O/C

वेस्टर्न कोलफील्डस लिमीटेड /Western Coalfields Limited
मिनिरत्न कंपनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कंपनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

ITUWTSA
NEW DELHI 2024

क्षेत्रीय महाप्रबंधक का कार्यालय, चंद्रपुर क्षेत्र
योजना विभाग
पता:वे.को.लि.,चंद्रपुर क्षेत्र, पो:बाबुपेठ,
जिला: चंद्रपुर, महाराष्ट्र, पिन-442403
Email: gmwclcha@gmail.com

Office of Area General Manager, Chandrapur Area
PLANNING DEPARTMENT
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442403
Fax:07172-255287, Phone: 07172-253322-25

संदर्भ: वेकोलि/चक्षे/क्षेमप्र/यो/प/ 17 दिनांक.: 23. 04.2025

प्रती
The Divisional Forest Officer,
Chandrapur Forest Division,
Chandrapur.

Sub: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra (Online proposal No. FP/MH/MIN/17443/2016) – regarding

Ref: 1. Stage I (In-principle) approval from MoEF & CC (Forest Conservation Division) vide letter no. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025

2. DFO Demand vide letter no. Desk-14/Survey/Land/04 dated 01.04.2025

Dear Sir,

With reference to the above letter no.1, Ministry of Environment, Forests and Climate Change (MoEF &CC) has conveyed the Stage I (in-principle) approval for diversion of 0.20 Ha Zudpi Jungle forest land for Bhatadi Expansion Mine Project in favour of Western Coalfields Limited District Chandrapur Maharashtra State. WCL has deposited the compensatory levies as per the demand letter referred above. Point-wise Compliance Report, Payment Details and Other relevant documents enclosed herewith (06 sets).

It is therefore requested to kindly forward the compliance report to the Government of India for obtaining Stage II Final Approval as early as possible.

Thanking you.

Encl: as above

Yours faithfully,
23/4/25
Area General Manager
Chandrapur Area

Copy to:-

1. The Nodal Officer / APCCF, Nagpur, Van Bhavan, Nagpur, M.S
2. Deputy Director General of Forest (Central), MoEF & CC, Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur - 440001
3. The Chief Conservator of Forest, Chandrapur Circle, Chandrapur
4. General Manager (Forests), WCL, Nagpur
5. General Manager (L&R), WCL, Nagpur
6. General Manager (Environment), WCL, Nagpur
7. Sub Area Manager, Bhatadi Sub Area, WCL-Chandrapur Area

23/04/2025
सहायक लिपीक
मुख्य वनसंरक्षक चंद्रपूर वनवृत्त
यांचे कार्यालय

23/4/2025
सहायक/वरिष्ठ लिपीक
कार्यालय
क्षेत्रीय वन अधिकारी

COMPLIANCE REPORT AGAINST DIVERSION OF 0.20 HA ZUDPI JUNGLE FOREST LAND FOR BHATADI EXPANSION OPENCAST MINE IN THE DISTRICT CHANDRAPUR, MAHARASHTRA STATE

MoEF &CC Stage I Letter No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025

Sr. No.	Conditions	Compliance
i.	Legal status of the diverted forest land shall remain unchanged;	Agreed. An undertaking has been enclosed with this compliance report **Page No.1**
ii.	The state shall initiate the action for the correction of digital boundaries of 4.86 ha area (which is PF as per DSS analysis) and provide the correct details to Forest Survey of India for appropriate correction on the DSS portal;	Action to be taken by State Forest Department.
iii.	The safety zone with effective green belt shall be maintained by the User Agency along the inner boundary of the lease area;	Agreed. As per consolidated guideline no. 7.9(i) of MoEF & CC, 7.5-meter wide peripheral safety zone is being maintained all along the inner boundary within the Mining Lease Area of Bhatadi Expansion OC Project. WCL had deposited Rs.1,43,49,666/- towards maintenance of Green Belt all around the inner boundary of mine lease. Approved Scheme for maintenance of Green Belt admeasuring 11.00 Ha is enclosed for kind reference in **Page No.2 to 9**. An Undertaking also enclosed against the same as **Page No.10**
iv.	The User Agency shall transfer the funds towards the cost of Net Present Value (NPV) of the forest land being diverted under this proposal in accordance with the MoEF&CC's guidelines dated 6.01.2022 read with guidelines dated 19.01.2022;	Complied. An amount of Rs.191556/- towards NPV has been deposited to the account of CAMPA vide RTGS Payment Unique Transaction Reference (UTR) No.SBINR12025042082752414 dated 20th April 2025. E-Challan generated through MoEF Portal attached with Acknowledgement of Bank as **Page No.11 to 13**
v.	At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;	Agreed. An undertaking has been enclosed for the same Page **No.14**
vi.	The State Government shall upload the KML files of the area under diversion in the E-green watch portal of FSI, before handing over forest land to the user agency;	KML file of 0.20 Ha forest land was already submitted to the State Forest Department during the process of FC Proposal. State Forest Department requested to upload the KML file in E-Green Watch Portal.

vii.	All the funds received from the user agency under the project shall be Transferred / deposited in CAMPA account only through e-portal (https://parivesh.nic.in/). Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance;	Rs.1,45,41,222/- (Rupees One Crore Forty-Five Lakh Forty-One Thousand Two Hundred and Twenty Two only) had been deposited in MAHARASHTRA CAMPA ACCOUNT NO. 150785817443791 ON 20.04.2025 against the demand raised by the Divisional Forest Officer, Chandrapur Forest Division. All the funds have been deposited vide E-Challan generated through e-portal (https://parivesh.nic.in/). Copy of the challan and payment details enclosed in **Page No.11 to 13**
viii.	The User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined-out area. The User Agency shall prepare a detailed plan for life of project as per mining plan, clearly linking the progress of mining and felling of the trees. Felling of trees shall be done, when it is absolutely necessary in phase-wise manner in the areas which become due for mining as per mining plan. The concurrent Reclamation Plan as per the approved Mining Plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;	**Mining in Phased Manner:** The existing Bhatadi Expansion OC mine is being worked in Bhatadi OC block. The operation of existing mine has been planned in two quarries i.e. Quarry-I (Western quarry) and Quarry-II (Eastern quarry). Quarry-I is being worked since 1995-96. As per Project Report – Point No.18.6 – mining is to be carried in a phased manner initiating afforestation / reclamation work in the mined-out area of first phase while commencing mining in the 2nd phase. **Tree Felling:** No tree felling is involved in the proposed forest land. Tree felling in the Non-forest land will be carried out as per Maharashtra Felling of Trees (Regulation) Act 1964 in a phased manner. This is an on-going project. **Reclamation:** As per the the mine closure plan, Voids due to mining are to be dealt and the final land use plan included filling of the voids for land reclamation where possible and for hydro reclamation where feasible. For Coal and Overburden, keeping the bench height of 10 m, the width of working and non-working benches are kept as 30 m and 20 m respectively. The dumps and other area shall be properly planted as a part of reclamation. (Chapter 18 – Point No.18.3). Rs.372.10 Lakh financial provision has been kept in Mine Closure Plan. Apart from the above, Rs. 64.245 Lakh financial provision kept in the Mine Closure activities of approved project report for plantation of cleared area, quarry area, safety zone and plantation over the external OB Dump. An undertaking is enclosed as **Page No.**

		15 and a detailed plan is being enclosed herewith against this condition in **Page No. 16 to 18**
ix.	The user agency shall prepare a schedule for surrender of the mined out and reclaimed forest land in accordance with existing mining plan and submit the same along with an undertaking to surrender the mined out and reclaimed forest land as per such schedule to the MoEF & CC before grant of 'Final' approval under the Adhiniyam for diversion of the said forest land;	The Land Surrender Schedule, in accordance with the approved Mining Plan, along with an Undertaking, has been enclosed as **Page No.19 to 21**
x.	The rehabilitated forest area after closure of mining operations shall be handed over to the State Forest Department for sustainable forest management in the future;	Agreed. An Undertaking has been enclosed for the same as **Page No.22**
xi.	Safety Zone Management: Following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:	
a.	User agency shall ensure demarcation of safety zone (7.5 meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the. State Forest Department;	Agreed. An Undertaking has been enclosed as **Page No.23**
b.	Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;	Agreed. An Undertaking has been enclosed as **Page No.24**
c.	Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department; and	Agreed. WCL had deposited Rs.1,43,49,666/- towards maintenance of Green Belt all around the inner boundary of mine lease. Approved Scheme for maintenance of Green Belt is enclosed for kind reference in **Page No.2 to 9**. An Undertaking has been enclosed as **Page No.25**
d.	The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms.	Agreed. An Undertaking has been enclosed as **Page No.26**
xii.	Following activities, as per approved plan / schemes, shall be undertaken in the lease area by the User Agency under the supervision of the State Forest Department:	
a.	Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three year with effect from the issue of 'Final' approval	An undertaking enclosed and a Plan to minimize soil erosion and chocking of stream enclosed as **Page No.27 to 32**

	in accordance with the approved Plan/Scheme in consultation with the State Forest Department;	
b.	Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved Plan/scheme;	An undertaking enclosed and a Plan for plantation of adequate drought hardy plant species and sowing of seeds is enclosed as **Page No.33 to 35**
c.	Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved Plan/Scheme;	An undertaking and a Plan for construction of check dams, retention / toe walls to is enclosed as **Page No.36 to 39**
d.	Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28^0; and	An undertaking and a Plan to stabilize the overburden dumps by appropriate grading / benching is enclosed as **Page No.40 to 43.** Slope Stability Study Report conducted by the IIT-Kharagpur is also enclosed herewith as **Page No. 44 to 88**
e.	No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.	An undertaking and a Top Soil Management Plan is enclosed as **Page No.89 to 92**
xiii.	The validity of approval granted under the Adhiniyam shall be for a period coterminus with the validity of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended from time to time or Rules framed there under, or for such period as may be specified by the Central Government;	The subject forest land 0.20 Ha was acquired vide CBA (A&D) Act 1957 with All Rights vide S.O. No.2525 dated 13th September 2011. Hence, mining lease from the State Government may not applicable. It can be seen vide the clarification issued by the Ministry of Coal vide letter F.No.43015/28/2017-LAIR (Vol.II) dated 11th December 2019, **QUOTE** "Since the subject land was acquired under the CBA (A&D) Act, 1957 and vests absolutely in the Government Company, neither the execution of mining lease with the State Government is required as per statute nor there is any necessity as it was not along with the Mineral Concessions Rules, 1960 does not apply over the land / rights acquired under CBA (AD) Act 1957." **UNQUOTE** Copy of the letter from Ministry of Coal is enclosed as **Page No. 93 to 94**
xiv.	The User Agency either himself or through the State Forest Department shall undertake gap planting and soil and moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if	Agreed. It is to inform that, NO suitable degraded open forest land is available within 100-meter outer perimeter of the mining lease as contemplated in this condition. However, an Undertaking has been enclosed as **Page No.95**

	any, located within the periphery of 100 m from outer perimeter of the mining lease as per approved plan for plantation and SMC activities submitted along with compliance of 'in-principle' approval;	
xv.	The User Agency shall regularly undertake desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per approved plan, to mitigate the impact of project on such tanks/water bodies;	Desilting plan prepared as per the approved EMP. An Undertaking along with a Detailed Plan and a geo-tagged map showing village tanks and waterbodies within 5 km radius of the Bhatadi Expansion Opencast project with GPS Coordinates are enclosed as **Page No.96 to 100**
xvi.	The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;	Agreed. An Undertaking has been enclosed as **Page No. 101**
xvii.	Adequate care shall be taken to check any rolling of overburden/dumps beyond the designated area and to check soil erosion caused due to mining activities;	Agreed. Overburden will be stored in designated locations within permissible height as per the approved Project Report / Mining Plan. Garland Drains and Trenches are provided along the toe of the dumps to arrest any flow of silt and soil beyond the designated. An undertaking is enclosed for the same as **Page No. 102**
xviii.	The User agency will undertake comprehensive soil conservation measures at the project cost in consultation with the State Forest Department. A scheme of the same shall be submitted to the Regional Office along with the 'in-principle' approval;	Agreed. An undertaking and a Scheme for Soil Conservation Measures is enclosed as **Page No.103** and **103a to 103d.**
xix.	The R&R Plan shall be implemented as per the R&R Policy of State Government in consonance with National R&R Policy, Government of India before the commencement of the project work and implementation. The said R&R Plan will be monitored by the State Government/Regional Office of MoEF & CC along with indicators for monitoring and expected observable milestones;	Agreed. An Undertaking, along with a corresponding Plan and relevant supporting documents, is enclosed herewith as **Page No.104 to 110**
xx.	The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled;	No tree felling is involved in this diversion. Hence, it is humbly submitted that exploring option for translocation of trees may not applicable.
xxi.	The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;	The proposed forest land is having a canopy density of 0.1 with no major trees. It can be verified with Part II of Forest

		Clearance proposal submitted by Divisional Forest Officer, Chandrapur Forest Division. Hence, it is humbly submitted that deposition of cost of tree may not applicable.
xxii.	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	Complied. Copy of Environment Clearance enclosed as **Page No.111 to 129**
xxiii.	No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the laborers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;	Agreed. An Undertaking is enclosed for the same as **Page No.130**
xxiv.	The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates; The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal;	Agreed. The proposed forest land 0.20 Ha is located in the middle of Quarry-II. Demarcation of Forest Land is available at the ground level. Demarcation of Mine Lease Area and Safety Zone Area was already carried out by WCL. It will be maintained as it is. Layout Plan of the mining plan / proposal will not be changed without prior approval of the Central Government. It is submitted that the Forest Land will not be used for any other purpose other than that specified in the proposal. An Undertaking for the same is enclosed as **Page No. 131**
xxv.	The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;	Agreed. An undertaking is enclosed for same as **Page No. 132**
xxvi.	No damage to the flora and fauna of the adjoining area shall be caused;	Agreed. An undertaking is enclosed for same as **Page No. 133**
xxvii	The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project;	Agreed. An undertaking is enclosed for same as **Page No. 134**
xxviii.	The User Agency shall submit the annual self - compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly;	Agreed. Once the forest land is handed over for mining purpose, WCL will submit Annual Self-Compliance Report by the end of March every year regularly. An undertaking is enclosed for same as **Page No. 135**
xxix.	Any other condition that the Ministry of Environment, Forests & Climate Change may stipulate from time to time in the	Agreed. An undertaking is enclosed for same as **Page No. 136**

	interest of conservation, protection and development of forests & wildlife;	
xxx.	Violation of any of these conditions will amount to violation of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and action would be taken as prescribed in para 1.16 of consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 as issued by this Ministry on dated 29.12.2023;	Agreed. An undertaking is enclosed for same as **Page No. 137**
xxxi.	The compliance report shall be uploaded on e-portal (https://parivesh.nic.in/).	Agreed.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Place: Chandrapur
Date: 21-04-2025

STAGE I COMPLIANCE REPORT
FOR DIVERSION OF 0.20 HA ZUDPI JUNGLE FOREST LAND
AGAINST MOEF & CC LETTER DATED 14.01.2025

FOR BHATADI EXPANSION OPENCAST PROJECT

WESTERN COALFIELDS LIMITED, CHANDRAPUR AREA

List of Annexure

Annexure No.	Related Condition No.	Particulars	Page No.
1	iii	Approved Plantation Scheme for against Safety Zone Green Belt	2-9
2	iv	Stage I Payment details and E-Challan	11-13
3	viii	Plan against Compliance of Mining in Phased Manner, Tree Felling & Reclamation	16-18
4	ix	Land Surrender Schedule	19-20
5	xii (a)	Plan to Mitigate Soil Erosion & Choking of Streams	28-32
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7	xii (c)	Plan for Construction of Check Dam, Retention Walls / Toe Walls	37-39
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11	xiii	Ministry of Coal, Govt. of India Clarification regarding applicability of Mining Lease	93-94
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15	xxii	Environmental Clearance	111-129

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पत्रा. वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर,
महाराष्ट्र, पिन : 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: i

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding Legal status of the diverted forest land)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *the Legal status of the diverted forest land will remain unchanged* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

SEFETY ZONE SCHEME
BHATADI (EXPANSION) OPEN CAST MINE
Model No. 5

Division: Chandrapur
Range: Chandrapur
Compartment No. : Safety Zone along with the inner boundary of the lease area

Total Area (Ha.): 11.000
Spacement - 2.00 m. x 2.00 m.
Size of pits - 0.45 x 0.45 x 0.45 m
No. of seedlings - 1111 per ha.
Wages (Rs.): 569.69
Periferal Length (meter): 14660

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
A. Pre Monsoon Works (PPO/[redacted])									
1	**a. Survey and demarcation**	1.00	569.69	100.00	669.69	11.00	6266.59	1100.00	7366.59
	b. Preparation of treatment map (100 m 50 m grid)	1.00	569.69	100.00	669.69	11.00	6266.59	1100.00	7366.59
	c. Corner of grid digging of trial pits size 0.30 x 0.30 x 0.60 m.	0.40	227.88	0.00	227.88	4.40	2506.64	0.00	2506.64
	d. 60 cm. x 5 cm. x 12 cm. Cement pillar 30 cm. deep erecting and colour the pillar and write the grid no. on pillar (3 pillars Rs. 75/- per pillar)	0.00	0.00	225.00	225.00	0.00	0.00	2475.00	2475.00
	e. Clearing of bushes and preparation of site (As per requirement)	10.00	5696.90	100.00	5796.90	110.00	62665.90	1100.00	63765.90
2	Soil and moisture conservation works includidng collection of rubbles from area upto 30 m etc.	31.00	17660.39	0.00	17660.39	341.00	194264.29	0.00	194264.29
3	Chainlink And Fencing 1350 rmt for 4.32 ha. (Including 1 gate) (Rs. 1200/- per rmt as per tender) (height 1.65 m., 10 gauge wire, Net size 10 cm. x 10 cm. distance 2 pole 2.5 m. (281.25 x 1200 = 337500)	0.00	0.00	337500.00	337500.00	0.00	0.00	3712500.00	3712500.00
	12% GST on amount of Chainlink Fencing	0.00	0.00	40500.00	40500.00	0.00	0.00	445500.00	445500.00
4	Alignment of pits at 3.0 x 3.0 m spacement 1111 pits per ha. and alignment of pits 0.45 x 0.45 x 0.45 m. total pits 1111 per 100 pits 0.26 M.D. and M.S. Rs. 9.81 per 100 pits	2.89	1646.40	109.00	1755.40	31.79	18110.45	1199.00	19309.45

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
5	Digging of pits of 0.45 x 0.45 x 0.45 m size 1111 pits per ha (6.60 M.D. per 100 pits)	73.33	41775.37	0.00	41775.37	806.63	459529.04	0.00	459529.04
6	Inspection path 5 m. width 1 M.D. per 100 m. per ha.	1.00	569.69	0.00	569.69	11.00	6266.59	0.00	6266.59
7	Counting of valuable natural plant species and colour tape and take entry in register (0.75 M.D. per 100 plants)	0.75	427.27	25.00	452.27	8.25	4699.94	275.00	4974.94
8	Raise a plantation information board (4 x 3 ft.) 1 No.	0.00	0.00	6000.00	6000.00	0.00	0.00	66000.00	66000.00
9	Part nursary cost 1111 plant for planting + 10% casualty total raising 1222 plants (12.50 x 25 cm. bag size) October to March per plant 12.55 (Per plant wages Rs. 8.93 and M.S. 3.62 per plant)	35.43	20184.12	4423.64	24607.76	389.73	222025.28	48660.04	270685.32
	Total	**156.80**	**89327.39**	**389082.64**	**478410.03**	**1724.80**	**982601.31**	**4279909.04**	**5262510.35**
	Contingency 3%			14352.30	14352.30			157875.31	157875.31
	Labour Welfare 4%			19136.40	19136.40			210500.41	210500.41
	Grand Total	**156.80**	**89327.39**	**422571.34**	**511898.73**	**1724.80**	**982601.31**	**4648284.76**	**5630886.08**

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
B. First Year Operation									
	Wage Rate increase 10% @ 626.66								
1	1222 plants raising in nursary (April to June) 10% casualty including 12.50 x 25 cm. size bags use for plants wages Rs. 2.69 & M.S. Rs. 0.81 per plant.	10.67	6686.46	989.82	7676.28	117.37	73551.08	10888.02	84439.10
2	Refiling of pits with good quality soil 1.66 MD per100 pits	18.44	11555.61	1944.25	13499.86	202.84	127111.71	21386.75	148498.46
3	Transporting of 1222 plants wages 0.14 MD per 100 plants and M.S. Rs. 1.82 per plant.	1.71	1071.59	2224.04	3295.63	18.81	11787.47	24464.44	36251.91
4	Planting in plantation 1 MD per 100 plants	11.11	6962.19	0.00	6962.19	122.21	76584.12	0.00	76584.12
5	1 weedings 100 plants 1 MD and one soil workings per 100 plants 0.5 MD and seedlings fertilizers application Rs. 0.82 per seedling	44.44	27848.77	911.02	28759.79	488.84	306336.47	10021.22	316357.69
6	Casualty replacement (10% 111 seedling per ha) (2 M.D per 100 seedlings)	2.22	1391.19	0.00	1391.19	24.42	15303.04	0.00	15303.04
7	As needed 1111 plants in between month of November, December one time and January to March two times per plant 5 ltr. giving the water (5 ltr. Plastic can 1111/Pot @25 Rs. As per 100 ltr. 11 drums @400/- Rs. And 50 paise per ltr. Water give to plant @150 plant per MD.	59.25	37129.61	54395.00	91524.61	651.75	408425.66	598345.00	1006770.66
8	Part nursary cost for second year 10% of 1111 plant for planting casualty total raising 111 plants (Per plant wages Rs. 8.93 and M.S. 3.62 per plant)	3.22	2017.85	401.82	2419.67	35.42	22196.30	4420.02	26616.32
9	Plantation protection for 9 months - July to March per 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	27.38	17157.95	0.00	17157.95	301.18	188737.46	0.00	188737.46
10	Weeding of NR plants and soil working and singling per 100 plants 1.15 MD.	1.15	720.66	10.00	730.66	12.65	7927.25	110.00	8037.25
11	In month of October survival percentage as per grid counting of plants and noting in register.	0.50	313.33	5.00	318.33	5.50	3446.63	55.00	3501.63
12	Fire tracing	2.00	1253.32	0.00	1253.32	22.00	13786.52	0.00	13786.52
	Total	**182.09**	**114108.52**	**60880.95**	**174989.47**	**2002.99**	**1255193.71**	**669690.45**	**1924884.16**
	Contingency 3%			5249.68	5249.68			57746.52	57746.52
	Labour Welfare 4%			6999.58	6999.58			76995.37	76995.37
	Grand Total	**182.09**	**114108.52**	**73130.21**	**187238.73**	**2002.99**	**1255193.71**	**804432.34**	**2059626.05**

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
C. Second Year Operation									
	Wage Rate increase 10% @ 689.33								
1	Part nursary cost for second year 10% of 1111 plant for planting casualty total raising 111 plants (Per plant wages Rs. 2.69 and M.S. 0.81 per plant)	0.97	668.65	89.91	758.56	10.67	7355.15	989.01	8344.16
2	Transporting of 111 plants wages 0.14 MD per 100 plants and M.S. Rs. 1.82 per plant.	0.15	103.40	202.02	305.42	1.65	1137.39	2222.22	3359.61
3	In the place of dead plants 10% replanting 111 plants, 100 plants 2 MD	2.22	1530.31	0.00	1530.31	24.42	16833.44	0.00	16833.44
4	2 weedings 100 plants 1 MD and one soil workings per 100 plants 0.5 MD and seedlings fertilizers application Rs. 0.82 per seedling	27.77	19142.69	911.02	20053.71	305.47	210569.64	10021.22	220590.86
5	As needed 1111 plants in between month of November, December, January and June one time and February to May two times per plant 5 ltr. giving the water (5 ltr. Plastic can 111/Pot @25 Rs. (10% replacement of damage) And 50 paise per ltr. Water give to plant @150 plant per MD.	88.88	61267.65	36105.00	97372.65	977.68	673944.15	397155.00	1071099.15
6	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	25160.55	0.00	25160.55	401.50	276766.00	0.00	276766.00
7	In month of May to October survival percentage as per grid counting of plants and noting in register.	1.00	689.33	0.00	689.33	11.00	7582.63	0.00	7582.63
8	Fire tracing	2.00	1378.66	0.00	1378.66	22.00	15165.26	0.00	15165.26
	Total	**159.49**	**109941.24**	**37307.95**	**147249.19**	**1754.39**	**1209353.66**	**410387.45**	**1619741.11**
	Contingency 3%			4417.48	4417.48			48592.23	48592.23
	Labour Welfare 4%			5889.97	5889.97			64789.64	64789.64
	Grand Total	**159.49**	**109941.24**	**47615.39**	**157556.64**	**1754.39**	**1209353.66**	**523769.33**	**1733122.99**

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
D. Third Year Operations									
				Wage Rate increase 10% @ 758.26					
1	1 weedings and soil working 100 plants 1 MD and seedlings fertilizers application Rs. 0.82 per seedling	16.67	12640.19	911.02	13551.21	183.37	139042.14	10021.22	149063.36
2	As needed 556 plants in between month of November, December, January and June one time and February to May two times per plant 5 ltr. giving the water 50 paise per ltr. Water give to plant @150 plant per MD.	44.48	33727.40	18070.00	51797.40	489.28	371001.45	198770.00	569771.45
3	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	27676.49	0.00	27676.49	401.50	304441.39	0.00	304441.39
4	Weeding of NR plants and soil working, singling, plants height and girth of bottam take a entry per plant 2.35 MD per 100 plants	2.35	1781.91	0.00	1781.91	25.85	19601.02	0.00	19601.02
5	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	1516.52	25.00	1541.52	22.00	16681.72	275.00	16956.72
6	Fire tracing	2.00	1516.52	0.00	1516.52	22.00	16681.72	0.00	16681.72
	Total	**104.00**	**78859.04**	**19006.02**	**97865.06**	**1144.00**	**867449.44**	**209066.22**	**1076515.66**
	Contingency 3%			2935.95	2935.95			32295.47	32295.47
	Labour Welfare 4%			3914.60	3914.60			43060.63	43060.63
	Grand Total	**104.00**	**78859.04**	**25856.57**	**104715.61**	**1144.00**	**867449.44**	**284422.32**	**1151871.76**
E. Fourth Year Operations									
				Wage Rate increase 10% @ 834.09					
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	30444.29	0.00	30444.29	401.50	334887.14	0.00	334887.14
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	1668.18	25.00	1693.18	22.00	18349.98	275.00	18624.98
3	Fire tracing	2.00	1668.18	0.00	1668.18	22.00	18349.98	0.00	18349.98
	Total	**40.50**	**33780.65**	**25.00**	**33805.65**	**445.50**	**371587.10**	**275.00**	**371862.10**
	Contingency 3%			1014.17	1014.17			11155.86	11155.86
	Labour Welfare 4%			1352.23	1352.23			14874.48	14874.48
	Grand Total	**40.50**	**33780.65**	**2391.40**	**36172.04**	**445.50**	**371587.10**	**26305.35**	**397892.44**

