of processing and scrutiny of mining Plan. A letter to this effect shall be issued separately.
- 5.1.2 CMPDIL/Extended office of CCO at Delhi shall scrutinize the mining plan and submit comments to section of MoC/CCO dealing with approval of Mining plan within Fifteen (15) days of receipt of the Mining Plan. Non-submission of comments within the stipulated time may be presumed as "no comment" from CMPDIL/Extended office of CCO; CMPDIL/ Extended office of CCO at Delhi, if consider necessary to make a physical verification of the site/site visit for scrutiny of the mining plan, may make such site visit/physical verification of the site, however, no relaxation in the time line as specified above may be given.
- 5.1.3 Administrative Section of the Ministry of Coal (dealing with the block) shall scrutinize the mining plan with respect to Vesting order/ allotment order and CMDPA signed with allottee at the time of allotment and submit observations to section of MoC/CCO dealing with approval of Mining plan (till the development of portal for Mining plan approval) within Fifteen (15) days of receipt of the Mining Plan. Non-submission of comments within the stipulated time may be presumed as "no comment" from the administrative section;
- 5.1.4 Members of the Internal Committee shall examine the mining plan from Technical and administrative angle based on the observations of the Administrative Section (dealing with the respective block) and CMPDIL/Extended office of CCO and the peer/expert review report submitted with the mining plan and submit observations to section of MoC/CCO dealing with approval of Mining plan (till the development of portal for Mining plan approval) within Fifteen (15) days of receipt of the Mining Plan. Non-submission of comments within the stipulated time may be presumed as "no comment" from the administrative section. Members of the internal committee, CMPDIL/Extended office of CCO may raise observation twice only. The observation raised shall be communicated directly to the project proponent for incorporating the same in the mining plan. The project proponent shall make presentation in the meeting of the internal committee for scrutiny.
- 5.1.5 Section of MoC/CCO dealing with approval of Mining plan shall communicate the observation (if any) to the project proponent for compliance till the development of online system for submission, processing, and approval of mining plan.
- 5.1.6 Subsequent, to development of online portal for submission, processing, and approval the observations of the internal committee members shall be uploaded directly on the portal, which will be visible to the project proponent, A timeline of 15 days shall be available for the internal committee members to upload the comments. Non-submission of comments within the stipulated time may be presumed as "no comment".

6 Timeline for submission of Compliance:

Once the observation of the Scrutiny of the mining plan is communicated either in hard copy, mail or online, the Project Proponent is required to submit the mining plan after incorporating the compliance to the observation within a period of 15 days of the communication, failing which the mining plan submitted for approval shall be rejected.

Provided that any such application may be entertained after the said period of 15 Days, if the applicant satisfies the approving authority that he had sufficient cause for non-submission of mining plan (after incorporating the compliance) in time. However, in any case this period may not be extended beyond 30 days from the date of receipt of communication of the observation.

7 Approving Authority:

- 7.1 On and from the date of publication of order and up to the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, the powers to approve mining plan for all categories of coal and lignite mines and sand for stowing shall be exercisable by Project Adviser, Ministry of Coal.
- 7.2 On and from the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, the power to approve mining plan for all categories of coal and lignite mines including sand for stowing shall be exercisable by the Coal Controller, CCO, Kolkata, a subordinate office of Government of India in the Ministry of Coal.
- 7.3 The person delegated to approval of Mining Plan under sub-section (1) of section 26 read with clause (b) of sub-section (2) of section 5 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) (hereinafter, the 'Act') may seek help of an Internal committee constituted for the purpose.
- 7.4 The approving authority shall dispose of the application for approval of the Mining Plans within a period of 30 days from the date of receiving of such application (The Mining Plan received on or before 30th of Current Month will be considered in the ensuing meeting). Provided that the aforesaid period of 30 days shall be applicable only if the Mining Plan is complete in all respect, and in case of any modifications subsequently suggested after the initial submission of the Mining Plan for approval, the said period shall be applicable from the date on which modified mining plan is re-submitted.