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
F. Fifth Year Operations									
	Wage Rate increase 10% @ 917.50								
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	33488.75	0.00	33488.75	401.50	368376.25	0.00	368376.25
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	1835.00	25.00	1860.00	22.00	20185.00	275.00	20460.00
3	Fire tracing	2.00	1835.00	0.00	1835.00	22.00	20185.00	0.00	20185.00
	Total	**40.50**	**37158.75**	**25.00**	**37183.75**	**445.50**	**408746.25**	**275.00**	**409021.25**
	Contingency 3%			1115.51	1115.51			12270.64	12270.64
	Labour Welfare 4%			1487.35	1487.35			16360.85	16360.85
	Grand Total	**40.50**	**37158.75**	**2627.86**	**39786.61**	**445.50**	**408746.25**	**28906.49**	**437652.74**
G. Sixth Year Operations.									
	Wage Rate increase 10% @ 1009.25								
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	36837.63	0.00	36837.63	401.50	405213.88	0.00	405213.88
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	2018.50	25.00	2043.50	22.00	22203.50	275.00	22478.50
3	Fire tracing	2.00	2018.50	0.00	2018.50	22.00	22203.50	0.00	22203.50
	Total	**40.50**	**40874.63**	**25.00**	**40899.63**	**445.50**	**449620.88**	**275.00**	**449895.88**
	Contingency 3%			1226.99	1226.99			13496.88	13496.88
	Labour Welfare 4%			1635.99	1635.99			17995.84	17995.84
	Grand Total	**40.50**	**40874.63**	**2887.97**	**43762.60**	**445.50**	**449620.88**	**31767.71**	**481388.59**
H. Seventh Year Operations									
	Wage Rate increase 10% @ 1110.18								
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	40521.57	0.00	40521.57	401.50	445737.27	0.00	445737.27
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	2220.36	25.00	2245.36	22.00	24423.96	275.00	24698.96
3	Fire tracing	2.00	2220.36	0.00	2220.36	22.00	24423.96	0.00	24423.96
	Total	**40.50**	**44962.29**	**25.00**	**44987.29**	**445.50**	**494585.19**	**275.00**	**494860.19**
	Contingency 3%			1349.62	1349.62			14845.81	14845.81
	Labour Welfare 4%			1799.49	1799.49			19794.41	19794.41
	Grand Total	**40.50**	**44962.29**	**3174.11**	**48136.40**	**445.50**	**494585.19**	**34915.21**	**529500.40**

Sr. No.	Particulars of works	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs. Per Ha.)
I. Eigth Year Operations									
	Wage Rate increase 10% @ 1221.20								
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	44573.80	0.00	44573.80	401.50	490311.80	0.00	490311.80
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	2442.40	25.00	2467.40	22.00	26866.40	275.00	27141.40
3	Fire tracing	2.00	2442.40	0.00	2442.40	22.00	26866.40	0.00	26866.40
	Total	**40.50**	**49458.60**	**25.00**	**49483.60**	**445.50**	**544044.60**	**275.00**	**544319.60**
	Contingency 3%			1484.51	1484.51			16329.59	16329.59
	Labour Welfare 4%			1979.34	1979.34			21772.78	21772.78
	Grand Total	**40.50**	**49458.60**	**3488.85**	**52947.45**	**445.50**	**544044.60**	**38377.37**	**582421.97**
J. Nineth Year Operations									
	Wage Rate increase 10% @ 1343.32								
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	49031.18	0.00	49031.18	401.50	539342.98	0.00	539342.98
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	2686.64	25.00	2711.64	22.00	29553.04	275.00	29828.04
3	Fire tracing	2.00	2686.64	0.00	2686.64	22.00	29553.04	0.00	29553.04
	Total	**40.50**	**54404.46**	**25.00**	**54429.46**	**445.50**	**598449.06**	**275.00**	**598724.06**
	Contingency 3%			1632.88	1632.88			17961.72	17961.72
	Labour Welfare 4%			2177.18	2177.18			23948.96	23948.96
	Grand Total	**40.50**	**54404.46**	**3835.06**	**58239.52**	**445.50**	**598449.06**	**42185.68**	**640634.74**
K. Tenth Year Operations									
	Wage Rate increase 10% @ 1477.65								
1	Plantation protection for 12 months - 10 ha. 1 labour (Plantation protection, care taking of CCT, TCM & Conservation of NR)	36.50	53934.23	0.00	53934.23	401.50	593276.48	0.00	593276.48
2	In month of May to October survival percentage as per grid counting of plants and noting in register.	2.00	2955.30	25.00	2980.30	22.00	32508.30	275.00	32783.30
3	Fire tracing	2.00	2955.30	0.00	2955.30	22.00	32508.30	0.00	32508.30
	Total	**40.50**	**59844.83**	**25.00**	**59869.83**	**445.50**	**658293.08**	**275.00**	**658568.08**
	Contingency 3%			1796.09	1796.09			19757.04	19757.04
	Labour Welfare 4%			2394.79	2394.79			26342.72	26342.72
	Grand Total	**40.50**	**59844.83**	**4215.89**	**64060.71**	**445.50**	**658293.08**	**46374.77**	**704667.84**

ABSTRACT

Sr. No.	Year of Operation	Expenditure per ha.				Expenditure for 11.00 ha.			
		Man days	Wages	Material supply	Total (Rs. Per Ha.)	Man days	Wages	Material supply	Total (Rs.)
1	Pre-Monsoon works	156.80	89327.39	422571.34	511898.73	1724.80	982601.31	4648284.76	5630886.08
2	First Year Operation	182.09	114108.52	73130.21	187238.73	2002.99	1255193.71	804432.34	2059626.05
3	Second Year Operation	159.49	109941.24	47615.39	157556.64	1754.39	1209353.66	523769.33	1733122.99
4	Third Year Operation	104.00	78859.04	25856.57	104715.61	1144.00	867449.44	284422.32	1151871.76
5	Fourth Year Operation	40.50	33780.65	2391.40	36172.04	445.50	371587.10	26305.35	397892.44
6	Fifth Year Operation	40.50	37158.75	2627.86	39786.61	445.50	408746.25	28906.49	437652.74
7	Sixth Year Operation	40.50	40874.63	2887.97	43762.60	445.50	449620.88	31767.71	481388.59
8	Seventh Year Operation	40.50	44962.29	3174.11	48136.40	445.50	494585.19	34915.21	529500.40
9	Eigth Year Operation	40.50	49458.60	3488.85	52947.45	445.50	544044.60	38377.37	582421.97
10	Nineth Year Operation	40.50	54404.46	3835.06	58239.52	445.50	598449.06	42185.68	640634.74
11	Tenth Year Operation	40.50	59844.83	4215.89	64060.71	445.50	658293.08	46374.77	704667.84
Total :-		**885.88**	**712720.39**	**591794.67**	**1304515.05**	**9744.68**	**7839924.27**	**6509741.33**	**14349665.60**

(Prashant Khade)
Divisional Forest Officer,
Chandrapur Forest Division,
Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited

मिनिरत्न कम्पनी (A Miniratna Company)

कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)

CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.-बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: iii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding maintenance of safety zone with effective green belt)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *the safety zone along with the inner boundary area will be maintained with effective green belt* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

भारतीय स्टेट बैंक
State Bank of India
With you - all the way

e-PayOrder Details

e-PayOrder Number	AOWD609704
Debit Status	Success
Scheduled Time	20-Apr-2025 [10:47 AM] IST

20-Apr-2025

MAHARASHTRA CAMPA

One Crore Forty Five Lakhs Forty One Thousand Two Hundred and Twenty Two only **1,45,41,222.00**

00000011014449824

SFTPH2HUploader	Kavita Sharma	SHOBARANICHA
Maker	**Authorizer 1**	**Authorizer 2**
"AOWD609704"	**CMP00000001120190539**	

Counterfoil Description	11014449824
Transaction Type	Fund Transfer

Debit Account Details

Account No.	Branch	Amount
00000011014449824	00346	1,45,41,222.00

Credit Account Details

Beneficiary Name	Beneficiary A/C	Beneficiary IFSC Code	Amount	Credit Status	UTR No.
MAHARASHTRA CAMPA	150785817443791	UBIN0996335	1,45,41,222.00	Success	SBINR12025042082752414

20/4/25

AREA FINANCE MANAGER
CHANDRAPUR AREA

SBI

Date	: 20 Apr 2025
Account Number	: 00000011014449824
Description	: null
Name	: WCL WARDHA VALLY AREA (PAN NO.AAACW1578L)
Currency	: INR
Corporate Address	COAL ESTATE CIVIL LINES
mh	NAGPUR
	Maharashtra-440001
Branch	: CHANDRAPUR(00346)
Rate of Interest (% p.a.)	: 0.0%
IFS Code	: SBIN0000346
Book Balance	: 10433.66
Available Balance	: 10433.66
Hold Value	: 0.00
Uncleared Amount	: 0.00
Balance as on 20 Apr 2025	: 1,04,655.66

Account Statement from 20 Apr 2025 to 20 Apr 2025

Txn Date	Value Date	Description	Ref No./Cheque No.	Branch Code	Debit	Credit	Balance
20/04/2025	20/04/2025	TRANSFER CREDIT-SWEEP FROM 00004599112044304-	SWEEP FROM 44016255808 WCL WARDHA VALLY AREA /	99922		81,30,000.00	82,34,655.66
20/04/2025	20/04/2025	TRANSFER CREDIT-SWEEP FROM 00004599112044304-	SWEEP FROM 44011939031 WCL WARDHA VALLY AREA /	99922		63,17,000.00	1,45,51,655.66
20/04/2025	20/04/2025	TO TRANSFER-INB RTGS UTR NO: SBINR12025042082752414-	RTGS INB: AOWD609704 TRANSFER TO 4599112044304 /	99922	1,45,41,222.00		10,433.66

20/4/25

AREA FINANCE MANAGER
CHANDRAPUR AREA

AGENCY COPY

यूनियन बैंक Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 17-04-2025

Agency Name.	Western Coalfields Ltd
Application No.	5817443791
MoEF/SG File No.	FC-I/MH-341/2023-NGP
Location.	MAHARASHTRA
Address.	Area General Manager Chandrapur Area Chandrapur PO Babupeth ChandrapurChandrapur
Amount(in Rs)	14541222/-

Amount In Words :One Crore Forty-Five Lakh Forty-One Thousand Two Hundred and Twenty-Two Rupees Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	MAHARASHTRA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150785817443791 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre,21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY

यूनियन बैंक Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds

Date : 17-04-2025

Agency Name.	Western Coalfields Ltd
Application No.	5817443791
MoEF/SG File No.	FC-I/MH-341/2023-NGP
Location.	MAHARASHTRA
Address:	Area General Manager Chandrapur Area Chandrapur PO Babupeth Chandrapur Chandrapur
Amount(in Rs)	14541222/-

Amount In Words :One Crore Forty-Five Lakh Forty-One Thousand Two Hundred and Twenty-Two Rupees Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	MAHARASHTRA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150785817443791 Valid only for this challan amount.
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note:After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank , epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

for Stage I compliance Payment towards diversion of 0.20 Ha Forest Land, Bhatadi Ok Project, CHF NPV & SZ Green Belt

Manager (Community Development)
Chandrapur Area. WCL

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
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Condition No: v

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding payment of additional amount of NPV)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *we shall pay the additional amount of NPV at the then prevailing rate, if so determined, as per the final decision of the Hon'ble Supreme Court of India* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/-25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

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मिनिरत्न कम्पनी (A Miniratna Company)
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Condition No: viii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding Mining in a phased manner after taking due care for reclamation)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *mining will be carried out in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan will be executed from the very first year and an annual report on implementation thereof will be submitted to the Nodal Officer, and the Regional Office of the Ministry* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

Condition No.viii

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

COMPLIANCE TOWARDS MINING IN PHASED MANNER, TREE FELLING AND PLAN FOR LAND RECLAMATION

Mining Strategy:

Two quarries have been proposed in Bhatadi Expansion OC mine. Considering the practical difficulties in river diversion & village shifting, it is proposed to first work quarry-I. Quarry No. II would be worked after quarry-I gets exhausted. A separate access trench has also been proposed for quarry-II. However, if Bhatadi village is shifted in time, no separate access trench would be required for quarry-II and entry can be made from quarry-I.

Tree Felling:

The 0.20 Ha Forest Land does not have any major trees and it was confirmed by the State Forest Department in Part II of the Proposal and during the Site Inspections. However, Tree Felling in the non-forest land will be carried out as per the progress of the mining plan. Necessary permissions will be obtained as per Maharashtra Felling of Trees (Regulation) Act 1964 from the Tree Officer/Range Forest Officer.

Reclamation Plan:

In an opencast project, land degradation occurs due to excavation activities and the creation of overburden (OB) dumps. To mitigate the impact of this degradation, simultaneous backfilling is carried out as much as possible. Additionally, efforts are made to minimize the extent of land designated for OB dumps, ensuring that the environmental footprint is kept as small as feasible.

Reclamation Procedure to be followed during the Mining Operation:

i) The top of the dump will be leveled with dozer and grader

ii) An edge bund will be made along its periphery

iii) The top of the dump will be divided into a number of plots of suitable size with a series of hills and valleys so as to enable the excess storm water to flow down.

iv) Water so collected at the foot of the spoil bank will be led into drains bunding into check dam for settling of the suspended solids.

v) Pits are then proposed to be dug in the contour trenches and filled with a mixture of top soil and manure / fertilizers. Saplings would, then be planted at the commencement of monsoon. Later when monsoon are over, they would be irrigated wit piped water.

vi) The biological reclamation of dump slopes would commence as soon as first bench is ready. The slopes would be flattened and leguminous grass sees would be sown. This would help in rapid binding and consolidation of soil on slopes and improved soil fertility.

vii) A progressive afforestation plan will be implemented in which includes reclaimed area along with Mining Lease Boundary, along roads and infrastructure, embankments, vacant land (if any,) by planning native species in consultation with the State Forest Department.

viii) The terraces are to be sloped inward. There will be open masonry drains on all terraces at the foot of the bench.

ix) Once the mined-out area have been backfilled, the same efforts discussed above shall be undertaken in respect of backfilled area.

The reclamation of the mining area follows the dumping strategy outlined in the approved project report. The project proposes the removal of 80.49 million cubic meters (MM^3) of overburden. Of this, 61% (48.05 MM^3) will be used for backfilling Quarry I. The topsoil, which is stored in the External Dump (D1), will be applied over the backfilled area for biological reclamation. The top soil cover in the area is very less. There is hardly any except some bushes even on the forest area. The mine closure plan includes provisions for reclamation and backfilling activities. Mining will be conducted in phases, with afforestation and reclamation efforts starting in the first phase of mined-out areas while mining continues in the second phase. The year-wise dumping strategy, as per the approved project report, is provided below:

Schedule of Land Reclamation

Year	Volume of OB Dumping (Mm^3)			Total
	External Dump – D1	Embankment	Internal Dump Below Ground	
1	6.946	0	0	6.946
2	8.600	0	0	8.600
3	5.578	0	0	5.578
4	5.801	0	0	5.801

5	4.515	1.00	0.286	5.801
6	0	0	5.801	5.801
7	0	0	5.801	5.801
8	0	0	5.801	5.801
9	0	0	5.801	5.801
10	0	0	5.801	5.801
11	0	0	4.500	4.500
12	0	0	4.500	4.500
13	0	0	4.500	4.500
14	0	0	3.500	3.500
15	0	0	1.757	1.757
Total	**31.44**	**1.00**	**48.05**	**80.49**

Plantation is also planned for the mechanically reclaimed land during the first three years of the mining operation. This will help accelerate the reclamation process and promote ecological restoration of the mined areas. Financial provision have also been made in the approved Project Report for augmentation / strengthening of existing Plantation as given below:

(Amounts in Rs.'000)

Sl.No.	Particulars	Capital Provision			References
		No.	Unit	Total Amount	
1	Plantation during First three year	LS	LS	15.00 Lakhs	Appendix –A.8.4(A)

(Harshad Datar)
Area General Manager
Chandrapur Area

21/04/25
(Punam Z Dhoble)s
Sub Area Manager
Bhatadi Sub Area

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Date: 21-04-2025
Place: Chandrapur

Condition No.ix

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

Land Surrender Plan for Zudpi Jungle Forest Land 0.20 Ha of Bhatadi OC Mine, WCL-Chandrapur Area

Mining is a large-scale activity which involves huge quantum of land area. It utilizes heavy machineries like Dumpers with capacity of 60 tons or more, Excavators, Drilling Machines etc. Opencast mining requires minimum defined of land area for rationalization and safety purpose. The location of coal reserve is site specific, which makes acquisition and diversion of the forest land is necessary for coal mining. Diversion of forest land is taken only if it is unavoidable by the User Agency. The diverted forest lands will be backfilled, biologically reclaimed as per the approved mining plan and mine closure plan. Then, it will be surrendered back to the Forest Department at the end of completion of mining activities.

Project Report of Bhatadi Opencast Project was approved by the WCL board in December 1988 with a capacity of 0.25 Million Tonnes Per Annum. Excavation work was started since the year 1995. The Zudpi jungle forest land admeasuring 0.20 Ha was acquired by the WCL u/s 9(i) of CBA (A&D) Act 1957 vide SO No.2525 dated 13.09.2011. The Project Report of Bhatadi Expansion OC Project was approved in the 273rd meeting of WCL Board held on 3rd February 2016.

The existing Bhatadi Expansion OC mine is being worked in Bhatadi OC block. The operation of existing mine has been planned in two quarries i.e. Quarry-I (Western quarry) and Quarry-II (Eastern quarry). Considering the practical difficulties in river diversion & village shifting, it is proposed to first work quarry-I. Quarry No. II would be worked after quarry-I gets exhausted. Presently, mine working is being done in Quarry-I and it has reached upto 57 m FRL (about 138 m depth) as on 31.03.2019. Quarry-II is still virgin as it involves straightening / diversion of part of Erai river and shifting and rehabilitation of Bhatadi village. The Zudpi Jungle Forest Land 0.20 Ha was falling in the middle of the proposed Quarry

II and located adjacent to the village and within 200+ meter distance from the western bank of Erai River.

As per the sequence of dumping and stage-wise plan, backfilling of void of the quarry will be initiated at the end of 10th year of mine life. During this period 1.23 MM^3 quantity of internal dumping is proposed. At the end of 15th year, 25.50 MM^3 internal dumping will be done. This is a continuous process in which 55.50 MM^3 & 229.31 MM^3 quantity of internal dumping will be done at the end of 20th Year and End of Mine Life.

Working in the 0.20 Ha Forest Land may be possible after diversion of the Erai River. Design for the diversion of Erai River will be done through Central Designs Organization (CDO), Nashik. As per the latest Project Report of approved by the Coal India Limited Board in 2020, the mine life is 25 years. Hence, as per the mining plan, this 0.20 Ha Forest Land will be surrendered back to Forest Department at the 25th Year and as per the Mine Closure Plan. If the forest land is handed over to WCL after Stage II forest clearance and necessary formalities within the year 2025, it may be surrendered at the end of 25th Year of mine life.

21/04/25

(Harshad Datar)
Area General Manager
Chandrapur Area

(Punam Z Dhoble)s
Sub Area Manager
Bhatadi Sub Area

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Place : Chandrapur
Date : 21-04-2025

केवल नागपुर कोर्टके अधिकारक्षेत्र में

Under Jurisdiction of Nagpur Court only

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मिनिरत्न कम्पनी (A Miniratna Company)
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Condition No: ix

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding surrender of the mined out and reclaimed forest land)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *the mined out and reclaimed 0.20 Ha forest will be surrendered as per the land surrender schedule prepared by the project authority* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

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वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited

मिनिरत्न कम्पनी (A Miniratna Company)

कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)

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Condition No: x

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding handing over of rehabilitated forest area)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *0.20 Ha forest will be handed over to the State Forest Department after closure of mining operations* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
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Condition No: xi(a)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

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UNDERTAKING

(Regarding demarcation of safety zone)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *7.5-meter strip safety zone, all along the inner boundary of the mining lease area will be demarcated with RCC Boundary Pillars inscribed with DGPS coordinates with barbed wire fencing* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

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15 YEARS OF CELEBRATING THE MAHATMA

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Condition No: xi(b)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding fencing the boundary of safety zone, adjacent to habitation/roads)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *the boundary of the safety zone of the mining lease, adjacent to habitations/roads will be properly fenced at the cost of the User Agency* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

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Condition No: xi(c)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding maintenance of green belt around mining lease, canopy density and regeneration of Safety zone)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *the safety zone will be maintained as green belt around mining lease and canopy density and regeneration in the area will be ensured at project cost under the supervision of the State Forest Department* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/-25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

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पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
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Condition No: xi(d)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding maintenance of safety zone as per the norms)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *maintenance of safety zone as per the prescribed norms will be ensured by the WCL* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर,
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Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xii(a)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding mitigative to minimize soil erosion and chocking of streams)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *mitigative measures to minimize soil erosion and chocking of stream will be implemented within a period of three years with effect from the date of issue of 'Final' approval in accordance with the approved Plan in consultation with the State Forest Department* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

Condition No.xii- a

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

PLAN TO MITIGATE SOIL EROSION & CHOKING OF STREAMS

INTRODUCTION –

Bhatadi OC block forms the north-western continuity of Durgapur - Padmapur blocks of Wardha Valley coalfield, District: Chandrapur, Maharashtra. The Latitude of the area ranges from N 20°03'50" to 20°05'36" and Longitude of the area is from E 79°15'21" to 79°16'40". The area is covered in the Survey of India Toposheet No. 55 P/4 and P/8. The project is located at a distnce of 14 km from Chandrapur Railway Station.

OBJECTIVE –

- To plan mining operation in such a way that NO or MINIMUM Soil Erosion and Choking of Streams within the mine lease boundary.
- To plan mining operation in such a way that No or minimum silting occur in the water bodies /ponds within 5.0 Kilometer of the mine lease boundary. For desilting of identified tanks and water bodies if any so as to mitigate the impact of siltation on such tanks/water bodies.

THE PLAN –

The Bhatadi OC Project of WCL-Chandrapur Area have taken effective precautions as mentioned in their Environment Management Plan and Environmental Clearance Conditions. Environment Clearance obtained for Bhatadi OC Mine from the Ministry of Environment, Forest Clearenace & Climate Change vide letter no. J-11015/151/2014-IA-II(M) dated 13thMarch 2020 for 1.465 MTPA. Bhatadi OC Mine is an ongoing project.According to the EC obtained and as per Environment Management Plan of the Bhatadi OC the following activities have been proposed.We herewith mention several initiatives which are helpful to avoid choking of streams and soil erosion as per*(Sl. No.16.1Air Pollution Control Measures (page no.44 of Project Report)*:

(i) Suppressive Measures for controlling Air Pollution

The dust generated during the mining operation viewed as one of the reason for choking of streams and nearby water bodies. It is to inform that the Coal produced by Bhatadi Opencast Project is being transported through 6.2 Km lengthy Aerial Pipe Conveyor System from the Project to CSTPS Outlet since 2021 onwards. In addition to the above following measures are being taken for controlling Air Pollution in and around the project area.

a. Water spraying is to be carried out on haul road at regular interval during each shift.
b. Water spraying arrangement at dust generating points in CHP, feeder breaker, conveyor transfer points etc.
c. Proper maintenance of all internal combustion engines to reduce smoke and exhaust fumes.
d. Dust extractors in working condition in all the drills
e. Tree plantation in rows and blocks along the approach road of the mine and also along the coal transportation road on both sides.
f. Perimeter tipping of external overburden dumps. Tree plantation on the slope of the perimeter dump.

g. Water spraying mixed with safe and non-toxic dust suppression chemicals on haul roads during dry months.
h. Coal transportation in trucks covered with tarpaulin.
i. Avoiding overloading of trucks.
j. Frequent cleaning of coal transportation road.

(ii) Industrial Effluent

The used water from the industrial area comprising CHP, Workshop, Garage etc. may be contaminated with with grease, oil, coal dust, dirt etc. This water will be allowed to settle and suitable treatment will be carried out in oil and grease trap. Thereafter the treated water will be mostly recycled.To avoid any discharge of effluent into natural watercourses, sewage disposal arrangement has been envisaged. Combined Open Surface Drains, Sewerage disposal arrangement for service buildings, Sedimentaion Tank, Chlorinator have been envisged in the approved Project Report of Bhatadi OC Project in Appendix A.8.3.2, A.8.3.3 & A.8.3.4.

Industrial waste water is being collected properly. Workshop effluent treatment plant of 75 KLD capacity having dimensions of 19.20m X 4.50m (2 Nos.) is in operation for excavation workshop. Clear water coming out from the treatment plant is taken into the closed water circuit and recycled for its reuse. All parameter of ETP waste discharge is being monitored regularly as per Env. (Protection) Amendment Rule, 2000 and the same shall be done for expansion project.

(iii) Mine Water

The quantity of mine water pumped out would vary according to the season. The mine water may contatin various impurities like coal dust, traces of grease, oil etc. in various proportions. The mine water would be allowed to collect in the quarry sump where primary settling would take place. The water would then be pumped into secondary settling tanks on the surface. Here the water would be allowed to settle and thereafter part of treated water will be utilized for meeting IN-House water requirement (like dust suppression, watering of plants, washing of HEMM, potable use etc.).(Page no.44 of PR 2015)

For mine discharge water, 2 Nos of Settling tanks of dimension 25.0 m x 9.0 m x 2.5 m , 25.0 m x 12.0 m x 2.5 m has been constructed in such a way that the mine water loaded with suspended solids pass through it before being dischargedtothe nearby natural water courses. The construction of additional 10000GPH capacity setting tank is under process near filtration plant and another 10000 GPH capacity settling tank construction is proposed near CHP of the mine. The existing and the proposed arrangement of mine water treatment is sufficient to take care of the needs of expansion projects.

(iv) Surface Run Off

The rain water flowing down overburden dumps is collected foot drains and then channelized to the main drainage system. This water contain suspended particles from OB dumps. This results in additional contamination of water and erosion of dumps.

Peripheral trenching is recommended near external OB dumps for coursing the run-off and leached water from the dumps. If required, the water may be sent to surface settling tanks before discharging it into the drainage channels*(16.2 in page no.44 of Project Report)*

As per approved EMP of May 2019, following mitigation measures are proposed:

(i) Garland drains on periphery to prevent surface run-off from entering into the quarry,
(ii) Catch drain around the dumps for avoiding siltation and
(iii) Sedimentation ponds for reducing the pollution of surface water bodies.

Garland drain /catch drain of size 2.5 mtrs X2.5 mtrs is constructed around periphery of mine for a total length of 4.00 km behind south side of D1 dump mine boundary so as to arrest silt & sediment flow from the OB dumps & mine. Water pumped out from the mine is discharged onto the surface & made to pass thorough a sedimentation pond. The clear water from the sedimentation tank is used for activities like dust suppression on haul roads & in & around CHP.

(v) Plantation

Plantation is an important tool to combat air pollution, noise pollution and to prevent soil erosion. In Plantaton on the dumps helps in preventing contamination of water and soil erosion. In addition to this it gives an aesthetic look to the area.

Adequate numbers of vegetation will be grown on the top surface and slopes of the dumps in order to arrest the erosion of soil and it also reduces surface run-off, which helps averting siltation of natural watercourses.

Catch drains of suitable size have been provided around periphery of the OB dump as well as soil dumps to arrest slide and sediment flows from the respective dump sites.Drains will be extended to the future dumpings as per PR Appendix A.8.3.

As per the Enviromental Management Plan of May 2019 the following mitigative measures have been implemented in the Bhatadi OC Project.

1. Construction of embankment along the boundary and stabilize with plantation
2. Construction of Catch Drains and Silatation Ponds of appropriate size
3. Mine Water Treatment
4. Afforestation

CONSTRUCTION OF EMBANKMENT

Drainage of the area surrounding Bhatadi OC is dominated by Erai River and its tributaries. The general elevation of the area varies between 184m and 212m from mean sea level with slope towards South-East.The HFL of Erai River, which flows from North to South at the Eastern end of the Bhatadi OC is 189m (1994). An Embankment against Erai River has been constructed. At the end of the project, as per land use patter 13.00 Ha area will be covered with Embankment. These embankmetns will be stabilized with plantation.*(Page no.76 of EMP 2019)*. This embankment against the river will be maintained in the proposed Bhatadi Expansion OC Mine and proper drainage arrangement and garland drain will be maintained around the quarry and OB dumps to carry the rain water away. Prior to onset of monsoon, the embankment should be inspected by competent person to ensure that there is no breach in embankment.

DRAINS-

For the existing project, Garland drain /catch drain of size 2.5 mtrs X2.5 mtrs is constructed around periphery of mine for a total length of 4.00 km behind south side of D1 dump mine boundary so as to arrest silt & sediment flow from the OB dumps & mine. Water pumped out from the mine is discharged onto the surface & made to pass thorough a sedimentation pond. The clear water from the sedimentation tank is used for activities like dust suppression on haul roads & in & around CHP.

MINE WATER-

Water pumped out from mine is discharged to the surface and made to pass through the mine discharge water treatment plant of dimensions 28m X 7m X 2m followed by 150m long typha plantation to improve its pH value before joining the Erai River.

Regular water quality monitoring is carried out by CMPDIL on behalf of WCL & by MPCB as per Environment Standards 2000 of MoEF.The used water from the industrial area comprising CHP, Workshop,

Garage etc. may be contaminated with grease, oil, coal dust, dirt etc. This water will be allowed to settle and suitable treatment will be carried out in oil and grease trap. Thereafter the treated water will be mostly recycled. (Page no.54 of PR 2017).

For suppression of dust, water sprinkler has been provided in the Expansion OC PR. Suppression of dust may be done by using package bond & dust bond, for methodology of application DGMS Circulr No.8 of 1997 may be referred.

AFFORESTATION-

A progressive afforestation plan implemented which includes reclaimed external OB Dumps, along Mine Lease boundaryand other areas of the mining lease by planting native species in consultation with local DFO/Agriculture department. As per latest EMP Compliance Report around 2,56,674 plantations have been carried out over the area of 85.27 Ha. Acasia, Shivan, Mango, Jamun, Teak, Bamboo,Gulmohar, Kranji, Shisoo, Behada, Neem, etc. are the species planted in these areas (As per report submitted in Oct 2024).

Budget Provisions of approved Project Report under the Environment Pollution Control Measures as per **Appendix G** of the Project is re-produced below :

Sl. No.	Particulars	Budget in Rs.
1.	Sedimentation pond for treatment of mine waste water	20,00,000
2.	Effluent treatment plant for treatment of workshop effluent	14,09,000
3	Base line environmental data generation and scientific studies related to environment	10,00,000
4	Installation of fixed type sprinklers for Dust Control	35,00,000
5	Plantation during First Three year	10,00,000
6	Digital Mapping for land use plan	8,00,000
	TOTAL	**97,09,000**

DE-SILTING OF VILLAGE TANKS &WATER BODIES

WCL has identified 04 waterbodies within the 05 Kilometer area of Mine lease boundary namely, Tirwanja Mokasa Talav, Chak Tirwanja Nallah, Warwat Talav and Masala Tukum. During the monitoring process, if any silt deposition is found it shall de-silted in consultation with State Government / Irrigation Departmnet as and when required.GPS Co ordinates of identified water bodies are as Follows

S.No	Name of Village Tank / Water Body	Latitude	Longitude
1	Tirwanja MokasaTalav	20° 3'46.82"N	79°15'23.04"E
2	Chak Tirwanja Nallah	20° 2'45.63"N	79°16'20.12"E
3	Warwat Talav	20° 3'4.27"N	79°20'14.61"E
4	Masala Tukum Talav	20° 2'47.79"N	79°19'48.91"E

A google plan showing the mining lease area of Bhatadi Expansion OC Project,5 kilometer radius area and the proposed village tanks / water bodies for de-silting is enclosed along with this plan as **Annexure -**

MONITORING ORGANISATION

To have aclose watch on the environmental condition and implementation of the various measures suggested, a multi-discuplinary approach is being followed.

WCL, has an Environment Deptt. headed by General Manager (Env.) at its HQs. The department acts as an apex body which supervises and provides necessary support that are required for environmental management of various mining projects under the jurisdiction of the company.

(a) Area General Manager of the Chandrapur area coordinates the activities of various disciplines in the area to render all necessary assistance at the implementing level i.e. Project.

(b) Area Nodal Officer (Environment) monitors all aspects of environment on behalf c General Manager. He will also take suitable steps for generation of environmental data CMPDI team for its analysis and interpretations.

(c) Project Officer is responsible for mechanical reclamartion of the area. He is also responsible for biological reclamation with the assistance of GM's office.

ORGANISATION FOR MANAGEMENT

Sl.No.	Measures / Action		AGENCY
1	Environmental Control	1	General Manager, Chandrapur Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	SAM / Project Officer, Bhatadi Sub Area
		4	Staff Officer, Civil, Chandrapur Area
		5	Environment Cell, WCL HQ
2	Environmental Monitoring	1	General Manager, Chandrapur Area
		2	Staff Officer, Civil, Chandrapur Area
		3	Area Nodal Officer (Environment), Chandrapur Area
		4	SAM / Project Officer, Bhatadi Sub Area
		5	Environment Cell, WCL HQ
3	Reclamation	1	SAM / Project Officer, Bhatadi Sub Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	Colliery Surveyor
		4	Environmental Supervisor
		5	Horticulturist

21/04/25

(Harshad Datar)
Area General Manager
Chandrapur Area

(Punam Z Dhoble)s
Sub Area Manager
Bhatadi Sub Area

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Place: Chandrapur
Date: 21-04-2025

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
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Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xii(b)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding plantation of drought hardy plant species and sowing of seeds)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *the planting of adequate drought hardy plant species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

Condition No.xii-b

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

PLAN FOR PLANTING ADEQUATE DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS TO ARREST SOIL EROSION

Generally soil erosion is less severe in forest land than in arable lands. Thecanopy cover provided by the trees and extensive tree roots are the stabilisingforces in forest plantations which keep erosion checked. Fine roots serve ascohesive binders for topsoil and where larger roots penetrate surface layers, theyanchor the topsoil to the subsoil. This is the reason why poor or other sites withlimitations are put under trees to fulfil a protective function like erosion control.

Prevention is better than cure approach is apt in low-input forest plantations and here erosion management requires proper action at the proper time. In this case, Environment Clearance obtained for Bhatadi OC Mine from the Ministry of Environment, Forest Clearenace & Climate Change vide letter no. J-11015/151/2014-IA-II(M) dated 13th March 2020 for 1.465 MTPA.

As per the Environment Management Plan preapared in May 2019, point 1.10, Plantation is considered as a major mitigative measure against Air, Water and Noise Pollution. For plantation purpose the area can be broadly divided in 4 zones.

a) Area where ornamental trees shall be provided at colony area, schools, hospitals, community buildings, around play grounds
b) Areas where different rows of trees incuding tall and fast growing varieties along with ornamental shady trees shall be provided at colony roads, haul roads, around industrial buildings, etc.
c) Areas where sturdy and fast growing variety trees will be provided at OB dumps, backfilled areas etc.
d) Avenue plantation, plantation around the quarry zone, plantation around industrial area like workshop, coal handling plant and around quarry edges shall use fast growing tall varieties of trees with rows of ornamental shady trees. The fast growing tall variety of trees like Eucalyptus will act as sound barriers, whereas ornamental shady trees will act to the aesthetic look of the area.

It is pertinent to mention that Bhatadi Opencast Mine is an ongoing project and trees have been already planted over area with native species.Afforestation has been carried out over an area of 85.27 Ha with the plantation of 2,56,675nos of drought hardy species andsowing of seeds of different specieslike Acasia, Shivan, Mango, Jamun, Teak, Bamboo,Gulmohar, Kranji, Shisoo, Behada, Neem, etc.plantation has been carried out on waste external OB dumps, road side, near offices & colony. Mine Lease boundary of this project is being maintained as gree belt.

In addition to the above,financial provision have also been made in the approved Project Report for augmentation / strengthening of existing Plantationas given below:

Sl.No.	Particulars	Capital Provision			References
		No.	Unit	Total Amount	

1	Plantation during First three year	LS	LS	10.00 Lakhs	PR Appendix – G

MONITORING ORGANISATION

To have a close watch on the environmental condition and implementation of the various measures suggested, a multi-discuplinary approach is being followed.

WCL, has an Environment Deptt. headed by General Manager (Env.) at its HQs. The department acts as an apex body which supervises and provides necessary support that are required for environmental management of various mining projects under the jurisdiction of the company.

(a) Area General Manager of the Chandrapur area coordinates the activities of various disciplines in the area to render all necessary assistance at the implementing level i.e. Project.

(b) Area Nodal Officer (Environment) monitors all aspects of environment on behalf of the Area General Manager. He will also take suitable steps for generation of environmental data along with CMPDI team for its analysis and interpretations.

(c) Project Officer is responsible for mechanical reclamartion of the area. He is also responsi biological reclamation with the assistance of GM's office.

ORGANISATION FOR MANAGEMENT

Sl.No.	Measures / Action		AGENCY
1	Environmental Control	1	General Manager, Chandrapur Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	SAM / Project Officer, Bhatadi Sub Area
		4	Staff Officer, Civil, Chandrapur Area
		5	Environment Cell, WCL HQ
2	Environmental Monitoring	1	General Manager, Chandrapur Area
		2	Staff Officer, Civil, Chandrapur Area
		3	Area Nodal Officer (Environment), Chandrapur Area
		4	SAM / Project Officer, Bhatadi Sub Area
		5	Environment Cell, WCL HQ
3	Reclamation	1	SAM / Project Officer, Bhatadi Sub Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	Colliery Surveyor
		4	Environmental Supervisor
		5	Horticulturist

(Harshad Datar)
Area General Manager
Chandrapur Area

21/04/25
(Punam Z Dhoble)s
Sub Area Manager
Bhatadi Sub Area

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Place: Chandrapur
Date: 21-04-2025

केवल नागपुर कोर्टीके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
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Fax:07172-255287, Phone: 07172-253322-25

Condition No: xii(c)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding construction of check dams, retention / toe walls)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *we shall construct check dams, retention / toe walls along the contour to arrest sliding down of the excavated material wherever required in accordance with the approved scheme* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

Conditon No.xii - c

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

SCHEME FOR CONSTRUCTION OF CHECK DAM, RETENTION WALLS / TOE WALLS TO ARREST SLIDING DOWN OF THE EXCAVATED MATERIAL

INTRODUCTION –

Bhatadi OC block forms the north-western continuity of Durgapur - Padmapur blocks of Wardha Valley coalfield, District: Chandrapur, Maharashtra. The Latitude of the area ranges from N 20°03'50" to 20°05'36" and Longitude of the area is from E 79°15'21" to 79°16'40". The area is covered in the Survey of India Toposheet No. 55 P/4 and P/8. The project is located at a distnce of 14 km from Chandrapur Railway Station.

OBJECTIVE –

To arrest the sliding down of the excavated material

THE PLAN –

The proposed Forest Land 0.20 Ha is located in the Quarry No.II of the Bhatadi OC Project. Erai Rvier is located at a distance of more than 250 meter distance. The HFL of Erai river, which flows from North to South at the Eastern end of the Bhatadi block is 189m (1994). Due to construction of dam on the upstream of Erai river by MSEB, the chances of Bhatadi block being below HFL of Erai river is remote. However, during unprecedented heavy rains of 1994 water level of Erai river touched 189m near Bhatadi village due to discharge of water through the gates of Erai dam of MAHAGENCO. An embankment with a volume of 2.00 million cubic meter is proposed for Bhatadi Opencast Project. 0.50 million cubic meter volume of OB material had been already used for embankment against Erai River till 31.03.2015. Remaining 1.00 million cubic meter embankment will be done during the course of mining at Quarry No.II.

Once the mine comes into operation, suitable places for construction of Contours, Retention Walls and Check Dams will be provided wherever it is required. Also, the sliding down of excavated material, i.e., overburden will be arrested through proper benching, plantations, mitigative measures of soil erosions, etc.

Following activities will be incorporated in this plan:

i. Erai river is flowing through Quarry-II of Bhatadi Expansion OC mine. Hence, its diversion has been proposed in the proposed PR with the financial provision of 9.757 Crore (Appendix A.8.1). Re-alignment of Erai River is envisaged in the approved Project Report with a cost of. The HFL of Erai river, which flows from North to South of the Bhatadi block is 189m (1994). A dam has been constructed by the MSEB over the Erai River, due to this the chances of Bhatadi bock being below HFL of Erai river is remote.

ii. The proposed embankment is 30m wide at the top and of height 6m above HFL. As per prevailing practice, proposed embankment has to be constructed by spreading the suitable soil i.e fine grained soil for Hearting zone and coarse-grained soil for casing zone in continuous layers and compacted by mechanical means i.e. by rollers to standard optimumdry density at optimum moisture content. Also, it has been proposed to provide 300 mm thick boulders pitchingon water side ofembankment upto HFL. However, for portion of embankment where the surface level is

higher than the HFL, no pitching has been envisaged. Provision for the same has been kept in Appendix-A.8.1. However, before adoption of this sectionit is suggested that theproposed embankment section maybe got approved by competent authority like Maharashtra Irrigation department of Govt. of Maharashtra and DGMS for its structural safety and stability. The alignment of the proposed embankment is shown in Quarry Layout Plan. It is also suggested to determine withdrawal level/Danger mark, so that as water level crosses the limit, workings shall be stopped.

iii. This embankment against the river will be maintained in the Bhatadi Expansion OC mine. Prior to onset of monsoon, the embankment will be inspected by competent person to ensure that there is no breach in embankment.

iv. Suitable alarms connected to float in Erai river would be provided at strategic places like Time Keeper Office, Security Office, Safety Office, Manager Residence, Pit Office etc. The floats in the river would activate the alarms as soon as the water level in the river crosses the danger mark. Suitable action can then be taken to investigate the alarm and take other suitable precautions. In addition, river side patrolling would also be carried out during monsoon to caution the project authority in case of any sudden rise in the river. Adequate wireless communication sets have been provided for the above purpose.

v. The rain water falling within the project area would be diverted from the quarry area by providing garland drains and shall be collected towards low lying area.Provisions of garland drains of size (approx. width 2.5m & height 2.5m) around mine quarry has been given.

vi. Catch drain around the dumps for avoiding siltation

vii. For the protection of excavated material sliding down, step dumping procedure will be followed.

viii. The maximum height of OB dump proposed above ground level is 90 m.The maximum overall slope of the OB dump would be about 28°.The individual dump bench would be 30 m height and there will be two such benches in the OB dump with a berm of 30 m width in between the two benches. Each individual bench of 30 m height will be made in two tier of 15 m height with a berm of 6 m between these two layers.

ix. Before dumping, place of dumping should be made free from loose material.

x. After completion of dumping operations, dumps will be stabilized by growing vegetation.

In addition to the above,financial provision have also been made in the approved Project Report in the Mine Development activies as follows:

Appendix A.8.1

Sl.No.	Particulars	Additional Capital
1	Re-alignment of Erai- river (1.1km) (Assumed bottom width 50m, Height 10 m including Service Tax)	97575000
2	Embankment pitching cost along river side	7815000
3	Miscellaneous	10000000
	TOTAL	**115390000**

MONITORING ORGANISATION

To have a close watch on the environmental condition and implementation of the various measures suggested, a multi-discuplinary approach is being followed.

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(a) Area General Manager of the Chandrapur area coordinates the activities of various disciplines in the area to render all necessary assistance at the implementing level i.e. Project.

(b) Area Nodal Officer (Environment) monitors all aspects of environment on behalf of the Area General Manager. He will also take suitable steps for generation of environmental data along with CMPDI team for its analysis and interpretations.

(c) Project Officer is responsible for mechanical reclamartion of the area. He is also responsible for biological reclamation with the assistance of GM's office.

ORGANISATION FOR MANAGEMENT

Sl.No.	Measures / Action		AGENCY
1	Environmental Control	1	General Manager, Chandrapur Area
		2	Area Nodal Officer (Environment), Chandrapur
		3	SAM / Project Officer, Bhatadi Sub Area
		4	Staff Officer, Civil, Chandrapur Area
		5	Environment Cell, WCL HQ
2	Environmental Monitoring	1	General Manager, Chandrapur Area
		2	Staff Officer, Civil, Chandrapur Area
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3	Reclamation	1	SAM / Project Officer, Bhatadi Sub Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	Colliery Surveyor
		4	Environmental Supervisor
		5	Horticulturist

21/04/25

(Harshad Datar)
Area General Manager
Chandrapur Area

(Punam Z Dhoble)
Sub Area Manager
Bhatadi Sub Area

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Place: Chandrapur
Date: 21-04-2025

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी
(A Miniratna Company)
(A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

15 YEARS OF CELEBRATING THE MAHARATNA

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xii(d)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding stabilization of overburden dumps)

On behalf of M/s Western Coalfields Limited, Chandrapur Area, we undertake *to stabilize the overburden dumps by appropriate grading / benching in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28°* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

Conditon No.xii - d

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC MINE

PLAN TO STABILIZE THE OVERBURDEN DUMPS BY APPROPRIATE GRADING / BENCHING TO ENSURE THAT ANGLES OF REPOSE AT ANY GIVEN PLACE IS LESS THAN 28°

In the proposed Bhatadi Expansion OC Mine, total volume of OB works out to 80.49MM^3 Planning of the proposed mine has been done to ensure maximum internal dumping so that external dumping could be minimized as far as possible. This quantity of OB material is proposed to be accommodated in External Dump D1 (31.44 Mm3), Embankment (1.00 mm3) and Internal void of Quarry-I (48.05 Mm3).

SLOPE STABILITY

As per the approved proejct report following actions are proposed to maintain slope stability.

i) Vulnerable area may be identified and marked on quarry plan.
ii) Observation of actual alignment of fault, its throw, joints, etc. may be recorded during the process of exploitation.
iii) Water drainage system may be properly implemented to prevent accumulation of water in cracks. Also dumps shall be leveled to prevent accumulation of water over it. Proper drainage in dumps shall also be provided to prevent erosion of toe of dump.
iv) Regular monitoring of tension cracks, horizontal and vertical movement of strata in critical area may be done.
v) Rise side slope to be reinforced if required because it has to stand throughout quarry life. No dumps/surface structures to be located within 15m of quarry edge as it will act as surcharge there by destabilizing the slope.
vi) No undercutting of slopes to be done.
vii) Proper hydrogeological studies to be done and if water table is at level of slope it should be brought down by using submersible pumps to prevent hydrostatic pressure.
viii) Proper selection of site for dumping to be done before dumping place shall be made free from loose material. Dumping shall not be done at an angle more than angle of repose of material being dumped. The angles of repose at any given place will be maintained as less than 28□ only.
ix) After completion of dumping operations dumps to be stabilized by growing vegetation.
x) Every person deployed by leaser of HEMM must be trained & briefed about aspects related to slope stability.

Scientific Study by IIT-Kharagpur on Slope Stability at Bhatadi OC Project

A Slope Stability Study had been conducted by the IIT – Kharagpur in the year 2019 vide Work Order no. WCL/CHA/AGM/ASO/19/840 dated 08/09th June 2019. The study is related to the compliance of Coal Mine Rules 2017, Reg. 106 (2) Method of working, ultismate pit slope, du p slope and monitoring slope stability at Bhatadi OCM of Chandrapur Area, WCL.Copy of the Work Order enclosed along with this plan.

As per the scientific study several conclusions and recommendations have been made by the expert team of IIT– Kharagpur as follows:

a) The external dumps can be heightened up to 90m height and internal dump up to 180m height, maintaining the suggested design parameters. The external dump slope configuration shall have 30 m individual bench height and 20 m bench width. This provides sufficient space for plantation. It is recommended that simultaneous revegetation of dump slope should be carried out wherever possible.

b) The distance of the toe of the dump from the coal edge should be at least 100 meters.

c) The dump should be regularly inspected for physical indicators viz. tension cracks, slope bulging, floor heaving, boulder movement etc along with any of the suggested slope monitoring scheme.

d) Further, all measures should be taken to prevent accumulation of water in the dumps so that pore water pressure does not induce significant forces on the slopes. Sufficient precautionary measures to be taken for preventing soil erosion on the slope of the dumps.

e) Proper channeling of water from dump stack should be done and water should be treated before discharging into local water bodies.

f) Special precautionary measures might be taken to keep all the slopes stable. This may include
   i) continuous monitoring of the slope surface
   ii) possible flattening of the slopes
   iii) reducing seismic loading by control blasting, avoidance of heavy vehicle movement etc.
   iv) measures for preventing water accumulation in the dumps.

g) Further, after reviewing the DGMS Circular, IIT-Kharagpur team suggested the following:
   i) The mine authority should have a proper recording of the distance (i.e., displacement) measurements vis-a-vis the occurrences of any (major or minor) deformations/failures of the slope surfaces. These records need to be analysed for understanding the threshold values which may be used as inputs for the next level of analyses.
   ii) These data would definitely help in timely withdrawal of man and machinery from the working face or from its vicinity, where imminent deformation(s) may be estimated.

Budget provisions to stabilize the Over Burden dumping and other scientific studies in the approved Project Report is as follows.

Sl.No.	Particulars	Capital Provision			References
		No.	Unit	Total Amount	
1	Plantation during First Three years	LS	LS	10.00 Lakhs	Appendix –G
2	Slope Stability Studies	LS	LS	37.50 Lakhs	Appendix –A.8.5
3	Other Scientific Studies	LS		25.00 Lakhs	Appendix –A.8.5

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Area General Manager
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Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Place: Chandrapur
Date: 21-04-2025

WESTERN COALFIELDS LIMITED
Empowering India
Coal India
Nurturing Nature
BHATADI OPENCAST MINE

Project No. : IIT/SRIC/MI/SWPS/2019-20/038

SCIENTIFIC STUDY RELATED TO METHOD OF WORKING, ULTIMATE PIT SLOPE & DUMP SLOPE AT BHATADI, WCL

Sponsored by

WCL, COAL INDIA LIMITED

Consultant-in-charge

Prof. Debashish Chakravarty
Prof. Biswajit Samanta
Prof. Kaushik Dey

02 set

Department of Mining Engineering
Indian Institute of Technology Kharagpur
Kharagpur-721302, India

January 2020

Project No.: IIT/SRIC/MI/SWPS/2019-20/038

SCIENTIFIC STUDY RELATED TO METHOD OF WORKING, ULTIMATE PIT SLOPE & DUMP SLOPE AT BHATADI, WCL

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Department of Mining Engineering
Indian Institute of Technology, Kharagpur

January 2020

DISCLAIMER

It is appropriate to mention here that neither the day-to-day mining operations would be under the control of the authors of this report, nor it is possible to have any such control on the execution of the recommendations mentioned in this report. The authors of this report would in no way be held responsible for any untoward incident, which might occur due to the implementation of the recommendations of this report. This report merely contains analysis of dump slope and pit slope stability estimated using the theoretically established approach. Some essential geo-technical properties supplied by mine authority are used for numerical analysis of stability analysis. The factor of safety values for different slopes are calculated based on these parameters. The uncertainty in these parameters may significantly change the safety factor. Time to time testing of geotechnical properties and modification in the analysis is required. The method of mining, machinery and the other involved unit operations for field execution have been based on the information provided by the mine owner. The ultimate pit stability analysis has been done based on the information provided by the mine authority

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1.0 Introduction

The present geotechnical engineering report for study of the slope stability of the different structures consisting of pit and dump slopes is carried out by Department of Mining Engineering, IIT Kharagpur. This report analyses the slope stability of the selected critical profiles of mining / pit benches, and OB dumps (in consultation with the mine authorities). The IIT KGP study team went for a detailed field visit and overall site reconnaissance purpose in the month of July 2019, where the locations and approximate structural details of important structures were reviewed.

2.0 Brief about the project site

Bhatadi expansion block is the N-W continuity of Durgapur-Padmapur block in Chandrapur area, WCL and is separated from Padmapur block by Erai river. The project is connected from Chandrapur-Nagpur highway by PWD road about 12km via Tirwanja village. The total distance of the project from Chandrapur town via SI 1-84 is about 20km. The project has been connected by a temporary road from Padmapur at a distance of about 6 km and by permanent road from Padoli / Chandrapur. Bhatadi block can be approached from Chandrapur town via Chandrapur. Tadoba road for part of the way. However, for approaching the block, a stretch of 5 Km of kutcha road has to be negotiated across Erai river. This approach is however not during the monsoon. To make this approach all-weather, it is proposed to construct permanent road and bridge over Erai river in the PR of Bhatadi Expansion OC. The block can also be approached from Nagpur-Chandrapur road party by metalled and party by unmetalled road upto Tirwanja village. The distance by this road is about 10 km upto Tirwanja village. At present this is the all-weather approach to Bhatadi block. The nearest rail head is Tadali about 8 to 9 km from the block and Chandrapur Station is about 14 km from the block. Both the stations are on the main line of Central Railway.

Bhatadi OC block forms the north-western continuity of Durgapur-Padmapur blocks of Wardha Valley coalfield, District: Chandrapur, Maharashtra The Latitude of the area ranges from N $20^0$03'50" to $20^0$05'36"and Longitude of the area is from E $79^0$15'21" to $79^0$16'40". The area is covered in the Survey of India Toposheet No.55P/4 and P/8.

3.0 Background of project site

With the ever increasing demand of coal, there is a deficit in supply of coal from the mines of WCL and therefore a ready market exists for the coal produced from proposed Bhatadi Expansion OC mine. Presently coal of Bhatadi Expansion (0.65 Mty) is being supplied to MAHAGENCO on 'cost plus' basis. Bhatadi Opencast block is drained by Erai and its tributaries. The general elevation of the area varies between 184m and 212m from mean sea level with slope towards South-East.

The HFL of Erai river, which flows from North to south at the Eastern end of the Bhatadi block is 189m (1994). Due to construction of dam on the upstream of Erai river by MSEB, the chances of Bhatadi block being below HFL of Erai river is remote. However, during unprecedented heavy rains of 1994 water level of Erai river touched 189m near Bhatadi village due to discharge of water through the gates of Erai dam of MAHAGENCO. An embankment has been proposed against Erai river. The climate of the area is tropical with maximum temperature of 48^0C recorded during summer and minimum temperature of 8°C during winter. The average rainfall is 1350 mm.

4.0 Brief history of different Reports/scheme prepared for Bhatadi OCP

The potentiality of coal in Bhatadi block, which is north-western continuity of Durgapur-Padmapur of block, was, established by the Directorate of Geology and Mines, Government of Maharashtra (DGM, MS). The data generated by DGM, MS was documented by CMPDI, RI-IV in two geological reports (July 1983 and December, 1984). Based on these reports, Project Report for Bhatadi OC Mine (capacity 0.25 Mty) was prepared by CMPDI in March,1988 for total initial capital of Rs.1702.48 lakhs and was approved by WCL Board in. December,1988. Excavation work in Bhatadi OCP was started, in 1995. Geological report on Exploration for coal in Bhatadi Opencast Block prepared by MECL was submitted to CMPDI in March' 97. Subsequently, RCE (Revised Cost Estimates) for Bhatadi OC Mine was prepared by CMPDI in March'97 for total estimated capital of Rs.1993.77 lakhs and it was approved by WCL Board in the 142nd meeting held on 17.4.97. RCE of Bhatadi Opencast Project had taken into consideration the re-interpreted relevant geological parameters as per the Geological Report on Exploration for coal in Bhatadi (OC) block, March,1997.

Project Report for Bhatadi Expansion OC was prepared by CMPDI in June,1998 for a capacity of 0.65 Mty with a capital investment of Rs. 94.806 crores. This Expansion Project report proposed to

exploit 20.59 Mt (including balance reserves of existing Bhatadi OCP as on 01.04.98) of mineable reserves up to maximum depth of 150 m at an average stripping ratio of 5.29 m^3/t. This Project Report was approved by WCL Board in its 149th meeting held on 11.07.1998 subject to commercially viable agreement to pay the negotiated price being entered into, as the Project was not yielding requisite IRR (16%) at 85% capacity utilization. The project was offered to MSEB for coal supply agreement on cost plus price basis. As the negotiations for Coal Supply Agreement with MSEB got delayed and in the meantime Bhatadi OC mine reached up to approved RCE limit, WCL prepared a scheme to exploit 3.88 Mt of reserves at a stripping, Ratio of 4.70 m^3/t with a production target of 0.50 Mty without diverting existing 220 kv HT line. This Scheme was approved by WCL Board in its 168th meeting, held on 28.12.2001, for a capital outlay of Rs. 6.128 crores' The proposed capital expenditure was mainly for acquisition of extra land required for the scheme. A meeting was held on 24.12.2005 between WCL & MSEB to finalise the coal supply Agreement' In this meeting, it was decided to update the Project Report for Bhatadi Expansion OC Mine as on December, 2005 considering the latest scenario of existing mine, to arrive at realistic base price of coal.