8 Internal Committee for Scrutiny of Mining Plan:

- 8.1 Members of the Internal Committee shall examine the mining plan from Technical and administrative angle based on the observations of the Administrative Section dealing with the respective block & CMPDIL/ Extended office of CCO.
- 8.2 The internal committee shall recommend the mining plan for "Approval" or "Rejection". In case of recommendation for Rejection, the committee shall record the reason for Rejection.
- 8.3 Till the opening of CCO office at Delhi, the internal committee shall consist of:
1. Director (Technical), MoC, Member Secretary
 2. Director/ Deputy Secretary. MoC of the section dealing with the allocation/allotment of the respective block, Member
 3. Coal Controller or his representative, Member
 4. Director level officer of CMPDIL, Member
 - 5. Director/Deputy Secretary, Nominated Authority, Member**
- 8.4 After opening of CCO office at Delhi, the internal committee shall consist of:
1. Director level officer of CCO having relevant working experience., Member
 2. Director/ Deputy Secretary of the section dealing with the respective block, Member
 3. Head of Regional Coal Controller Office (having relevant working experience in mine planning), CCO Regional Office New Delhi, Member Secretary
 4. Any other technical person having working experience of not less than 15 (fifteen) years in mine planning, Member

9 Communication of Approval:

- 9.1 In case of allotted/auctioned mine, section dealing with approval of Mining Plan shall communicate the decision of the approving authority within a period of 5 (five) working days in form of a letter confirming "in-principle approval" of the Mining Plan to the project proponent

with a copy of the same to the Nominated Authority, Govt. of India. Final approval of **the Mining Plan in such** cases shall be communicated by the section dealing with approval of Mining Plan, only on receipt of **applicable payments and its confirmation from the** Nominated Authority, Govt. of India.

9.2 While for mines other than auctioned/allotted mines, section dealing with approval of Mining Plan shall communicate the decision of the approving authority within a period of 5 working days.

10 Revision:

10.1 Any person aggrieved by any order made or direction issued in respect of mining plan by an officer competent to approval mining plans shall within 30 days of the communication of such order or direction, apply to the Secretary (Coal), Ministry of Coal for a revision of such order or direction thereon.

10.2 On receipt of any application for revision the authority shall give the aggrieved person a reasonable opportunity of being heard and may within 30 days confirm, modify or set aside the order or direction and his decision thereon shall be final.

11 **This Guideline** supersedes the previous orders and are without any prejudice to any other **relevant rules and regulations, such as those issued** the State Governments, Ministry of Environment, Forest and Climate Change, Ministry of Labour and Employment, etc.

(Hitlar Singh)

Under Secretary to the Government of India

To,

All the existing Coal and Lignite block allocates

Copy to: -

1. All Joint Secretaries, MoC.
2. Coal Controller, Coal Controller's Office, 1- Council House Street, Kolkata.
3. CMD, CIL, Newtown, Rajarhat, Kolkata-700156, W.B
4. CMD, NLCIL, Cuddlore, Distt. Neyveli- **607801 (TamilNadu)**.
5. CMD, Singareni Collieries Company Limited (SCCL), Kothagudem Collieries, Khammam Distt.(A.P).
6. Tech. Director (NIC) - with the request to place it to Website of the Ministry of Coal.

नार्थन कोलफील्ड्स लिमिटेड
 (एक विशेष रूप से गठित)
 ब्लाक-बी परियोजना पो-गोर्बी
 (मध्य प्रदेश सरकार द्वारा स्वीकृत)
 (एन.सी.डी.ए. प्रमाणित, आई.एस.ओ. 9001:2015)
 नार्थन कोलफील्ड्स लिमिटेड, ब्लाक-बी परियोजना, गोर्बी, मध्य प्रदेश



Northern Coalfields Limited
 (A Min. Ratna Company)
 Block-B Project, P.O. - Gorbi
 (Dist. - Singrauli, MP-492001)
 (ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 & SA 8000 Certified Company)



Dated: 23.10.2022
 24

No.: NCL/BLOCK-B/GM/2022/1242

To
 The Regional Director,
 CMPDIL, RI-VI, Jayant



Ref: E office no e-841895, NCL/BB/GM/PP/FC, dt-25/0/2022

Sub.: Submission of required plan showing land details

Dear Sir,

Enclosed find herewith copy of signed Plan as desired in above referred e-office.
 This is for needful at your end.

Yours faithfully

[Signature]
 23/10/22
 General Manager
 Block-B Project
[Signature]
 23/10/22

Encl: As above.

1100 (Mining)
 At Bil -
 31-10-22

खान योजना विभाग
 पंजीयन संख्या 5291
 दिनांक 01/11/2022

Land Requirement Plan