After detailed deliberation between M/s. MAHAGENCO and M/s. WCL, the agreement for supply of coal at agreed price was formally signed on 18.4.07. The base price of coal was fixed as Rs.1275/t as on December, 2005. The Escalation Formula was kept similar to Kolgaon OC agreement. This Project Report was again updated as on April,2007 for putting up in the ensuing Board of WCL for approval, as the agreement with customer to supply coal at agreed price was finalized. The total proposed capital for this project escalated to Rs.123.7862 crores including existing capital of Rs. 24.1027 crores. The project was yielding an IRR of 12.08% at 85% capacity utilization. The price to yield 12% IRR at 85% capacity utilization worked out to Rs.1354.75/t. The Escalated agreed selling price by M/s. MAHAGENGO as on April, 2007 worked out to Rs.1356.11/t as per approved escalation formula which gives an IRR of 12.08% at 85% capacity utilization.

5.0 Method of mining

a. Geo Mining Parameters

Details of Geological Reports prepared for Bhatadi Block at different period are as under: -

1. Interim GR on Bhatadi Block, Wardha valley Coalfield, Distt. Chandrapur, (M. S). July 1983, by CMPDI.
2. Geological Note on Quarriable Potential of Southern Part of Bhatadi Block, Wardha Valley Coalfield, Distt. Chandrapur, (M.S). Dec. 1984, by CMPDl.

3. Geological Report on Exploration for Coal, Bhatadi OC Block, Wardha Valley Coalfield, Distt. Chandrapur, (M.S). Mar. 1997; by MECL.
4. Geological Report on Exploration for Coil, Bhatadi Expansion OC Block, Wardha Valley Coalfield, Distt. Chandrapur, (M.S). Aug. 1998, by MECL.
5. Geological Report on Exploration for Coal, Bhatadi Expansion OC Block, Wardha Valley Coalfield, Distt. Chandrapur, (M.S). Aug.1998, by MECL.
6. Geological Report for P. R. of Bhatadi Expansion OC Block, Wardha Valley Coalfield, Distt. Chandrapur, (M.S). Aug' 1998, by CMPDI

The proposed Bhatadi block is having an area of 2.10 sq.km. The geological block boundaries of the proposed block are as given below:

North: Dip Side boundary fault F3-F3, F5, F5
East: Padmapur OC Block.
South: Sub-crop of Composite Seam, fault F1-F1, fault F3-F3
West: Arbitary block boundary

Total 51 boreholes fall in Bhatadi OC block (MECL G.R. area) admeasuring about 2.10 sq.km. The density of boreholes, therefore is about 24 B.H/sq.km.

Strike & Dip

The strike of the coal seam as determined from the floor contour plan is, almost NW-SE with local undulations and dipping north easterly. The dip varies from 8^0 to 11^0 northerly. The gradient of the seam normally varies from 1 in 5 to 1 in 7.

Faults

The proposed block area has been traversed by strike faults extending from North- West to South-East direction. In Quarry-I, Fault F1-Fl' extending from NW to SE forms the south west boundary of the block. Fault F3-F3' extends from NW dip side area to SE rise side area and bifurcates the two quarries i.e., Quarry- I & II. Fault F8-F8' is located in dip side of Quarry-ll. Fault F14-F14' is also a strike fault which passes through the property of Quarry-II. In addition to these faults minor faults exist in the proposed block.

Description of Coal Seam

There is one Composite Coal Seam in the block. The seam does not outcrop in the block because of overlapping Kamthi formation. The composite seam thickness varies from 15.78 m (MWBT-31) to 20.83(MWBT-26). The composite seam is inter-banded with shale and carbonaceous shale. The upper

2-4 m of the seam predominantly composed of shale and carb shale bands inferior in quality and not considered for reserve estimation. All the carbonaceous shale bands having more than 1.0 m thickness are excluded for computation of effective thickness of the seam. The shale bands (Ash + Moisture > 75%) upto 0.15 m thickness only are excluded for the effective thickness calculation. The effective thickness varies from 15.72 m (B-37) to 19.99 (B-46) & 15.30 m (MWBT-26) for Quarry-I & Quarry-II respectively.

The weighted average quality of the seam for individual quarry I & II are as follows:

Particulars	Quarry-I	Quarry-II	Total
Moisture	8.02	7.96	7.99
Ash%	28.07	30.75	29.57
G.C.V(kCal/Kg)	4757	4503	4610

During mining it is presumed that there will be 5% grade deterioration an accordingly GCV would be as follows:

Particulars	Quarry-I	Quarry-II	Overall
G.C.V(kCal/Kg)	4614	4406	4504(G-10)

b. Mining Parameters

The existing Bhatadi Expansion OC mine has been divided into two quarries namely, Quarry-I and Quarry-II. At present Quarry-I is being worked since 1995-96. The geo-mining parameters of the proposed quarry are as follows:

Sl. No.	Particulars	Quarry-I	Quarry-II	Total
1	Area of the Quarry			
a)	On floor (Ha.)	50.87	33.875	84.745
b)	On surface (Ha.)	88.92	72.60	161.52
2	Depth (m)			
a)	Initial	33	53	
b)	Final	150	150	
3	Average gradient of Seam	1 in 6	1 in 6	
4	Average thickness of seam (m)	17	17	
5	Average Strike length (m)	800	700	
6	Width on surface (m) (Dip Rise)	700	850	
7	Width on floor (m) (Dip Rise)	500	600	
8	GCV (k Cal/kg)(Overall)	4504 (G-10)		
9	Balance Mineable reserves (Mt) as on 1.4.2015	5.14	9.27	14.41
10	Total OB including Access Trench (Mm3)	29.42	51.07	80.49
11	Average S.R.m^3/t.	5.72	5.51	5.59

c. Choice of Technology

The shovel dumper system of technology is being practised in Bhatadi Expansion OC and therefore the same has been envisaged in this updated PR. As the balance mineable reserves are only 14.41 Mt and the gradient of seam is steep, application of dragline and surface miner would not prove to be effective and economical. Hence Shovel-Dumper system being very flexible and most adopted system in WCL has been proposed,

It is envisaged in partial Hiring Option of the PR, that entire coal extraction (14.41Mt) and part OB removal (53.952 Mm^3) will be done by departmental HEMM with the existing departmental capacity and balance OB (26.536 Mm^3) will be removed by outsourcing of HEMM. The existing 35T and 50 T dumpers are proposed to be replaced by 60 T dumpers. 1.5 m^3 hydraulic backhoe are proposed to be replaced by 4.0-5.0 m^3 diesel hydraulic backhoe.

d. Mining System Parameters

Width and Height of Benches

For Coal and Overburden, keeping the bench height of 10 m, the width of working and non-working benches are kept as 30 m and 20 m respectively. However, the actual bench width and height in OB would depend upon the size of equipment deployed by the hiring/outsourcing agency in Partial hiring option. Haul road would be constructed on the floor of the quarry at a gradient of 1 in 16 with a width sufficient for dumper movement, dozer path, drainage and electrification etc.

Slope of Benches & Quarry

i) **During Mining Operation**

The slope of individual benches depends on the type of strata. In this report, the slope of individual bench is proposed as 45^0 in soil, alluvium and clay whereas, it is 70^0 in hard strata. The overall slope of the quarry in rise side is about 37^0 whereas the overall slope of the quarry in dip side during mining operation varies from 20^0 to 22^0 from horizontal plane depending on the nature of strata in the entire depth of quarry.

ii) **At the End of Quarry**

The slope of individual benches in the batter at the end of quarry remains same as that during mining operation i.e. 45^0 in soil, alluvium and clay and 70^0 in hard strata. overall angle of batter considered at the end of quarry is about 40^0 for the dip side batter and about 37^0 in rise side batter. However, it was also proposed in the DPR to do scientific study for

slope stability in quarry benches and OB dumps by any Scientific Agency. This report is basically meant for the same.

Two quarries have been proposed in Bhatadi Expansion OC mine Considering the practical difficulties in river diversion & village shifting, it is proposed to for work Quairy-I. Quarry No. II would be worked after Quarry-I exhausted. Separate access trench has also been proposed for Quarry-II. However, if Bhatadi village is shifted in time, no separate access trench would be required for quarry and entry can be made from Quarry-I.

Volume Regime

The quarry-wise coal, OB and stripping ratio in Bhatadi Expansion OC mine as on 01.04.2015 is given in following table:

Quarry	Coal (Mt)	OB (Mm^3)	S.R.(m^3/t)
Quarry-I	5.14	29.42	5.72
Quarry-I	9.27	51.07	5.51
Total	14.41	80.49	5.59

Dumping Strategy

As per the approved PR of Bhatadi Expansion OC (April, 2007) the total balance OB was assessed as 101.83 Mm^3. 12.86 Mm^3 OB had already been removed and dumped from 1995-96 to 2005-06. Thus total OB dump capacity in the mine was for 114.69 Mm^3 as tabulated below:

Dump capacity as per approved PR (April, 2O07)

Sl.No	Dump	Dump volume (Mm^3)
1	External Dump	59.44
2	Embankment against Erai river	1.50
3	Internal Dump in the void of Quarry-I	53.75
	Total (External + Internal)	114.69

Existing & proposed OB Dump Capacity

The total dump capacity as per the Approved PR of April, 2007 was 114.69 Mm^3.The total OB removed from the existing Bhatadi Expansion OC mine upto 31.03.2015 is 34.20 Mm^3 which has

been dumped in External Dump D1 (28 Mm^3), External Dump DZ (4.10 Mm^3), Embankment (0.50 Mm^3) and in the Void of Quarry-I (1.60 Mm^3).

Mining Schedule & Equipment Phasing Design Criteria

The Project Report of Bhatadi Expansion OC mine has envisaged 330 days of working in a year based on 7 days schedule of mine working. As per the prevalent practice in WCL, there will be 3 working shifts in a day and each shift will be of 8 hours duration. The excavation category of OB material has been assumed as 50 % Category – III + 50 % Category-IV, whereas, for coal it is assumed as Category-IV. The in-situ volume weight of OB material has been considered as 2.5 t/m^3 whereas for coal it is taken as 1.60 t/m^3.

5.0 Objectives

The study focuses on the following two areas: (i) stability analysis of mine pit slopes, and (ii) stability analysis of dump slopes. On this basis, the following specific objectives are defined for this study:

a) Analysis of the mine pit slopes for selected critical sections in consultation with the mine authorities.

b) Analysis of dump on selected dump profiles, selected with the help of mine authorities.

c) Analysis of ultimate pit slopes, based on available data

d) Monitoring scheme for slope stability

6.0 Scope of Work

a) Field visit: A three-member study team of the IIT Kharagpur made a visit to the mine in the month of July 2019 to comprehend the different aspects pertaining to this study. Other purpose of this visit was also to physically understand the extent, geographical location, geometry, mine boundaries of the site, and selection of the critical profiles for the study.

b) Data collection: Information and data in the forms of maps, proposed plan of mining, geo-technical investigation reports of earlier studies were collected from the mine. Some of the pertinent information were used for numerical modelling and stability analysis.

c) Numerical Modeling for stability study of different mining structures: The physical model of the pit slopes, and internal dump slopes etc. are replicated as numerical models in the computer and 'Geoslope' software tool was used for the stability analysis of the structures using the available geotechnical data from the mine site.

d) Technical suggestions on the practice of mining.

7.0 Theoretical background for slope stability assessment

Morgenstern-Price method (developed on basis of limit equilibrium) is used for kinematic assessment of stability for each of the proposed pits and dumps in the study area. This method of stability assessment considers both the shear and normal inter-slice forces between the blocks. It also satisfies both moment and force equilibrium, and allows for a variety of user-selected inter-slice force function. This approach has been used in the dumps for dry and saturated geo-technical conditions when they are subject to seismic and wind loading along with pore water pressure.

Morgenstern-Price Analysis

Morgenstern-Price is a general method of slices developed on the basis of limit equilibrium. It requires satisfying equilibrium of forces and moments acting on individual blocks. The blocks are created by dividing the soil above the slip surface by dividing planes. Forces acting on individual blocks are displayed in Figure 1.

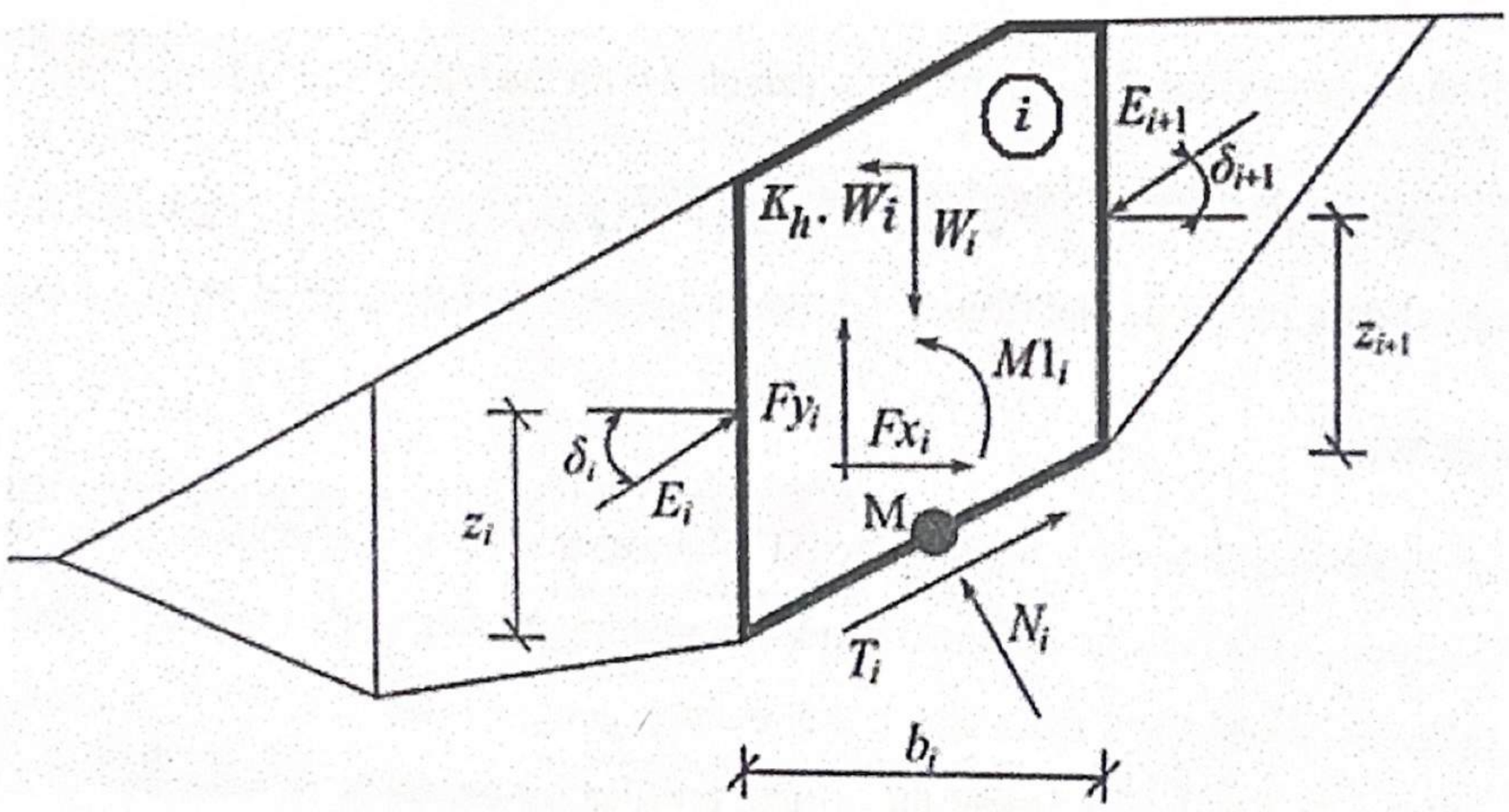

Figure 1 Static scheme: Morgenstern-Price Analysis

Each block is assumed to contribute due to the same forces as in Spencer method. Choice of inclination angles δi of forces Ei acting between the blocks is realized with the help of Half-sine function (Figure 2). This choice of the shape of function has a minor influence on final results, but suitable choice can improve the convergence of method. Functional value of Half-sine function f(xi) at boundary point xi multiplied by parameter λ results the value of inclination angle δi.

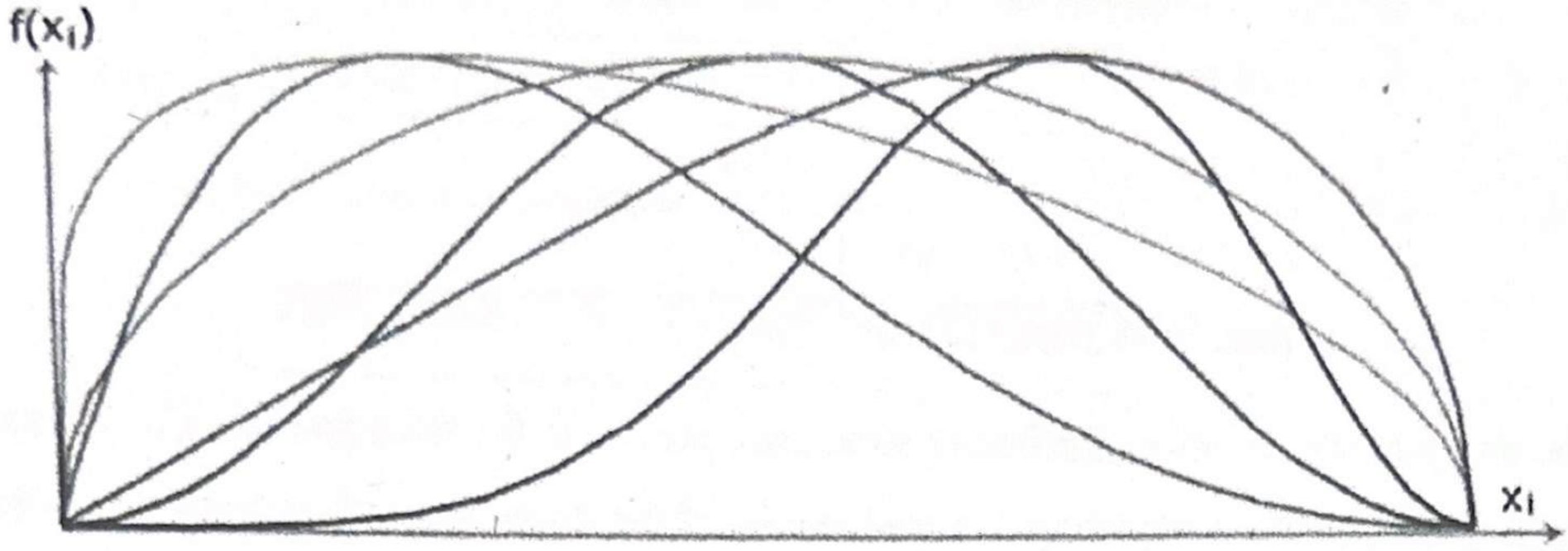

Figure 2 The Half-Sine Function

$$Z_{i+1} = \frac{\frac{bi}{2}[E_{i+1}\,(sin\,\delta_{i+1} - \cos\delta_{i+1}.\tan\alpha_i) + E_i\,(sin\,\delta_i - cos\,\delta_i\,.\tan\alpha_i) + E_i.Z_i.\cos\delta_i - M1_i + K_h.W_i.(y_M - y_{gi})}{E_{i+1}.cos\delta_{i+1}} \quad (1)$$

This formula allows to calculate all arms Zi of forces acting between blocks for a given values of δi, knowing the value on the left at the slip surface origin, where $z_1 = 0$.

The factor of safety SF is determined by employing the following iteration process:

a) The initial value of angles δ_i is set according to Half-sine function ($\delta_i = \lambda * f(x_i)$).

b) The factor of safety SF for a given value of δ_i, while assuming the value of $E_{n+1} = 0$ at the end of the slip surface.

c) The value of δ_i is provided by equation (1) using the values of E_i determined in the previous step with the requirement of having the moment on the last block equal to zero. Functional values $f(x_i)$ are same all the time during the iteration, only parameter λ is iterated. Equation (1) does not provide the value of z_{n+1} as it is equal to zero.

Steps b and c are then repeated until the value of δ_i (resp. parameter λ) does not change.

8.0 Stability assessment of Structures in the Mine

Two different types of structures are analyzed in this study. These include: (1) existing pit slopes of the open pit mine, and (2) internal dump slopes. Table 1 provides the information about the different structures studied in this investigation. Due to non-availability of detailed geotechnical parameters these are assumed in the study. Different material properties of concern are primarily the properties that characterize the shear strength and the density (unit weight) of the different formations that make up the combined slope structures and the intervening ground.

Table 1: Details of mining structures analyzed

Sl No	Number of sections analyzed
Pit slopes	Three
Internal Dump Slope	Two
External Dump Slope	Two

This section analyses the stability of different structures, present in the mine site using Morgenstern Price Method. This LEM based technique is used in each of the slopes for predicting Factor of Safety of the slopes for different geotechnical conditions. Geotechnical properties of the material present on different structures are taken from the earlier investigative study reports provided by the mine authority. The different loading conditions studied in this slope stability assessment are described below. Each of the loading conditions are further subject to wind load as described below.

a) **Static (dry) condition:** In completely dry conditions, the slopes are assumed to be in completely dry conditions. The materials of the slope are assumed to be fully dry. In these conditions, the pore water pressure present in the slope is zero.
b) **Static (dry) condition with seismic loading:** Here, the dry slope is subject to seismic loading. Here, seismic loading coefficient is considered to be 0.1g for the horizontal stress loading, and the vertical loading is considered to be zero.
c) **Saturated condition:** Here, the slopes are subject to fully saturated conditions where water table is assumed to be up to the height of the slope. No drainage system is considered and the materials of the slope are considered to be undrained.
d) **Rain and wind loading:** In this analysis, the slope is subjected to loading due to rainfall and wind. This is one of the possible worst case scenarios in assessment of slope stability, where the slope is loaded with heavy rainfall and is also subject to wind loading.
e) **Cloud burst condition:** In this analysis, the slope is subjected to loading due to extremely heavy and sudden rainfall for a relatively short period of time.

8.1 Assumptions for Morgenstern–Price method of slope stability assessment

The following are assumptions in the Morgenstern-Price method to calculate the limit equilibrium of forces and moment on individual blocks:

- Dividing planes between blocks are always vertical.

- The line of action of weight of block W_i passes through the center of the i^{th} segment of slip surface represented by point M.
- The normal force N_i is acting in the center of the i^{th} segment of slip surface, at point M.
- Inclination of forces E_i acting between blocks is different on each block (δ_i) at slip surface end points is $\delta = 0$.

8.2 Analysis of Pit slopes

In this section, the outputs of numerical analysis of two existing critical pit slope sections of the open pit mine are presented. The numerical models for all these profiles / sections have been analysed under five different conditions as mentioned earlier. At first, static loading (only dry static loading condition) is imparted to the model. This is followed by the analysis of the slopes under fully saturated (wet) condition. Following which, the model is run on additional loading due to wind and rainfall conditions along with static loading. The average wind speed values are taken in the range of 10-15 m/s and that of average rainfall values in the range of 5-12 mm/h for 24 hours. Additionally, the model is also run under cloud burst condition. Here, to simulate the cloud burst condition, the rainfall value is taken as 100 mm/h for a period of 30 minutes. Finally, the model is run under seismic loading due to blasting where the maximum Peak Particle Velocity (PPV) is taken as 80 mm/sec. The conventional LEM based Morgenstern-Price method has been used to determine FOS of the slopes to obtain different critical slip surfaces.

8.2.1 Numerical Modelling for pit slope Stability Analysis

There are two critical sections identified by study team members after discussions with the mine authority. These sections are referred here as A-A` and B-B` sections. The profiles of these sections are analyzed using the numerical modeling approach for the determination of the factor of safety (FOS) values. The pit slope sections mostly intercept the soil as a top layer (top soil), shaly sandstone, sandstone and coal layers in succession. The following material properties (obtained from the mine authorities) as shown in Table 2 are used for numerical analyses.

Table 2 Material properties used for numerical modelling

Material Type	Unit weight (kN)	Cohesion (kPa)	Internal Friction Angle (degree)
Soil	18.6	42	9.2
Shaly Sandstone	27	280	31
Sandstone	24	200	26
Coal	14	18	24

Analyses of section A-A`

Figures 3 and 4 present the pit slope section of A-A` and the corresponding model geometry for numerical analysis using Geo Studio software tool, respectively. The resulting failure surface and the corresponding FOS value for each of the above conditions are presented in Figures 5(a) to 5(e) and Table 3, respectively.

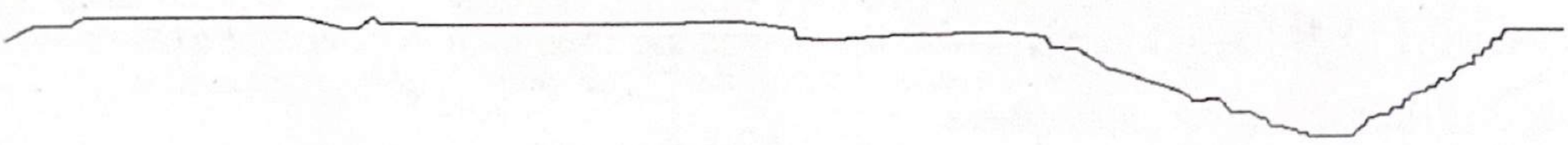

Figure 3: Pit cross-section of A-A`

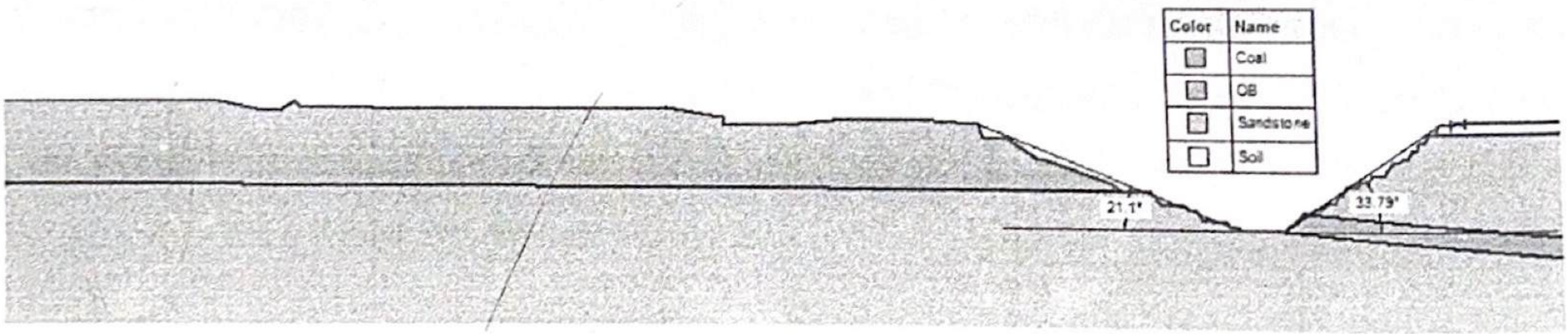

Figure 4: Model Geometry of A-A`

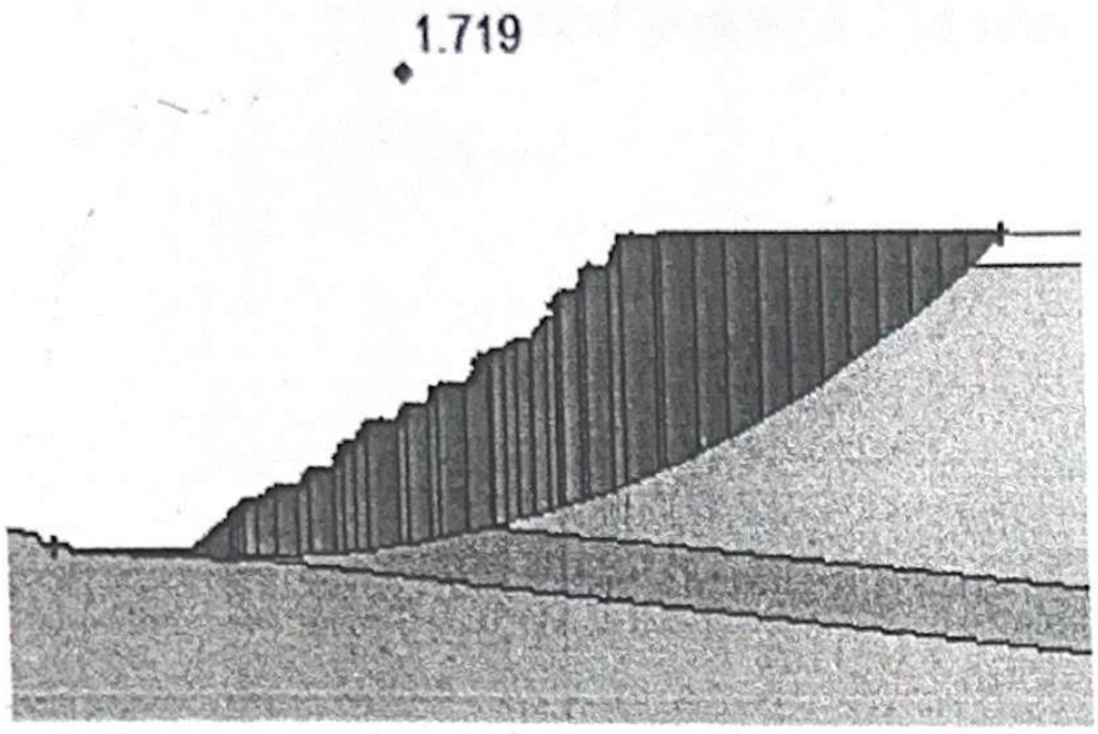

Figure 5(a): Critical slip surface,
(Dry condition)

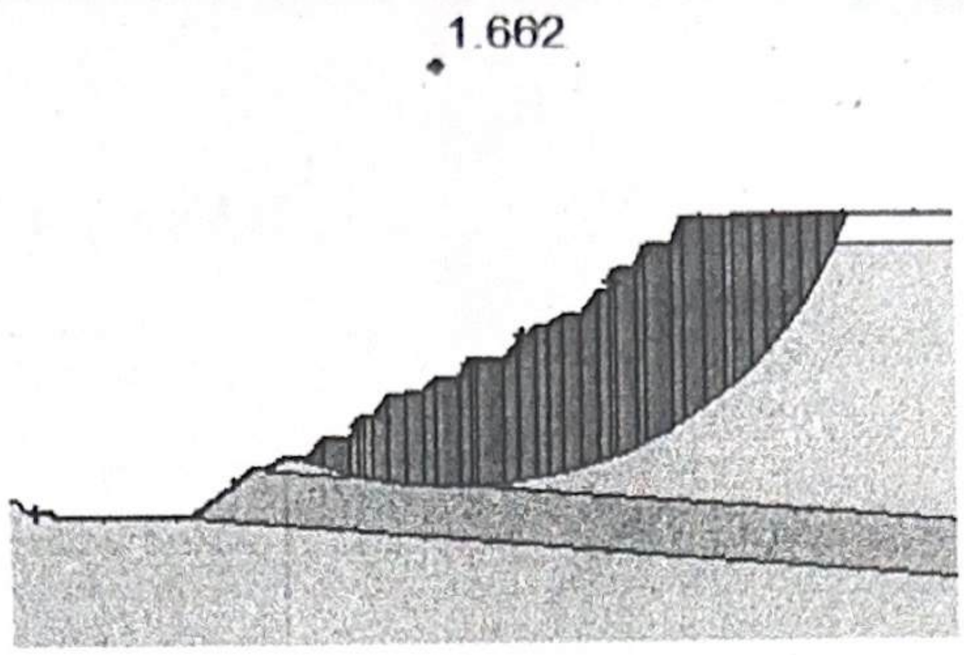

Figure 5(b): Critical slip surface, (Saturated condition)

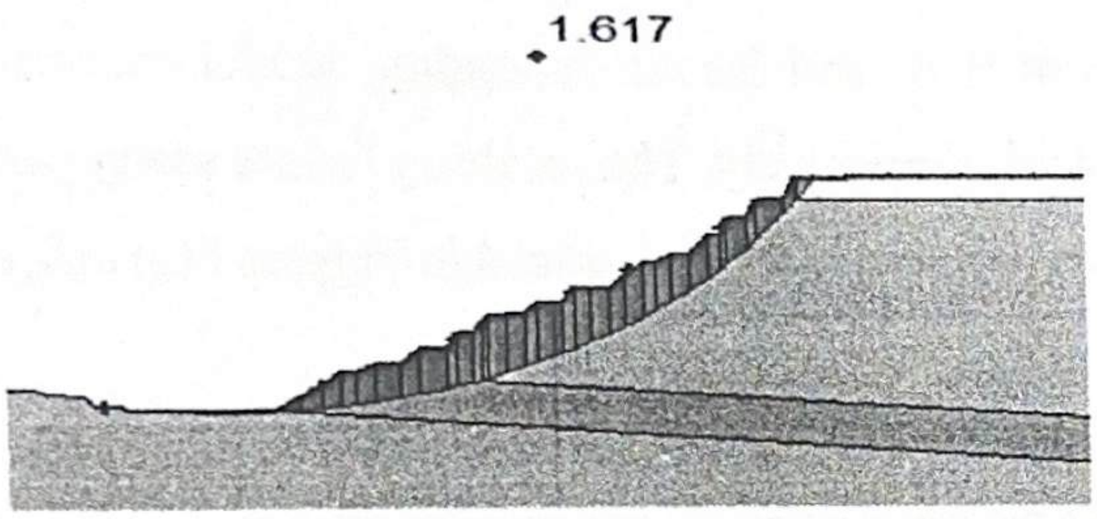

Figure 5 (c): Critical slip surface, (Wind and Rain condition)

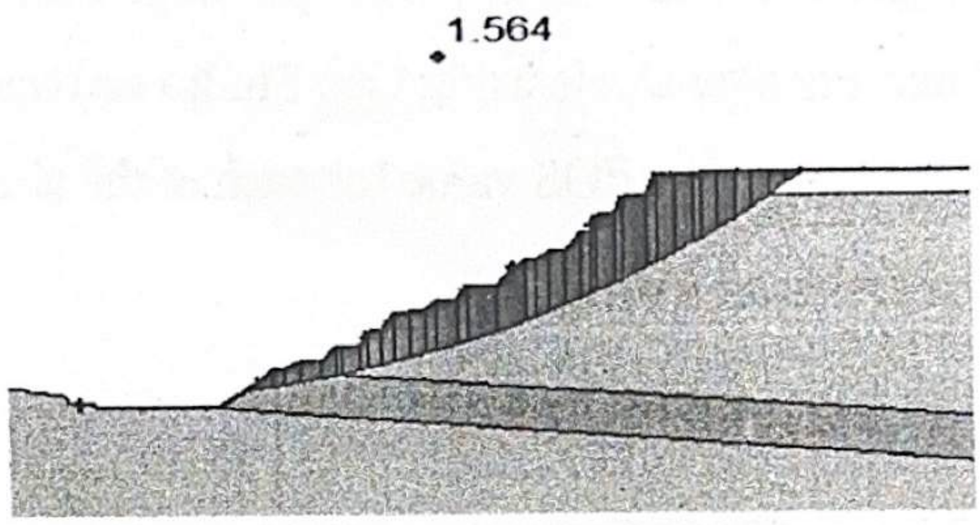

Figure 5(d): Critical slip surface,
(Blasting condition)

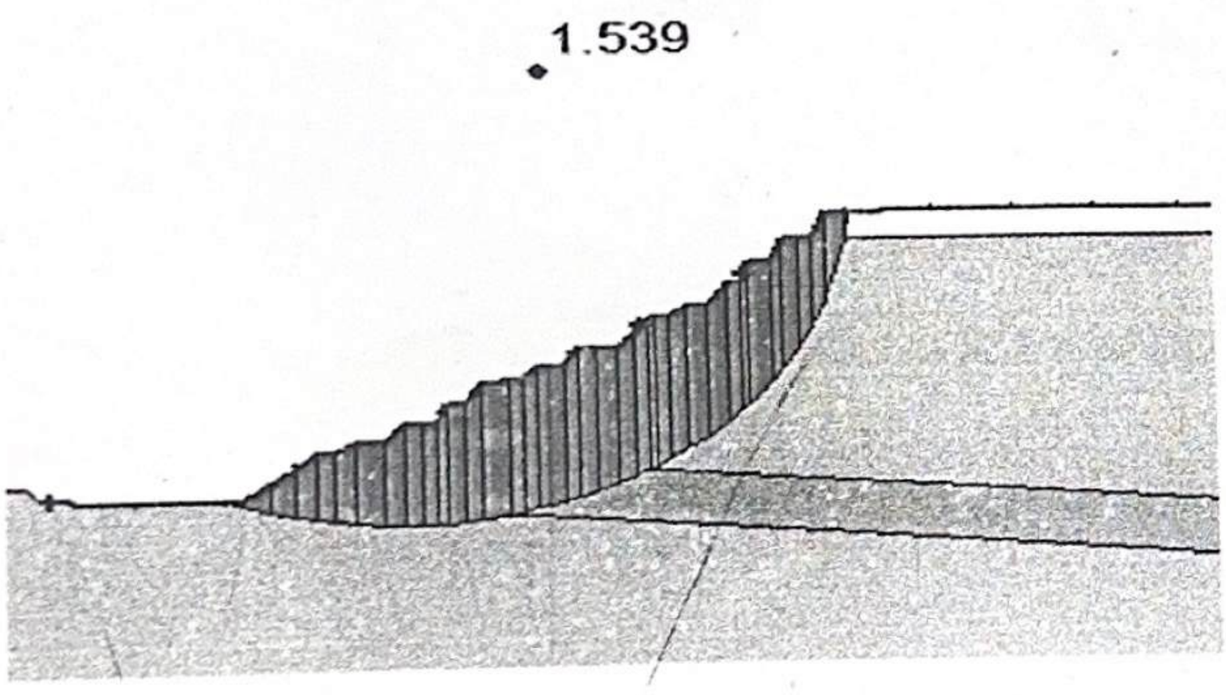

Figure 5:(e): Critical slip surface,
(Cloud burst condition)

Figure 5 present the most critical slip surfaces for the section, for dry condition, saturated condition, rain and wind condition, blasting condition and cloud burst condition respectively. The FOS values obtained from the numerical modeling runs are provided in Table 3.

From Table 3, it can be seen that this pit slope is found to be stable for all the loading conditions studied, as FOS values are above the reference value of 1.5 for long term stability.

Table 3 Critical FOS values for A-A`

Dry condition	1.719
Saturated condition	1.662
Rain and wind condition	1.617
Blasting condition	1.564
Cloud burst condition	1.539

Analyses of section B-B`

Figures 6 and 7 present the pit slope section of B-B` and the corresponding model geometry fo numerical analysis using Geo Studio software tool, respectively. The resulting failure surface and th corresponding FOS value for each of the above conditions are summarized in Figures 8(a) to 8(e) an Table 4, respectively.

Figure 6: profile of section B-B`

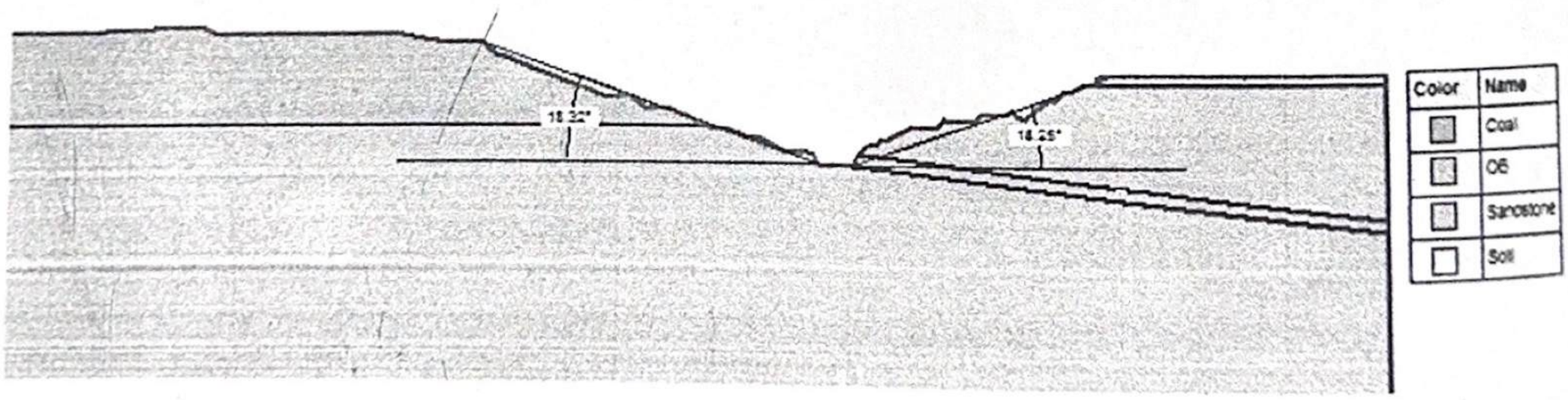

Figure 7: Geometry model of sectopm B-B`

Figure 8(a): Critical slip surface

(Dry condition)

Figure 8(b): Critical slip surface

(Saturated condition)

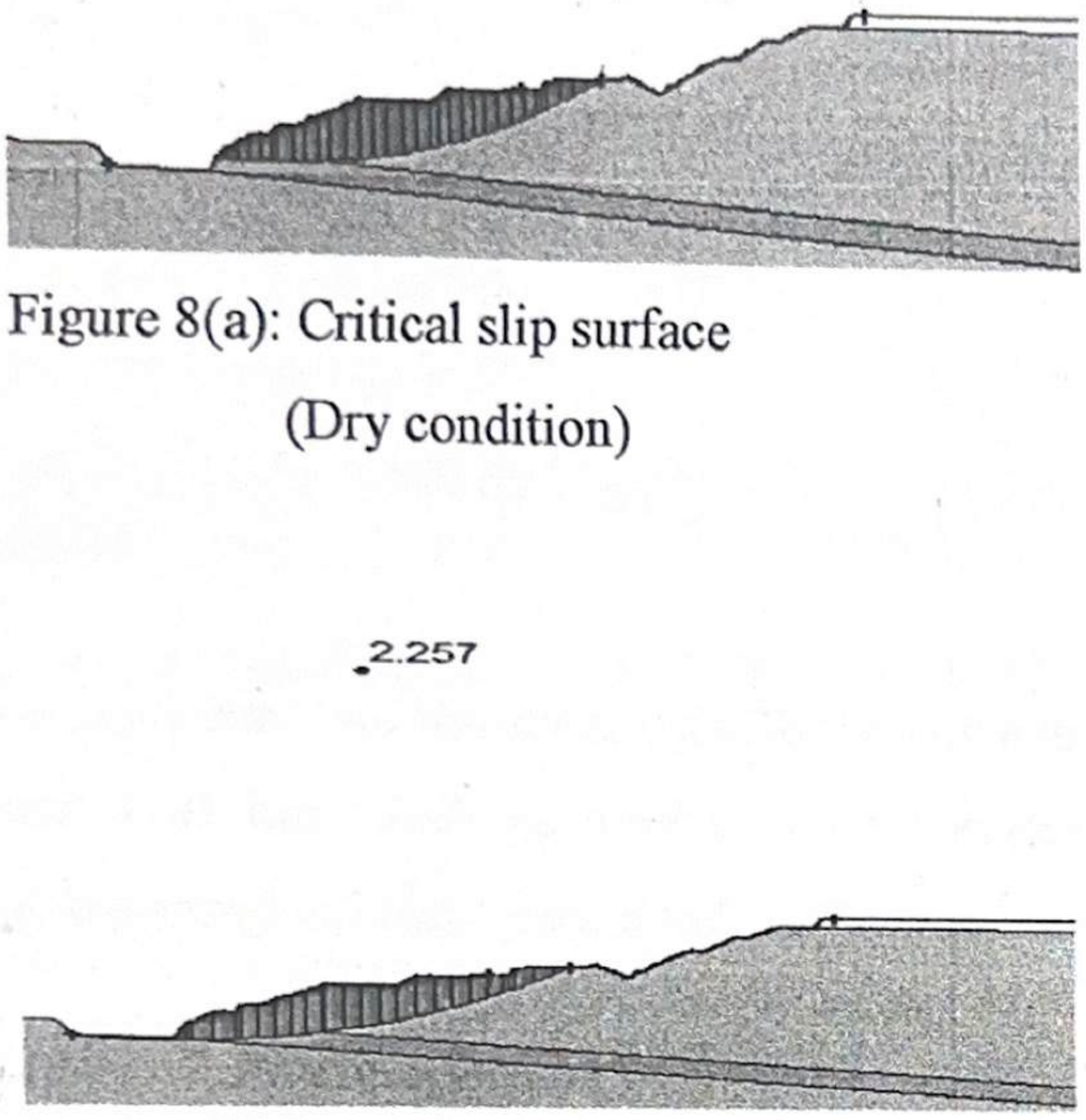

Figure 8(c): Critical slip surface

(Wind and Rain condition)

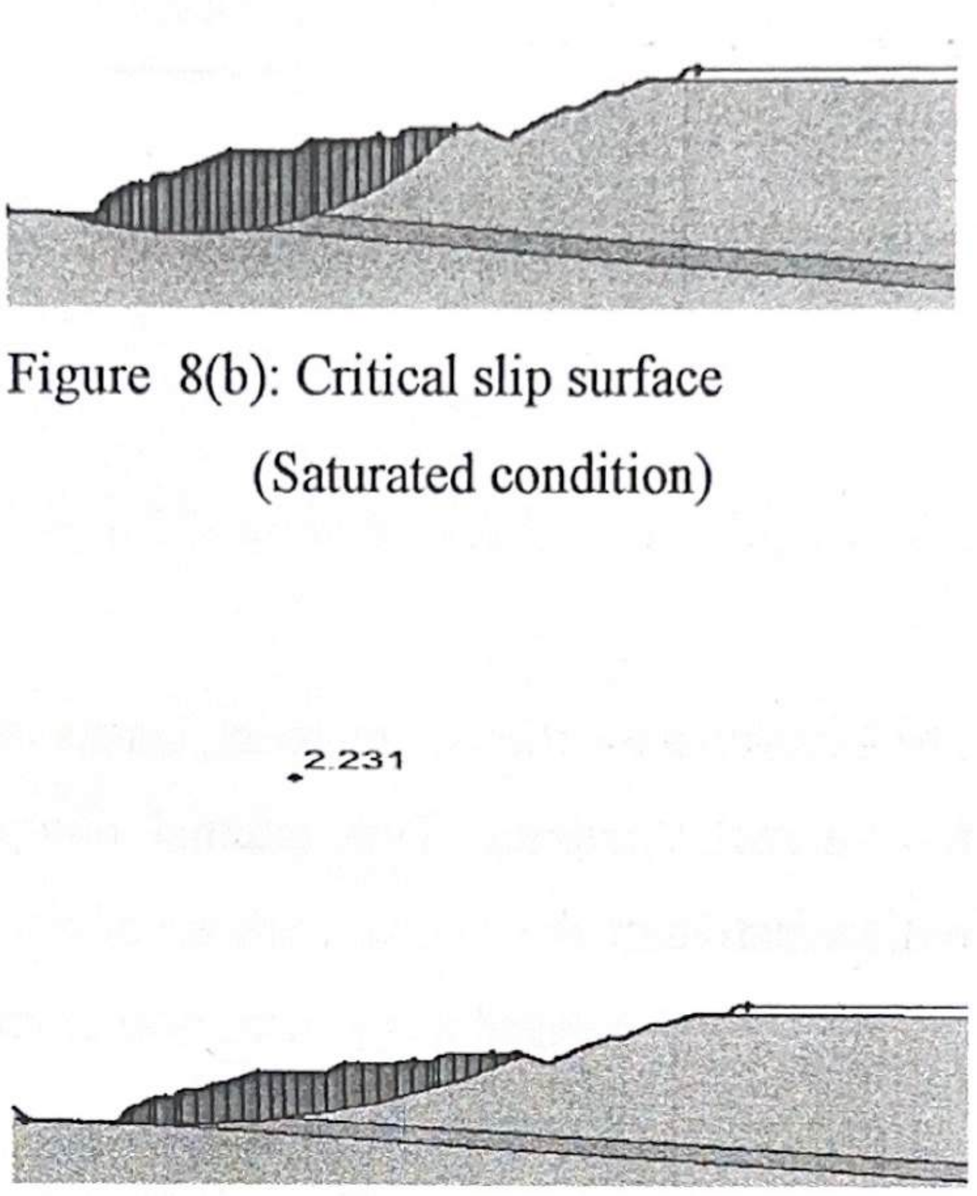

Figure 8(d): Critical slip surface

(Blasting condition)

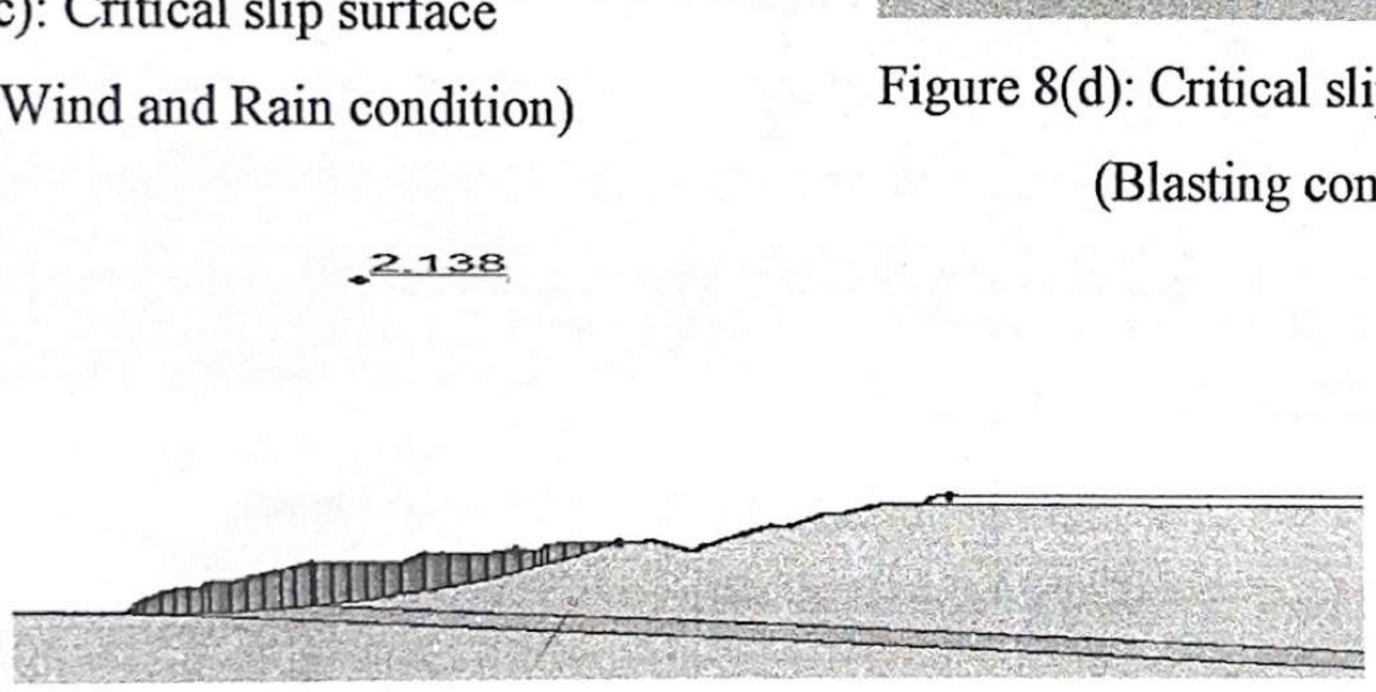

Figure 8:(e): Critical slip surface,

(Cloud burst condition)

Figure 8: presents the most critical slip surfaces for the section, for dry condition, saturated condition, rain and wind condition, blasting condition and cloud burst condition respectively. The FOS values obtained are shown in Table 4.

Table 4 Critical FOS values for B-B`

Dry condition	2.432
Saturated condition	2.314
Rain and wind condition	2.257
Blasting condition	2.231
Cloud burst condition	2.138

From Table 4, it can be seen that this pit slope is found to be stable for all the loading conditions studied, as FOS values are above the reference value of 1.5 for long term stability.

8.3 Analysis of OB / Waste Dump Slopes

The excavated overburden material, consisting of a mixture of shaly sandstone and sandstone, is used for internal dumping. Two internal dump sections referred here as A-A` and B-B` are the representative of the critical sections of internal dumps. The dump slope profiles (provided by the authority) are analysed using numerical approach, as detailed below.

8.3.1 Numerical Modelling and Analysis of Internal Dump Slope

Two critical dump slope sections are analysed numerically for stability assessment. Since the dump consist of mixture of shaly sandstone and sandstone, the average mechanical properties of these materials are used for numerical analyses. Table 5 presents the material properties of the OB dump materials.

Table 5 Material properties of Internal Dump

Material	**Unit weight (kN/m^3)**	**Cohesion (kPa)**	**Φ(degrees)**
OB	26.5	300	28

DUMP SECTION A-A`

Figures 26 and 27 present the derived dump section on A-A` and the corresponding model geometry for numerical analysis using Geo Studio software tool, respectively. The resulting failure surface and the corresponding FOS value for each of the above conditions are summarized in Figures 28(a) to 28(e) and Table 15, respectively.

Figure 9 Cross-section of Overburden Dump

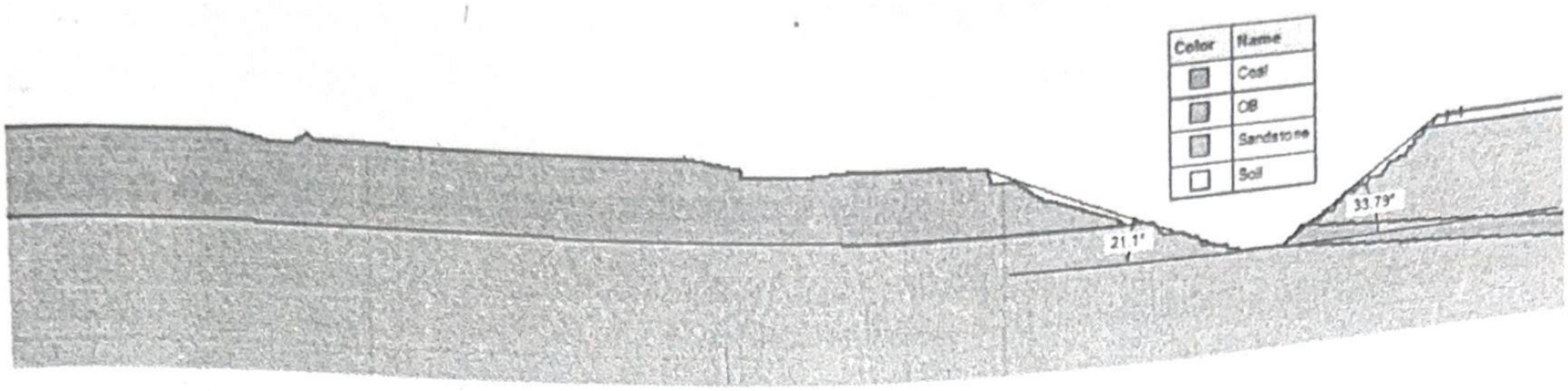

Figure 10 Model Geometry of Overburden Dump

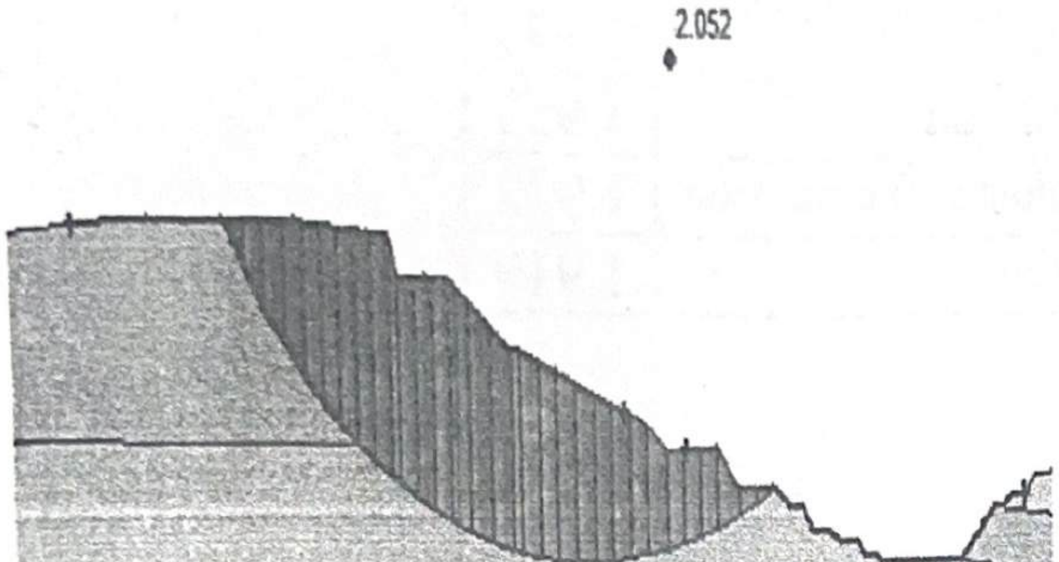

Figure 11(a): Critical slip surface

(Dry condition)

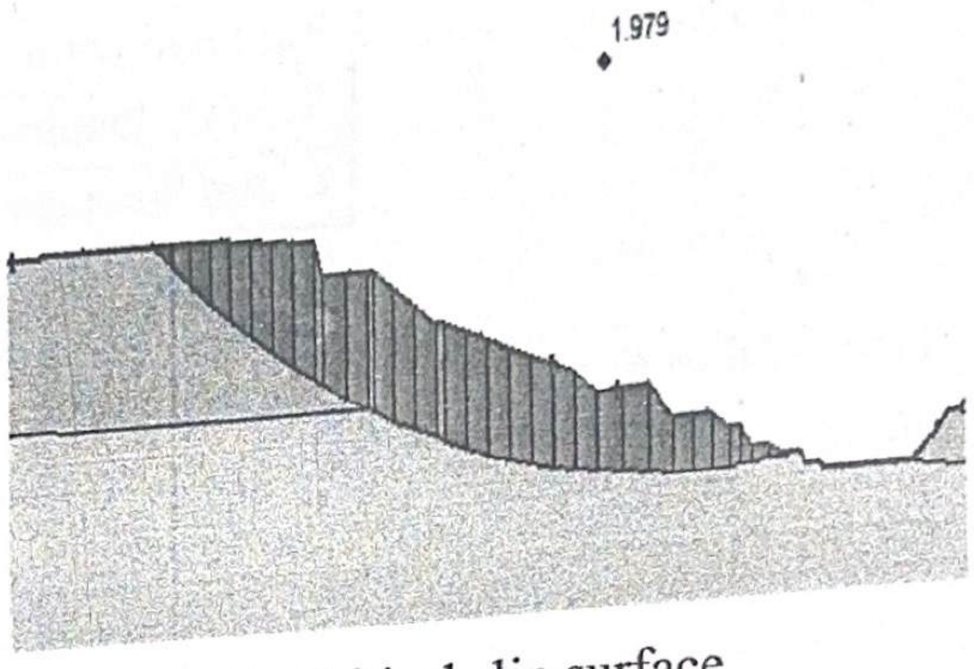

Figure 11(b): Critical slip surface

(Saturated condition)

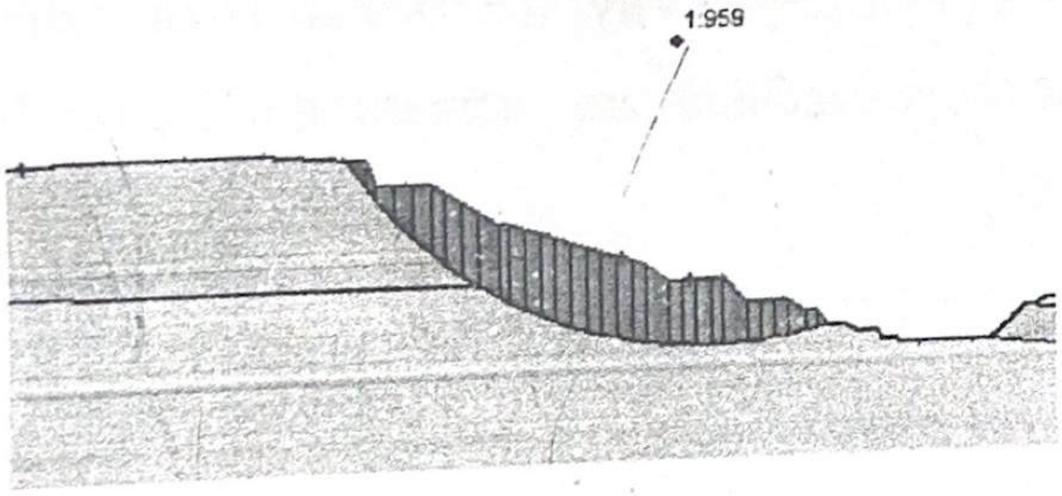

Figure 11(c): Critical slip surface

(Wind and Rain condition)

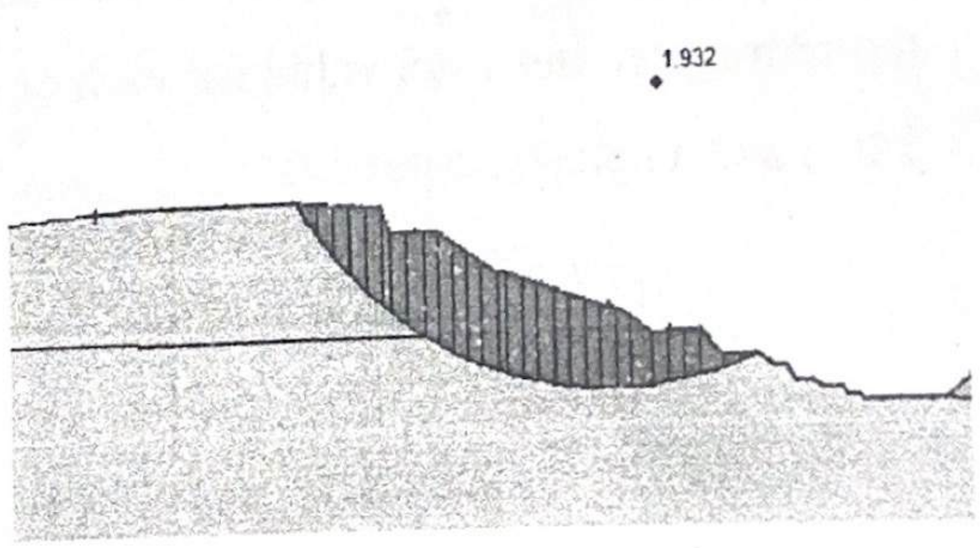

Fig 11:(d): Critical slip surface,

(Blasting condition)

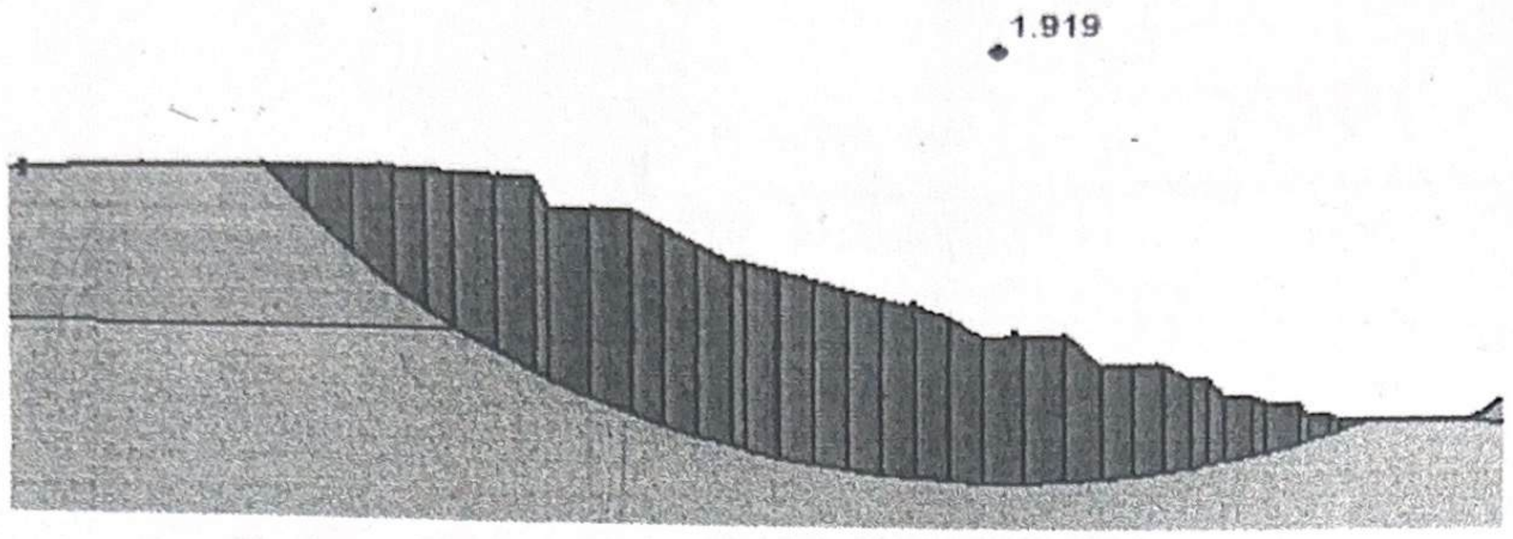

Figure 11(e): Critical slip surface

(Cloud burst condition)

Figure 11: Presents the most critical slip surfaces for the Internal Dump, for dry condition, saturated condition, rain and wind condition and cloud burst condition. The FOS values obtained from the numerical modeling runs are provided in Table 6.

Table 6 Critical FOS values for Internal Dump

Dry condition	2.051
Saturated condition	1.979
Rain and wind condition	1.959
Seismic loading (blasting) condition	1.932
Cloud burst condition	1.919

From Table 6, it can be seen that the structure is found to be stable for all the loading conditions studied, as FOS values are above the reference value of 1.5 for long term stability.

DUMP SECTION B-B`

Figures 12 and 13 present the derived dump section on B-B` and the corresponding model geometry for numerical analysis using Geo Studio software tool, respectively. The resulting failure surface and the corresponding FOS value for each of the above conditions are summarized in Figures 14(a) to 14(e) and Table 7, respectively.

Figure 12 Cross-section of Overburden Dump

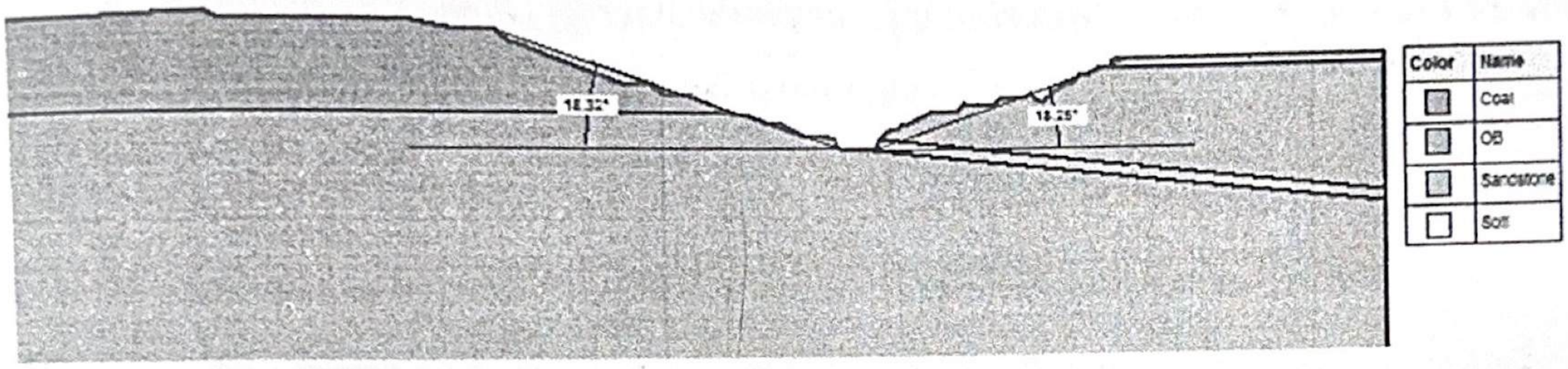

Figure 13 Model Geometry of Overburden Dump

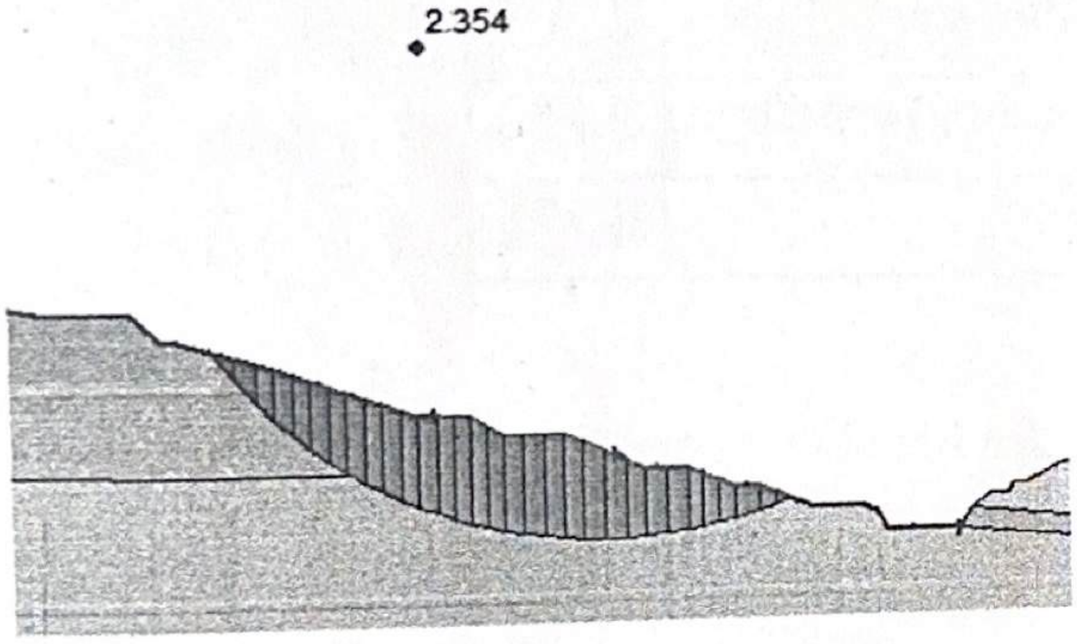

Figure 14(a): Critical slip surface
(Dry condition)

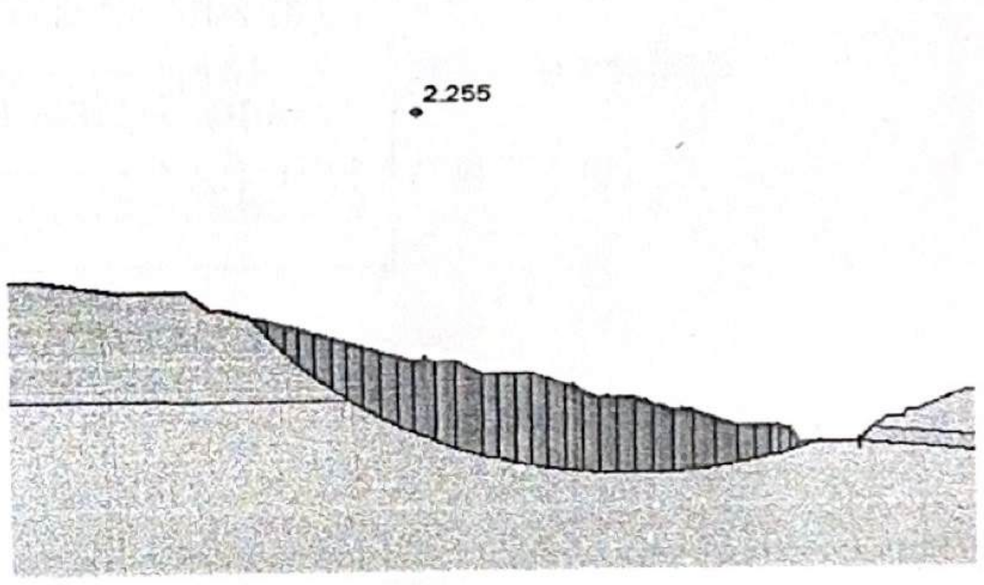

Figure 14 (b): Critical slip surface
(Saturated condition)

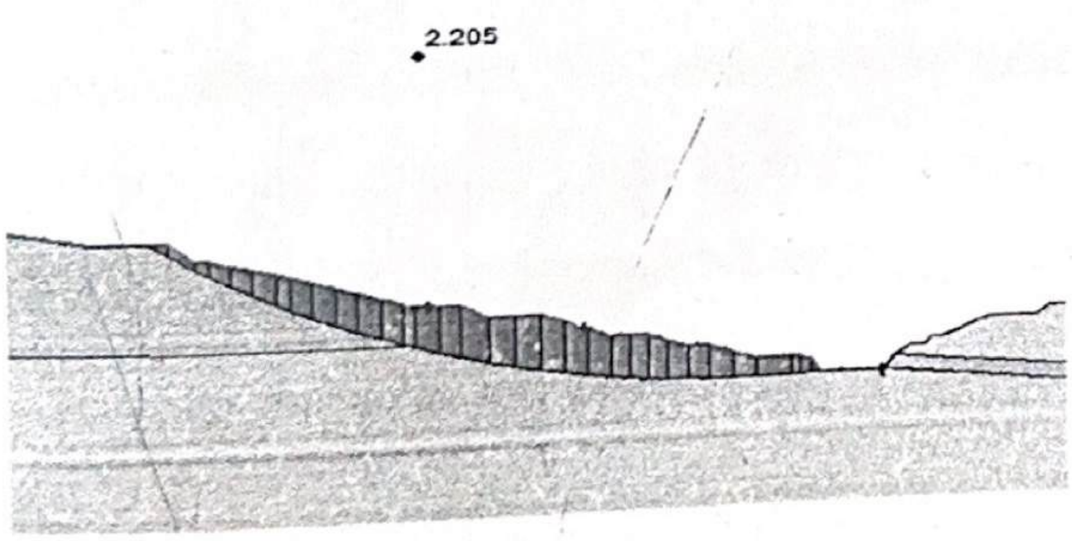

Figure 14(c): Critical slip surface
(Wind and Rain condition)

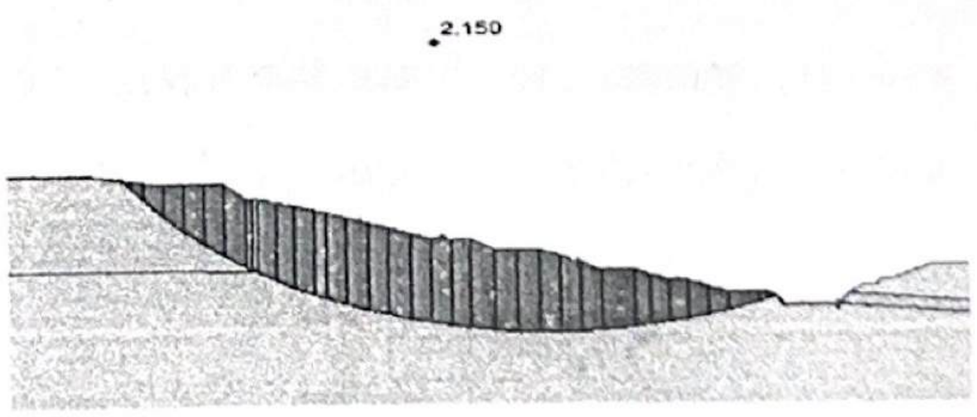

Figure 14(d): Critical slip surface
(Blasting condition)

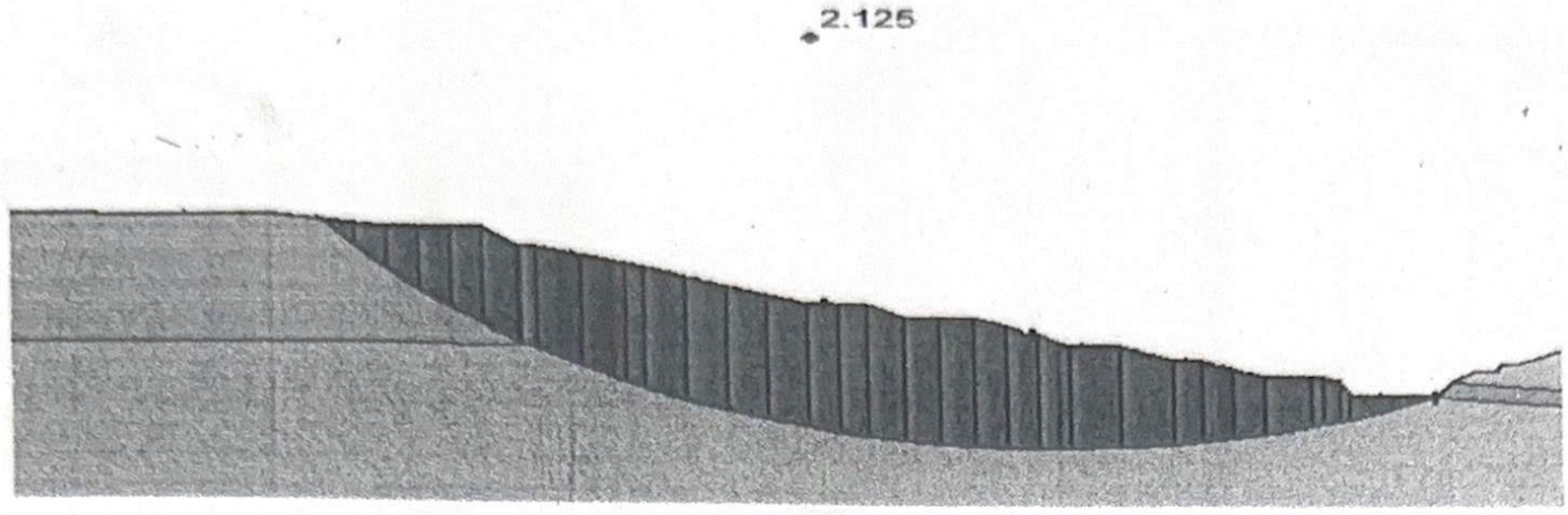

Figure 14(e): Critical slip surface

(Cloud burst condition)

Figure 14 Presents the most critical slip surfaces for the Internal Dump, for dry condition, saturate condition, rain and wind condition and cloud burst condition. The FOS values obtained from th numerical modeling runs are provided in Table 7.

Table 7 Critical FOS values for Internal Dump

Dry condition	2.354
Saturated condition	2.255
Rain and wind condition	2.205
Seismic loading (blasting) condition	2.150
Cloud burst condition	2.125

From Table 7, it can be seen that the structure is found to be stable for all the loading condition studied, as FOS values are above the reference value of 1.5 for long term stability.

8.3.2 Numerical Modelling and Analysis of External Dump Slopes

Two external dump slope sections referred here as A-A' and B-B' are analysed numerically f stability assessment. Since the dump consists of mixture of shaly sandstone and sandstone, t average geotechnical properties of these materials are used for numerical analyses. Table 8 presen the material properties of the OB dump materials.

Table 8 Material properties of External Dump

Material	**Unit weight (kN/m^3)**	**Cohesion (kPa)**	**Φ(degrees)**
OB	26.5	300	28

External Dump A-A'

The resulting failure surfaces and corresponding FOS values for five different loading conditions are summarized in Figures 15(a) to 15(e) and Table 9, respectively.

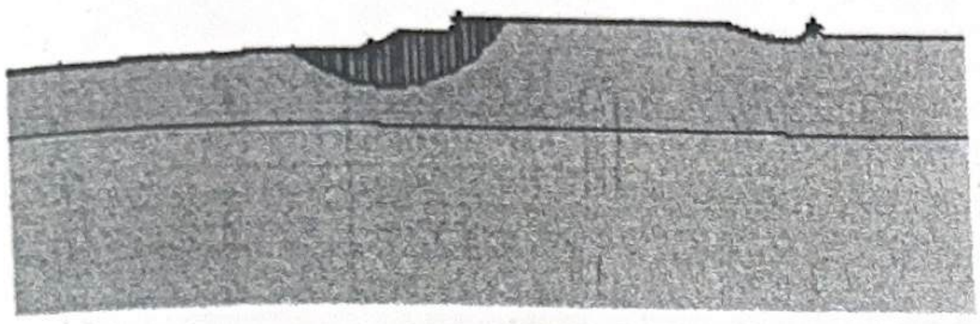

Figure 15 (a): Critical slip surface, (Dry condition)

Figure 15(b): Critical slip surface (Saturated condition)

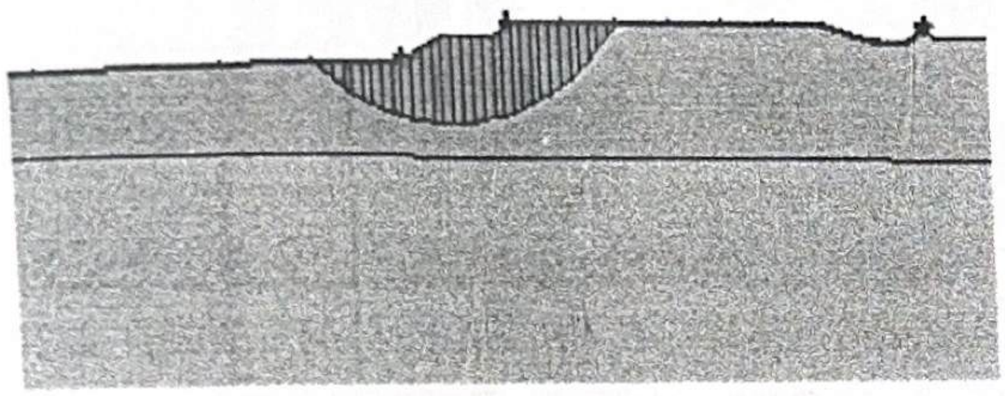

Figure 15(c): Critical slip surface (Wind and Rain condition)

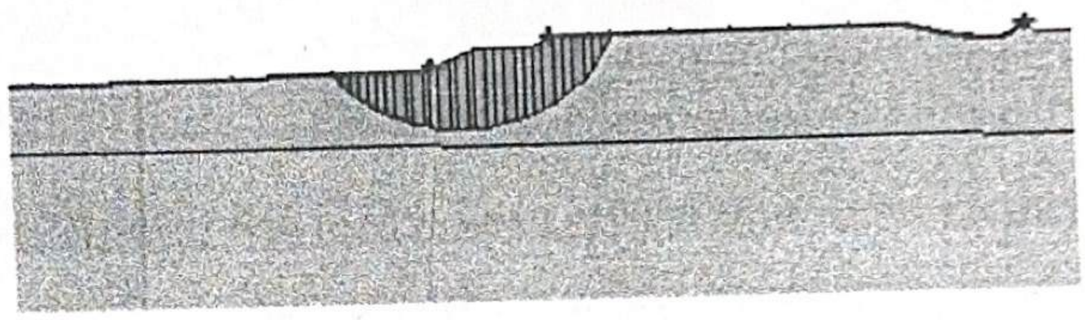

Figure 15(d): Critical slip surface (Blasting condition)

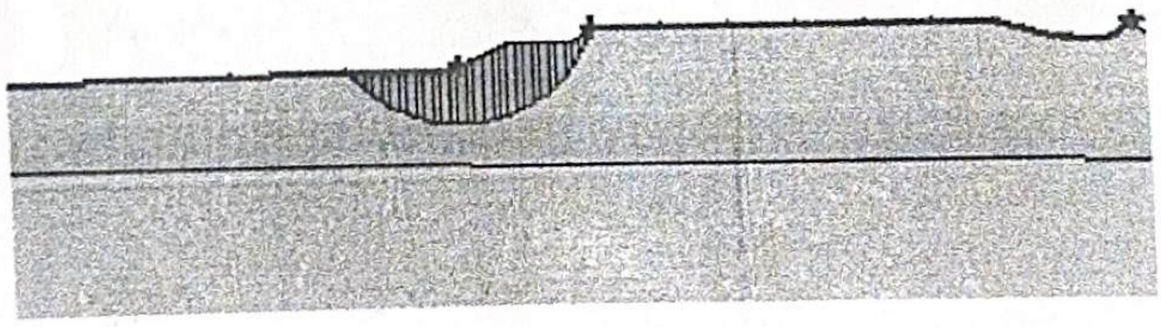

Figure 15(e): Critical slip surface (Cloud burst condition)

Figure 15 Presents the most critical slip surfaces for the Internal Dump, for dry condition, saturated condition, rain and wind condition and cloud burst condition. The FOS values obtained from the numerical modeling runs are provided in Table 9.

Table 9 Critical FOS values

Dry condition	FOS > 2.0
Saturated condition	
Rain and wind condition	
Blasting condition	
Cloud burst condition	

External Dump B-B'

The resulting failure surfaces and corresponding FOS values for five different loading conditions ar summarized in Figures 16(a) to 16(e) and Table 10, respectively.

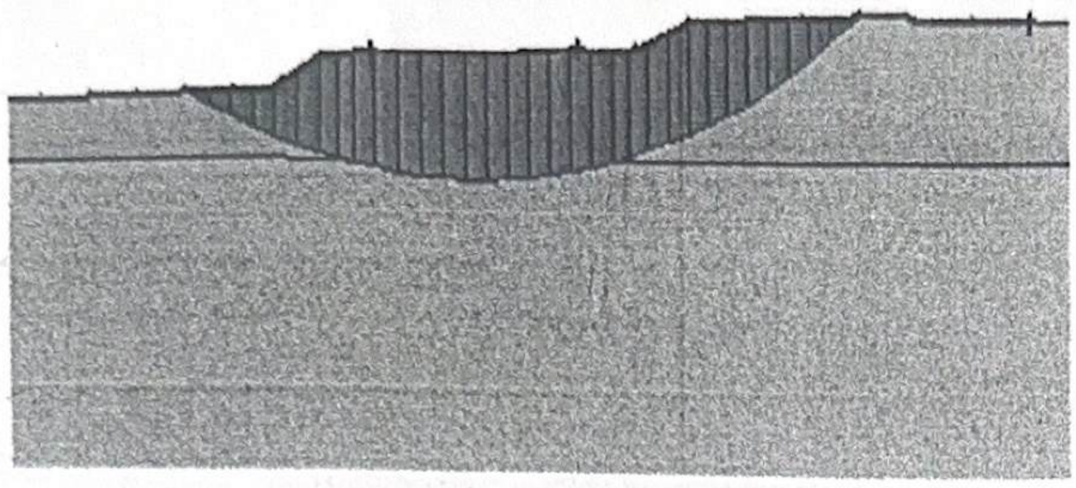

Figure 16 (a): Critical slip surface

(Dry condition)

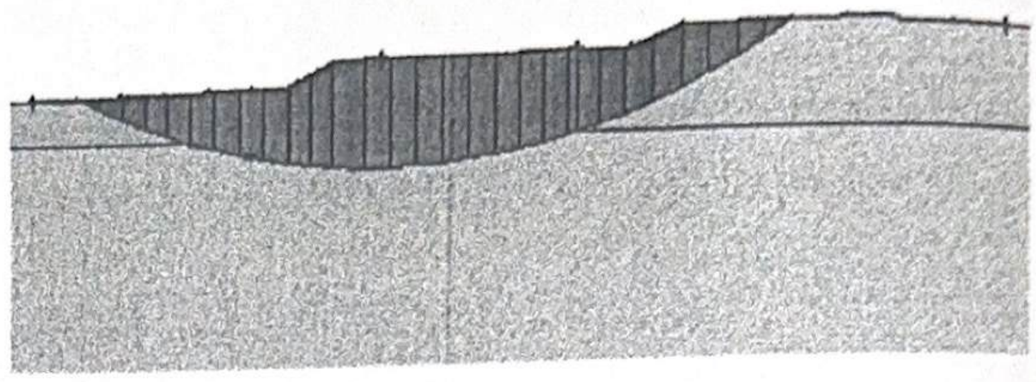

Figure 16(b): Critical slip surface

(Saturated condition)

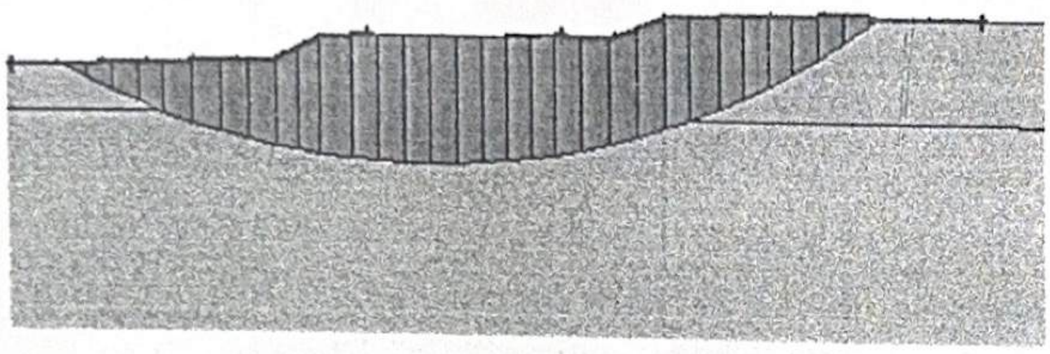

Figure 16(c): Critical slip surface

(Wind and Rain condition)

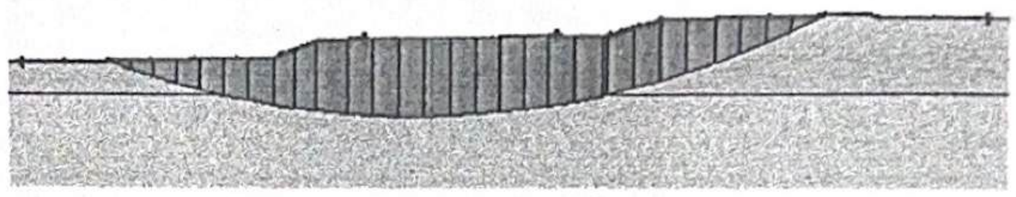

Figure 16(d): Critical slip surface

(Blasting condition)

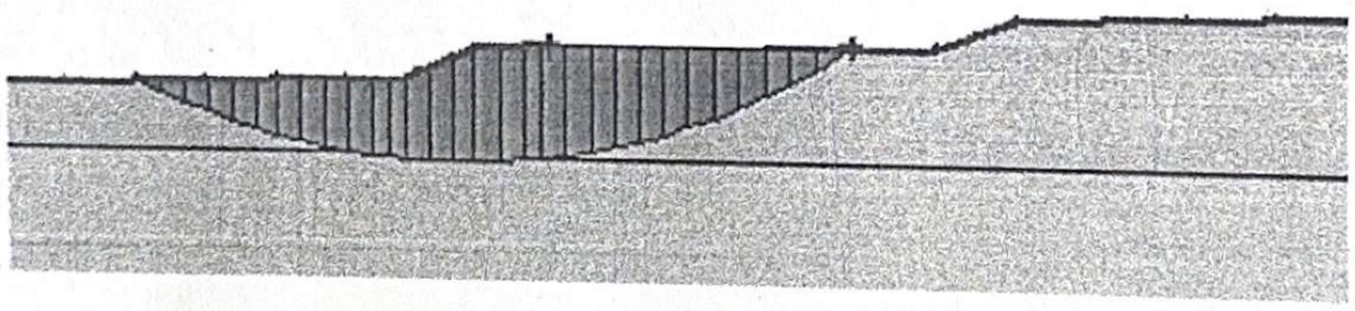

Figure 16(e): Critical slip surface

(Cloud burst condition)

Figure 16 Presents the most critical slip surfaces for the Internal Dump, for dry condition, saturated condition, rain and wind condition and cloud burst condition. The FOS values obtained from the numerical modeling runs are provided in Table 10.

Table 10 Critical FOS values

Dry condition	FOS> 2.0
Saturated condition	
Rain and wind condition	
Blasting condition	
Cloud burst condition	

8.4 Ultimate Slope Analyses

Figures 17 and 18 present the derived ultimate section and the corresponding model geometry for numerical analysis using Geo Studio software tool, respectively. The resulting failure surfaces and corresponding FOS values for five different loading conditions are summarized in Figures 19(a) to 19 (e) and Table 11, respectively.

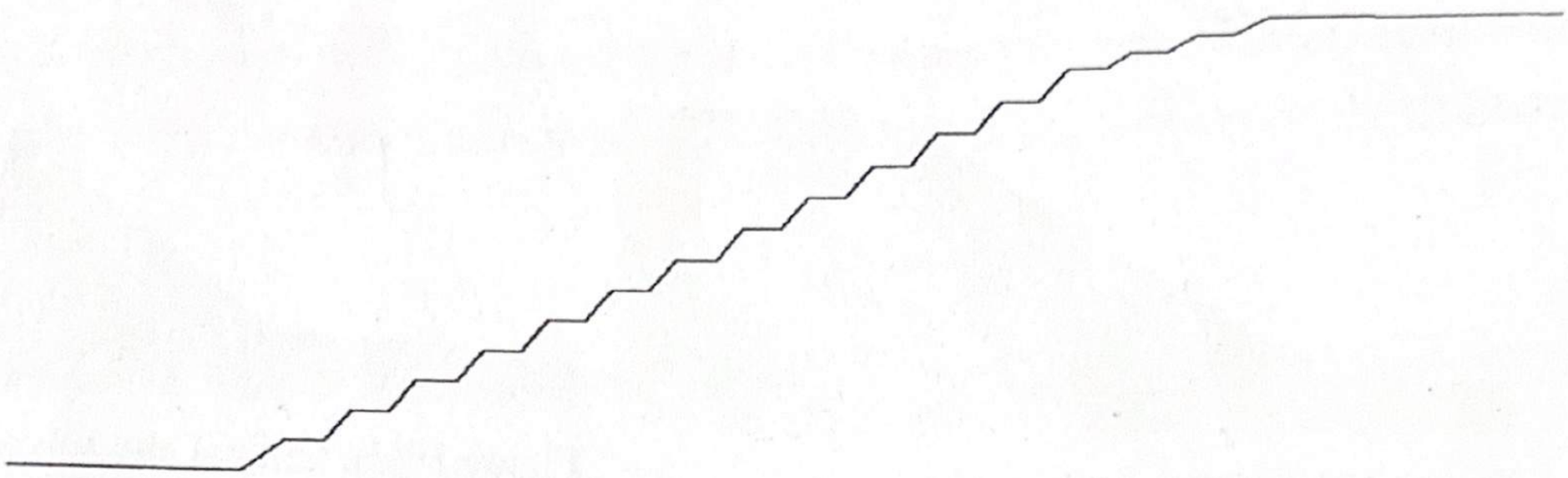

Figure 17 Ultimate Pit cross-section

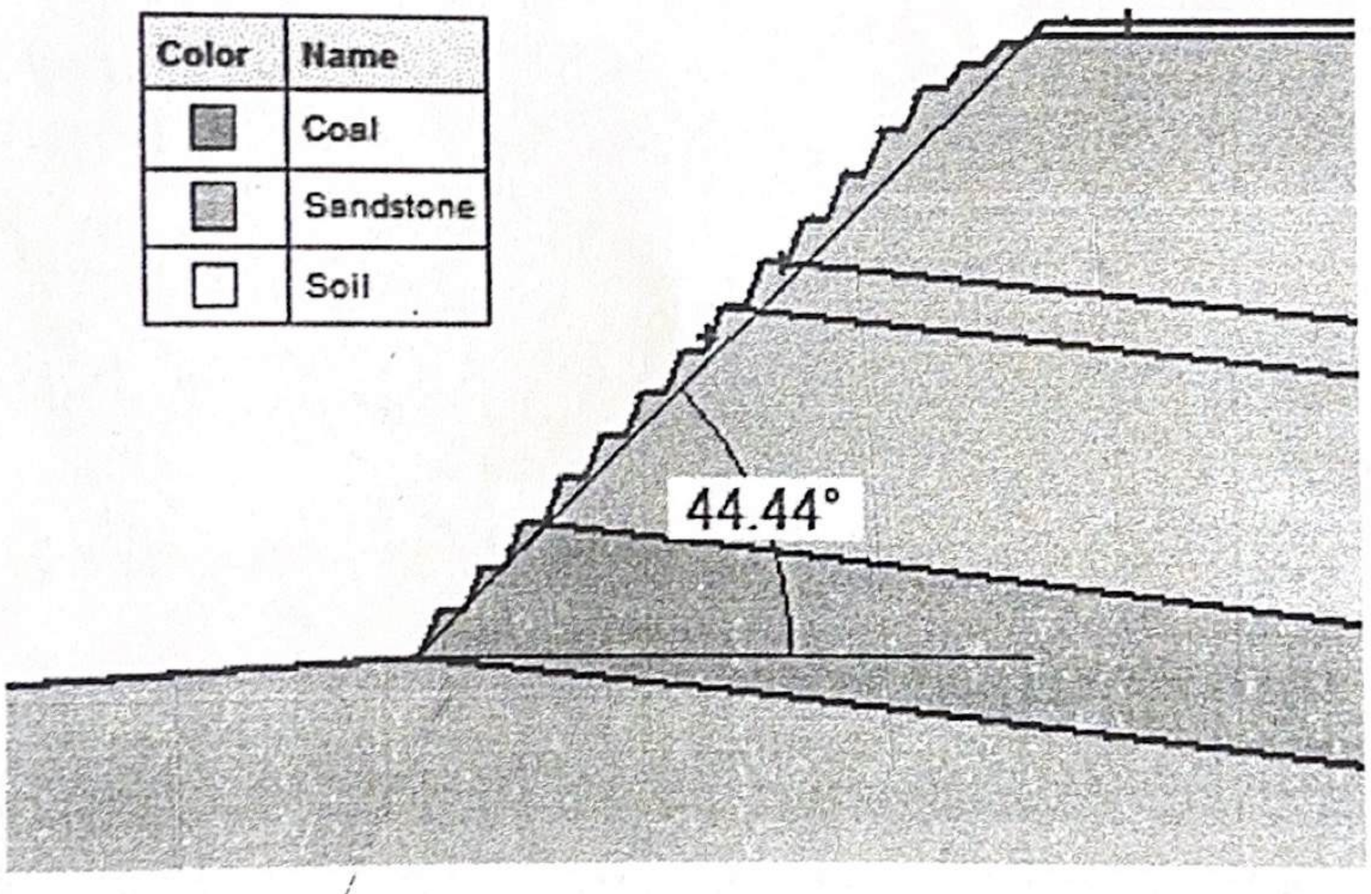

Figure 18 Model Geometry

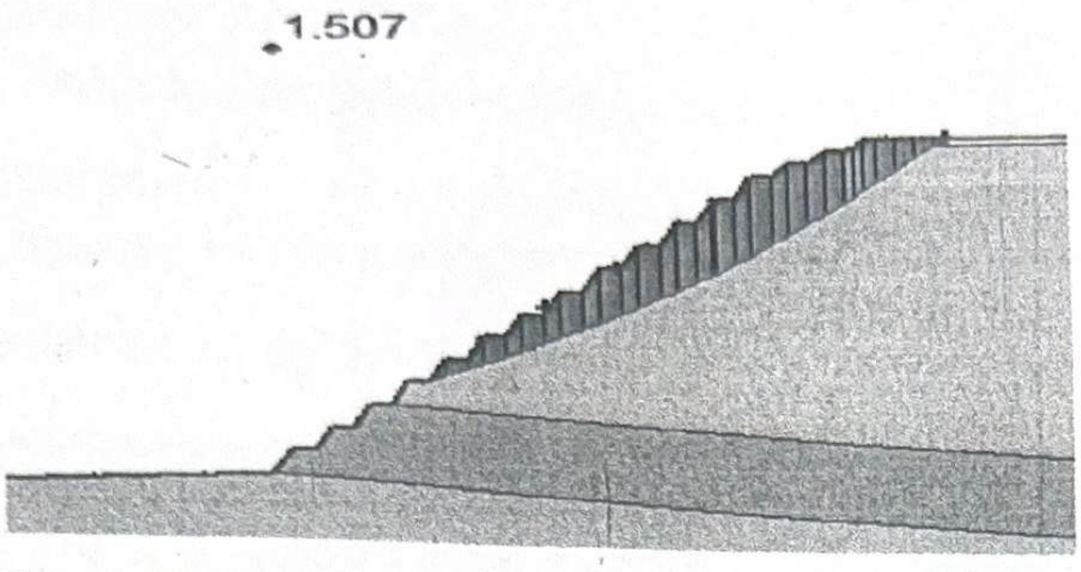

Figure 19(a): Critical slip surface

(Dry condition)

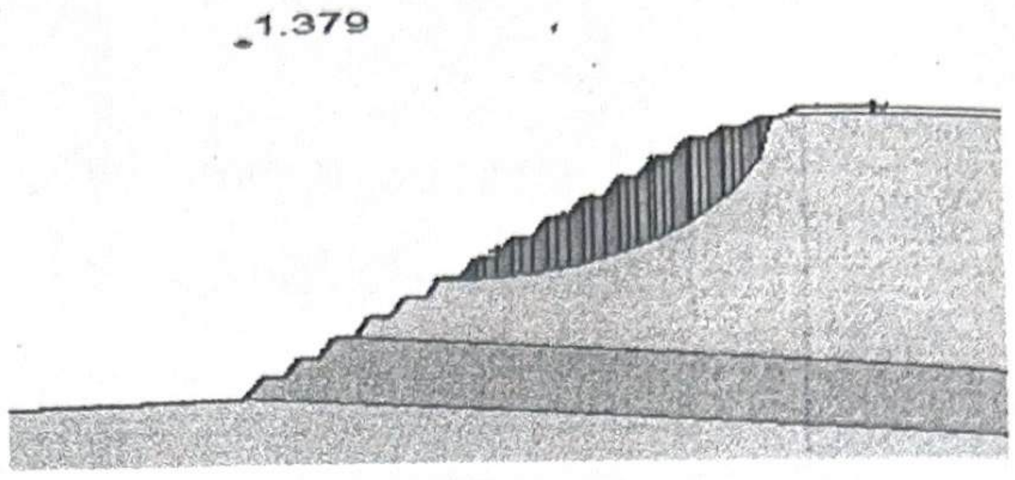

Figure 19(b): Critical slip surface

(Saturated condition)

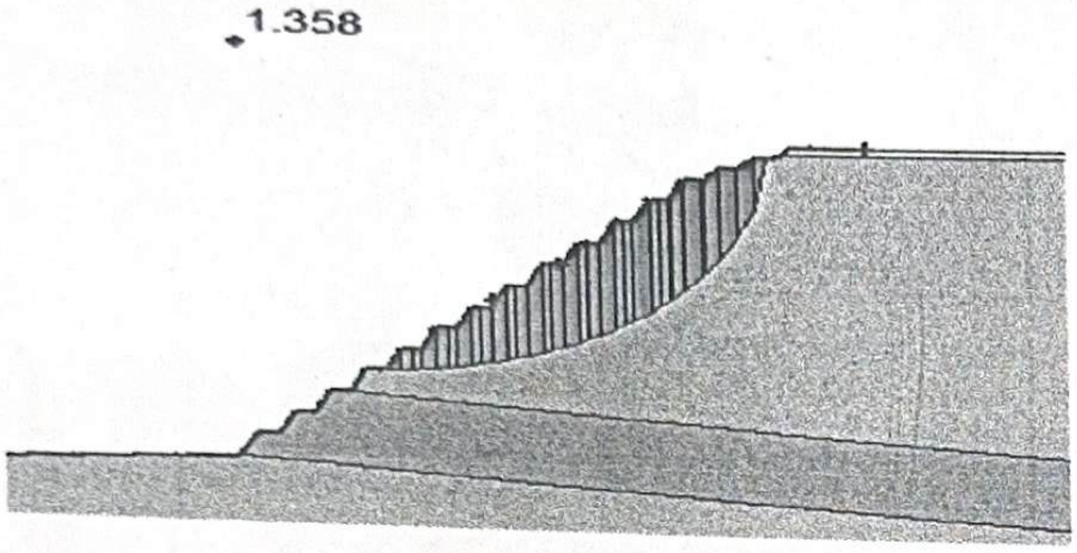

Figure 19(c): Critical slip surface

(Wind and Rain condition)

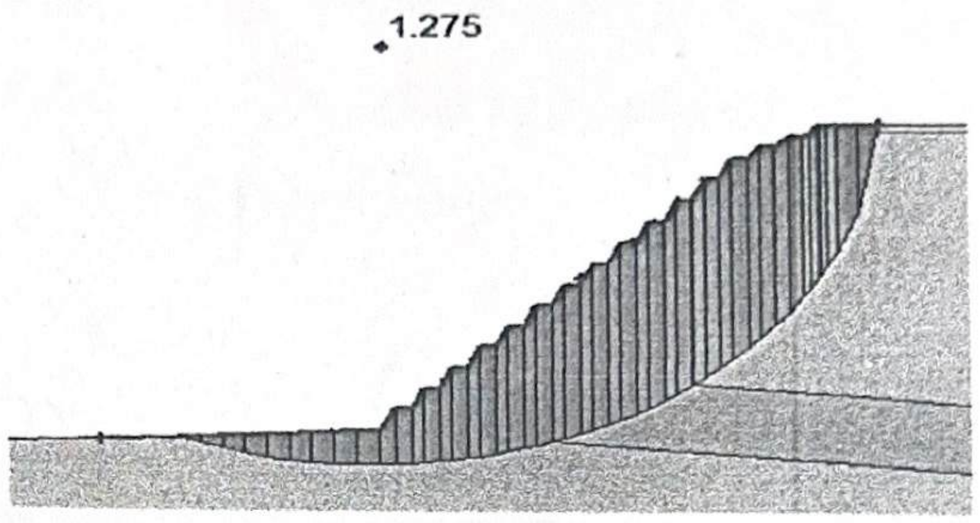

Figure 19(d): Critical slip surface

(Blasting condition)

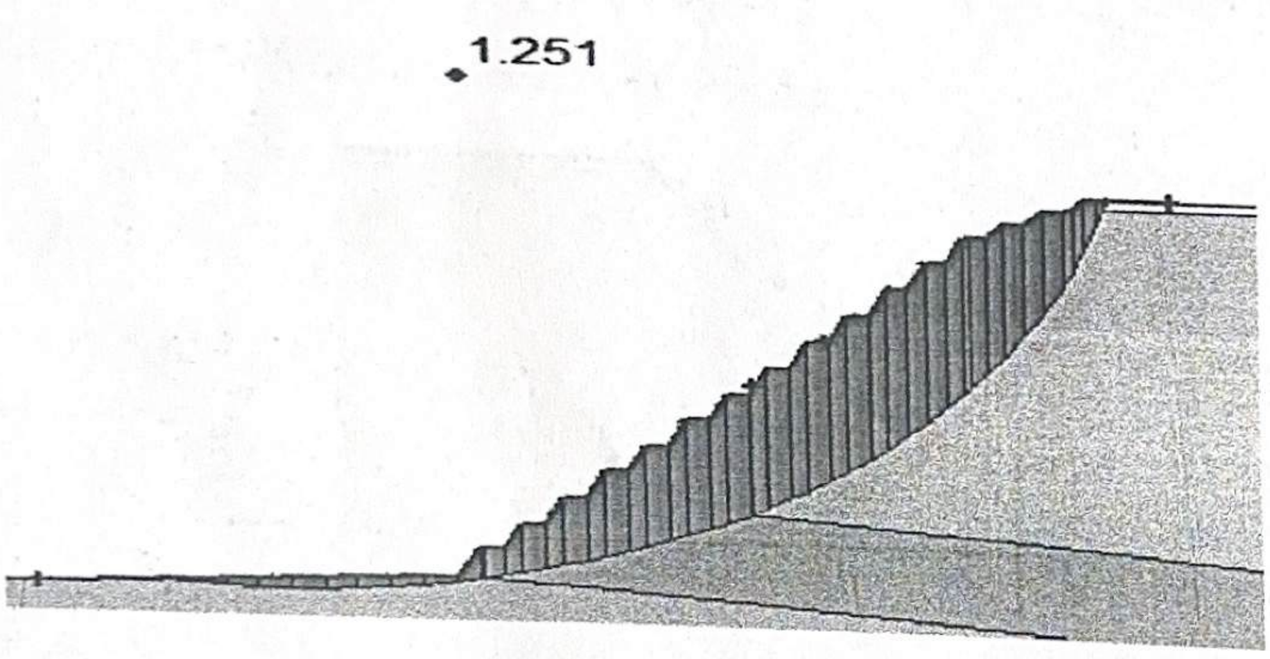

Figure 19(e): Critical slip surface

(Cloud burst condition)

Figure 19 Presents the most critical slip surfaces for the Internal Dump, for dry condition, saturat condition, rain and wind condition and cloud burst condition. The FOS values obtained from t numerical modeling runs are provided in Table 11.

Table 11 Critical FOS values

Dry condition	1.507
Saturated condition	1.379
Rain and wind condition	1.358
Blasting condition	1.275
Cloud burst condition	1.251

8.5 Method of Mining

The currently the mining is done as per DPR on 2016 as mentioned earlier. Because the same equipment are also available and there is no drastic change in production target is envisaged by the mining authority, the same practice of mining can be continued. Further, during the field visit, the study team observed that the standard practices were being followed. However, some of the pit slopes appear to be unstable from long term stability perspective. Therefore, certain values of bench design like bench height, bench slope angle, bench width and overall slope for future mining are suggested. These are given below. It can also be noticed these parameters are in concordant with the CMR-106 regulations.

The recommendation for bench height and width for open cast during active mining operation are given below in table:

Table 12 Design parameters for mining slopes

Sr No	Types of material	Maximum Height (m)	Maximum Slope angle (^{O})	Minimum Bench Width (m)	Overall Slope angle (in benches) ^{0}
1	Soft Soil	3	45	9	14
2	Coal	10	70	10	30
3	Hard rock	10	70	10	28

The recommendation for bench height and width at ultimate pit limit are given below in table:

Table 13 Design parameters for ultimate slopes

Sr No	Types of material	Maximum Height (m)	Maximum Slope angle (^{O})	Minimum Bench Width (m)	Overall Slope angle (in benches) ^{0}
1	Soft Soil	3	45	9	33
2	Coal	5	50	5	33
3	Hard rock	10	70	6	42

The recommendation for bench height and width for external Mine dump

Bench height = 30 m Bench width = 20 m

Bench slope angle = 37.5 ^{O} Overall slope angle = 27 ^{O}

Total Dump Height may be extended up to 90 m for external dumps and 180 m for internal dumps
A minimum distance of 100 m should be maintained from the toe of the internal dump to the neares
active face toe.

The top soil should be preserved properly. The top soil shall be stacked at a separate place, so that
the same is used to cover the reclaimed area.

The recommended bench height and width for top soil dumps are given below

Bench height = 3 m Bench width = 9 m

Bench slope angle = 50^0 Overall slope angle = 33^0

- Adequate training should be imparted to persons concerned for safe dump management
- A few small-scale failures may subsequently cause a big failure. If two or three benches ar made steeper at any level in any part/depth of the pit/dump then it may initiate failures Although the overall slope angles may be quite low but the steeper slope angles of three benche may increase the stress at the toe of relatively steeper part of the slope, which may caus failures. Two or three such small failures may cause a big failure. So benching should be don uniformly from top to bottom.
- A special monitoring organization cell should be created under the responsible officer fo supervising and implementation of all the protection measure and for monitoring the dump an pit slope. The monitoring program should include visual inspection of the pit slope and dum slope, specially crest, slope face and toe areas for evidence of cracking, seepage, erosion deformation etc. It is recommended that the shift supervisor or field engineer visually inspec these areas. Other observations (cracking, seepage, erosion, deformation) should also be logge properly. Bench should have gradient in any direction for proper drainage.
- It is recommended to monitor slope using Slope Stability Radar (SSR). Slope monitorin Radars can use for continuous 24x7 monitoring as well as live monitoring data analysis. Fo critical slope monitoring, Radar is the best technology to predict slope behavior an deformation trend. It can scan a region of the wall and compares the phase measurement in eac region with the previous scan to determine the amount of movement of the slope. It provide full area coverage of a dump slope and pit slope without the need for reflectors mounted on th rock face. The system offers sub-millimeter precision of wall movements without bein adversely affected by rain, fog, dust, smoke, and haze.
- The monitoring should be done using Total station till the SSR is procured. The Monitorin should be done of strata movement by Total station on weekly basis and physical inspection o

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daily basis. The monitoring stations should be installed at an interval of 100 meter on alternative benches in staggered manners so that effective gap between two stations of two immediate upper and lower benches would be 50 meters only. If any movement is observed then the frequency of monitoring should be increased and it shall be immediately informed to higher management. If the symptoms are abnormal, it must be referred to DGMS authority.

8.6 Slope Stability Monitoring Scheme

For monitoring the slopes, different state-of-the-art monitoring systems are practiced world-wide. These include implementation of following scheme. Any of the methods or combination thereof is suggested to be adopted in the mine depending upon the cost and other operational considerations. A comprehensive overview of these methods are described below.

- Visual monitoring- Day to day visual monitoring is a conventional practice to identify growth of tension cracks and overall understanding of slope movement. Visual inspection forms a basic method of slope instability detection that do not warrant high-tech monitoring devices, thus cost saving. Daily inspections in active areas of mining can be done by the geotechnical assistant and any hazards that are identified may be bring into notices of the mine management who can take remedial action to avoid risk. Visual monitoring also provides a first-hand understanding of the causes of failure and enable the geotechnical engineers to select the correct monitoring devices for the hazardous area. A monthly hazard plan may be prepared and may be displayed to the pit personnel along with possible awareness of the risk involved in the particular hazardous zone.

- Seismic monitoring- Many mines also implement relatively low cost method of slope monitoring using microseismic monitoring system. Seismic monitoring aims to predict slope deformation by measuring microseismic events caused by brittle movements within a rock slope. Analysis of microseismic events using multiple geophones may add in identifying the location of source and therefore the discontinuity on which movement is occurring. These systems, in general, involves installation of a number of geophones in the pit slope, which gather all microseismic movements down to as precise as 0.001mm seismic activity. The data can be stored on a hard disk and then be analysed in computer. Increased seismic activity can provide early warning of slope failure and trends in the data can potentially identify weak failure planes.

- Total Station – Total Station is one of the main methods of surveying in mines. This survey method can be used for slope monitoring in a mine. Usually, slope monitoring using total station comprises of three different parts: (i) a network of reference beacons required on stable ground that can be observed from the transfer / instrument station, (ii) a number of transfer stations can be setup on stable ground at different locations from which the slope surface can be made visible. If the positions of the monitoring points are to be measured, then the transfer stations should be arranged so that they form a suitable survey network for optimal line-of-sight and a robust network; and (iii) installation of monitoring prisms at the probable unstable slope zone or area of interest. For the best practices, the measurement direction should be in the direction of slope movement so that the distance readings approximate the actual slope movement. The monitoring points on the slope can be reflectors or survey prisms, depending on the distance and the accuracy required. The monitoring frequency will depend on the nature of the rock type, operations around the slope and the objectives of the monitoring programme in place. For slow-moving slopes, the measurements may be taken every few weeks or even months. For a potentially rapidly-moving slope, an automated system should be set up to take more frequent readings at pre-set intervals as determined by the geotechnical engineer. Additionally, quick checks of stability can be made by making distance measurements only. When slope movement is detected, there is need for check surveys (using other methods such as triangulation, GPS etc.) to determine the coordinates of each station at less frequent intervals.

- Prism monitoring- Conventional prism monitoring is most frequently found at most of the open pit mines worldwide. Theodolites or total station may be used to monitor the prism

movement installed at different strategic locations. A typical scheme of prism monitoring network is given figure below.

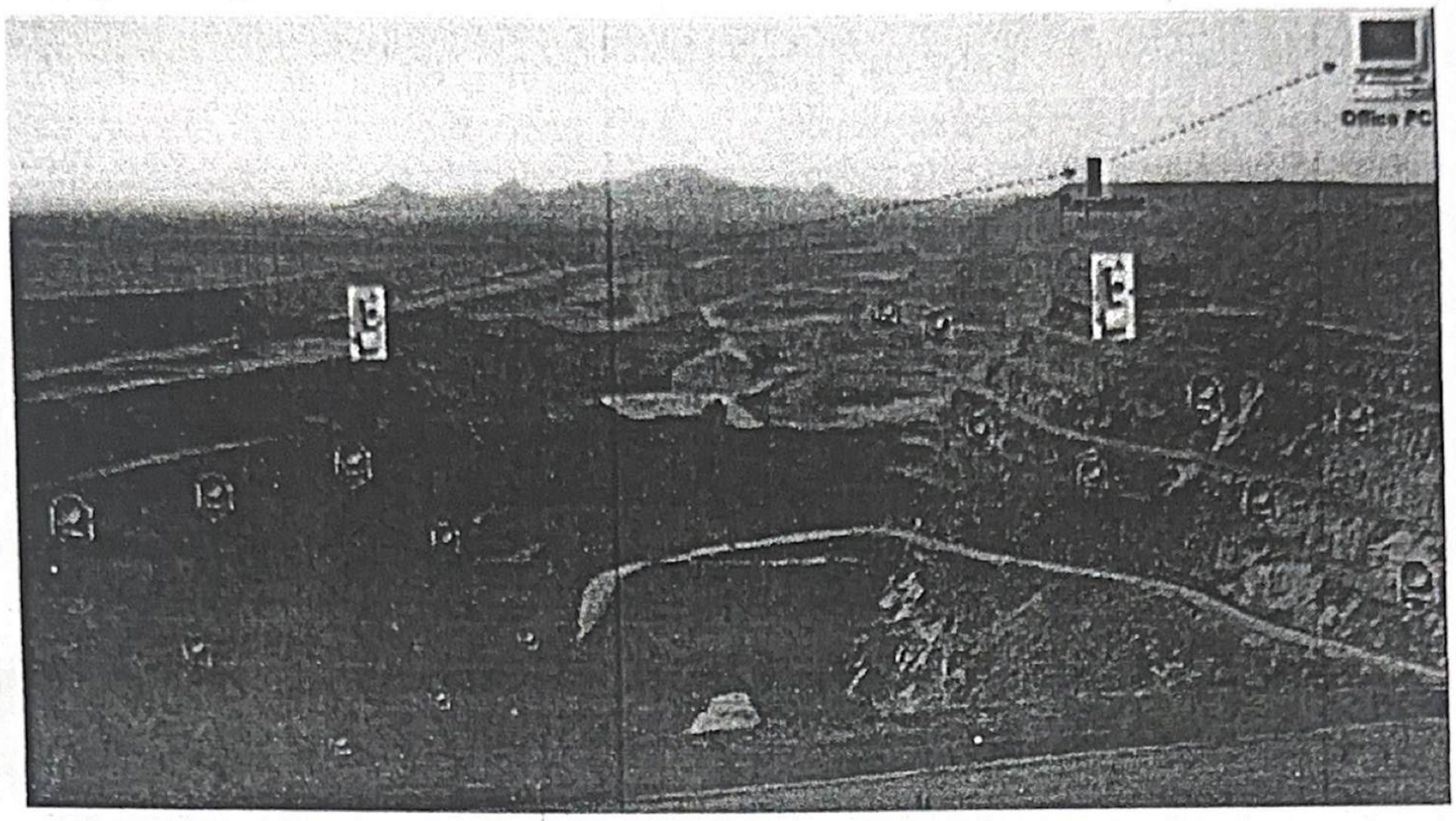

Figure 20 Typical layout of the design for monitoring

Prisms may be installed on the highwalls at a regular spacing both vertically and horizontally throughout the mine. The geotechnical personnel then analyse the data, looking for significant movement, and report any potential areas of slope failure at the working zones.

- Laser monitoring- Prismless laser monitoring is a more precise system than the other methods discussed above. Lasers, one or two may be installed at suitable locations so that it can collect data continuously on an active slope. Laser scanners are battery operated, require no levelling and are eye-safe under all operating conditions. A camera is attached to the side of the laser and takes photographs at the start of scanning. Laser is able to collect exact x, y and z coordinates of specified points and hence is able to tract the slope movement at the targeted locations. The data appears as a point cloud which can be rotated, filtered and coloured as required. The data can be exported in ASCII format thus can be brought into AutoCAD or other software. The point clouds are very useful for volume calculations and visually analysing the state of the pit slope. More importantly, the point clouds are compared, point by point, and progressive slope movement is calculated and plotted. A photograph of the scanned region can be displayed and the movement is overlaid in various colours. Contour plots can be made of the movement data and alarms can also be set up.

- Digital photogrammetry- Digital photogrammetry is used for predicting where future failures may occur. Suitable software tools enable mapping of dangerous and inaccessible locations.

Large scale areas can be quickly mapped and it provides an excellent record of the changes in pit faces over time. Any normal high resolution digital camera may set up on a tripod and its position is surveyed with maximum accuracy. Digital image is taken of the face in question, which must include a surveyed reference point of some type. The tripod is then moved to a new location with fixed known distance (e.g. 50 m), its position is surveyed and a second digital image is taken of the same face satisfying an overlap of 90%. This can be repeated for all the areas on the slope. These are then combined and converted into a 3D image which is accurate to 1 degree orientation. The 3D image is made up of 2 parts – a 3D point cloud and a 3D photograph. The obtained readings will often be more accurate.

- Radar monitoring- A slope stability radar (SSR) may provide early warning of rapid brittle failures that is imminent at a particular location of the slope and may appear to occur instantaneously. The SSR scans a 10,000 m^2 area in one minute and thus can provide early warning of any imminent failure for evacuation purposes. SSR can scan almost 24 hours a day, in all weather conditions from a position on the crest. This is a mobile setup which may be quickly positioned at different locations depending on the need. Additionally, a camera is fixed to the dish and photographs can be taken whenever required. Once set up and turned on, the SSR takes some photographs which are converted to a mosaic of the entire area that it can see and scan. The singe scan time is dependent on the size of the slope area and the distance from the slope. The operator can also mask out areas that could cause false alarms for example where trucks and shovels are operating or where loose material is situated. Suitable alarms are there to alert the geotechnical engineers of potential / urgent problem and evacuation of the risky area in the area follows. When movement exceed the set limits then a red flashing alarm screen appears with instructions on what the operator must do. At the same time, SMS's are sent out to all members of the geotechnical division. Thus this ensures that the workers are notified of imminent failure and can evacuate without the communication from the control room.

9.0 Conclusions and recommendations

The slope stability analysis of the pit slopes and dump slopes in mines are done using Morgenstern-Price method. The FOS values of the studied structures were estimated in different loading conditions. The FOS values for the all the sections analyzed have shown mixed effect. Some of the pit slopes

such as A-A`, B-B` and C-C` are found to be safe as the values are above the reference value of 1.5 for long-term stability. However, the pit slope sections like D-D`, E-E`, F-F` and G-G` are unstable from long-term stability point of view. On the other hand, the dump slopes (both external and internal) are found to be safe.

a) The external dumps can be heightened up to 90m height and internal dump up to 180m height, maintaining the suggested design parameters. The external dump slope configuration shall have 30 m individual bench height and 20 m bench width. This provides sufficient space for plantation. It is recommended that simultaneous revegetation of dump slope should be carried out wherever possible.
b) The distance of the toe of the dump from the coal edge should be at least 100 meters.
c) The dump should be regularly inspected for physical indicators viz. tension cracks, slope bulging, floor heaving, boulder movement etc along with any of the suggested slope monitoring scheme.
d) Further, all measures should be taken to prevent accumulation of water in the dumps so that pore water pressure does not induce significant forces on the slopes. Sufficient precautionary measures to be taken for preventing soil erosion on the slope of the dumps.
e) Proper channeling of water from dump stack should be done and water should be treated before discharging into local water bodies.
f) Special precautionary measures might be taken to keep all the slopes stable. This may include
   i) continuous monitoring of the slope surface
   ii) possible flattening of the slopes
   iii) reducing seismic loading by control blasting, avoidance of heavy vehicle movement etc.
   iv) measures for preventing water accumulation in the dumps.

Additionally, the DGMS(Tech.) Circular No. 02 of 2020 dated 09/01/2020 for Guidelines for Systematic Monitoring of Slopes in Opencast Coal and Metalliferous Mines have also been considered for the present study. The comments for the present OCM in regards to the monitoring activities as suggested by DGMS circular are provided below.

Monitoring Methodology

The detailed level of various monitoring methodologies available have been mentioned in the earlier sections. It has been observed that the mine authority does carry out the following steps for monitoring:

1. Using visual inspection of some of the critical portions prone to slope failure, at regular intervals.

2. Using total station based data, which is captured at certain time intervals, to interpret the deformations, if at all present.
3. Using visual inspection of tie-threads between pegs placed on opposite sides of visual cracks. The inter-peg distances are regularly monitored for noticing observable deformations if any.

However, the IIT KGP study team suggests the following:

1. The mine authority should have a proper recording of the distance (i.e., displacement) measurements vis-a-vis the occurrences of any (major or minor) deformations / failures of the slope surfaces. These records need to be analysed for understanding the threshold values which may be used as inputs for the next level of analyses.

2. These data would definitely help in timely withdrawal of man and machinery from the working face or from its vicinity, where imminent deformation(s) may be estimated.

IIT KGP Study team thus suggests that the mine authority should take up the best suited method for monitoring the slopes from time-to-time, which is really based on aspects of safety and production at the same time the cost involvement in its procurement and maintenance.

The recorded data along with the ancillary information need to be properly stored for any future requirements for data-analyses. These require a really dedicated team of the mine authority for monitoring the slope health while maintaining the production. The data collected and stored by this mechanism would be very fruitful in determination of the potential levels of impending failure conditions in the different structures of the mine. The IIT KGP study team would be definitely willing to help in the data-analyses for coming up with identifications of these trigger points like warning level, withdrawal levels etc.

The mine authority would be then coming up with the development of a proper trigger action response plan (TRAP) based on the detailed level of understanding and interpretation of the collected data. A minimum of 3 months data would be required for carrying out these settings, whereas a minimum of one failure conditions must be studied (if any) using the mine authority's setup for modifications of the trigger points.

<u>Recording and analysis of observational data</u>

The IIT KGP study team would be suggesting the mine authority to go for an electronic recording system with proper data protection in terms of loading, collection, storing and retrieval from a centralized server system (with a suitable backup facility). This would prevent the tampering / manipulation of the data as well as possible loss of the same due to some unwanted incidents.

The handling of these data servers would be carried out by some responsible and dedicated officials who would have access to analysis of these data and the officials of the mine would be specially delegated by the administration. If needed the IITKGP study team would help the mine authority to setup the same and work for some initial 3 to 6 months so that mine authority develops expertise.

References

1. S. E. I. P. Ltd, "Leachate Study of Overburden Dumps & Mineral Storage Areas," 2012.
2. S. K. Reddy and A. R. Babu, "Stability analysis of an open pit slope," in Recent Advances in Rock Engineering, 2016.
3. S. B. Mickovsk, E. Cammeraat and R. van, Slope Stability and Erosion Control: Ecotechnological Solutions, 2008.
4. Morgenstern, N.R., and Price, V.E. 1965. The analysis of the stability of general slip surfaces. Géotechnique, 15(1): 79-93.
5. Morgenstern, N.R., and Price, V.E. 1967. A numerical method for solving the equations of stability of general slip surfaces. Computer Journal, 9: 388-393.
6. Zhu, D.Y., Lee, C.F., Qian, Q.H., and Chen, G.R. 2005. A concise algorithm for computing the factor of safety using the Morgenstern-Price method. Canadian Geotechnical Journal, 42(1): 272-278.
7. Cir (Tech.) (S & T) 2 Dt. 20.06.2001 to all coal mines
8. Cir (Tech.) (S & T) 2 Dt. 20.06.2001 to all coal mines
9. Regulation 106 of CMR 2017
10. Regulation 108 of CMR 2017
11. The DGMS(Tech.) Circular No. 02 of 2020 dated 09/01/2020.

Appendix

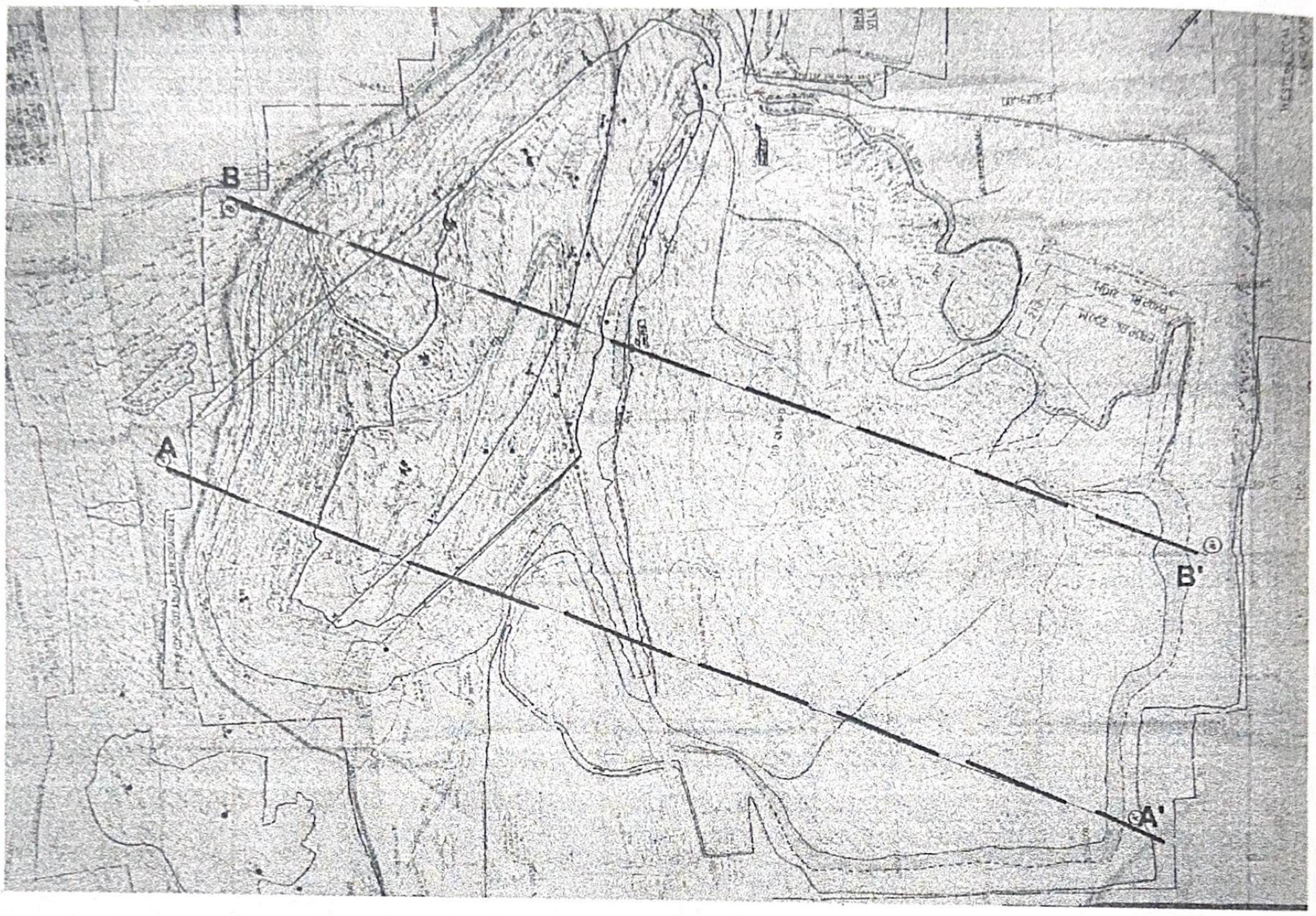

Figure 21: The mine plan with the locations of the key sections studied in the present investigation.

WESTERN COALFIELDS LIMITED
Empowering India
Coal India
Nurturing Nature
Enabling Life
BHATADI OPENCAST MINE

WESTERN COALFIELDS LIMITED
OFFICE OF THE GENARAL MANAGER
CHANDRAPUR AREA
PO: BABUPETH, DISTRICT: CHANDRAPUR, MAHARASTRA-442403

Ref. No.:- WCL/CHA/AGM/ASO/19/ 840

Date:-08.06.2019
09

To,
The Director
IIT, Kharagpur - 721 302

Attention: Asst. Prof. Koushik Dey.
Department of Mining Engineering,
IIT, Kharagpur

Sub : Work order for the work of Scientific study for compliance of CMR- 2017, Reg. 106 (2) Method of working, ultimate pit slope, dump slope and monitoring slope stability at Bhatadi OCM & Hindustan Lalpeth OCM of Chandrapur Area, WCL

Dear Sir,

With reference to your offer DT. 17/05/2019 against our enquiry letter No. WCL/ CHA/AGM/ ASO/2019-20/384 Dt. 2/3-05-2019 for the work of Scientific Study related to compliance of CMR- 2017, Reg. 106 (2) Method of working, ultimate pit slope, dump slope and monitoring slope stability at Bhatadi OCM & Hindustan Lalpeth OCM of Chandrapur Area, WCL, we hereby award the subject work with the following terms and conditions:-

A. Scope of work

Job; Conduct a Scientific study for compliance of CMR- 2017, Reg. 106 (2): Method of working, ultimate pit slope, dump slope and monitoring slope stability.

1. Assesment of method of working.
2. Assesment of Pit slope stability and formulation of Pit slope designs.
3. Recommendations on optimum pit slope design, better mine safety with regard to slope stability and safe mine working near fault plane/ any other geological disturbances.
4. Stability analysis of existing dump slopes and their optimum design.
5. Suggesting suitable method of monitoring to be adopted by the mine management as per the new provisions of Reg. 106 of CMR 2017.
6. Number of external dumps two and one internal dump at HLOC and two External dumps, two internal dumps at BOCM.
7. The duration of study will be within **Ninty days, including submission of reports.**
8. WCL shall provide accomodation and local transportation at Chandrapur Area.
9. If required not more than 50% of the estimate amount shall be paid as an advance.
10. If required the DGMS may be appraised before submission of report.

B. Methodology of the study

1. Sample collection from the OB benches and coal benches and dumps.
2. Testing of samples for determination of Geotechnical properties.
3. 3 critical cross sections provided by the mine management to conduct slope stability study for ultimate pit and dump slopes each.
4. outputs of locally conducted reconnaissance survey, contour map survey, topographical survey, hydrogeological surveys, L-section and cross-section.
5. IIT Study team will carry out suitable modelling for stability status of the dumps (internal and external) and based on the output of the study detailed reporting would be done.
6. Preparations of execution and monitoring systems for these dumps & OB benches
7. Submission of final report covering all above points

Scanned with OKEN Scanner

C. **Facilities to be provided by WCL**

1. Assistance for data collection and field work will be provided.
2. local hospitality will be provided for the study team.
3. No logistics shall be provided for the study.

D. **Duration of the study.**

Three Months from zero date i.e. receipt of work order by IIT, Kharagpur. However report is expected at the earliest possible.

E. **Terms and Schedule of payment**

Break-up of Cost estimate

Consultancy fee by IIT, Kharagpur Rs. 9,00,000 + 18% GST Rs 1,62,000 = Rs 10,62,000/-
50% of Total Rs. 10,62,000/- (Rs. Ten Lacs Sixty Two thousand only) = Rs 05,31,000/-
(Five Lakhs thirty one thousand only) (**TDS will not be deducted at source**) as an advance may be paid along with work order.

The bank and other details of IIT, Kharagpur is as flows :-

Name of Beneficiary	: SPONSORED RESEARCH & INDUSTRIAL CONSULTANCY, IIT, KHARAGPUR
Address.	: Indian Institute of Technology, Kharagpur Department of Mining Engineering, Kharagpur – 721 302
Bank Name	: Sindicate Bank
Bank Account number	: 95562010000805
IFSC Code	: SYNB0009556

As per the above terms of payment, Rs. 5,31,000/- is being made through EFT. Please acknowledge the receipt of the same to the email id. asochandrapur@gmail.com.

Acceptance of order : Acceptance of this work order shall be communicated to Area General Manager, Chandrapur Area immediately on receiving of advance payment to the email id gmwclcha@gmail.com followed by hard copy.

Thanking you.

Yours faithfully,

Area General Manager
Chandrapur Area

CC to :-

1. General Manager (S&C), WCL, NGP
2. General Manager (Opn), CHA
3. Sub Area Manager PSA/ HLSA
4. Area Safety Officer, CHA
5. AFM, CHA - BC No RB/CHA/Area/E&M – other stores/ Safety Dt. /07/34/2019-20. For Rs. 5,31,000/- (Rs. Five Lakhs thirty one thousand only), Dt.08-06-2019
6. Manager, BOCM, & HLOCM, CHA

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वेस्टर्न कोलफील्ड्स लिमिटेड

Western Coalfields Limited

(A Subsidiary of CIL)**Office of the Area General Manager,**

Chandrapur Area, Dist : Chandrapur (M.S.), 442 403

वेकोलि / चंक्षे / क्षेमप्र / क्षेसंअ / 2.0 / 834 दिनांक :20.03.2020

To,

The Sub Area Manager,
Padmapur sub Area
Chandrapur Area

Sub : Work Completion Certificate .
Ref.No.: IIT/KGP/MIN/DC/2019-20/WCL/Feb.03, dt. 28.02.2020

Dear Sir,

With ref to above subject Please find enclosed here with the xerox copy of Work Completion Certificate of Scientific Study of (ultimate pit slope, dump slope & monitoring of slope stability) Bhatadi opencast mine of Chandrapur Area done by IIT, Kharagpur.

This is for your kind information. & necessary action at your end.

Encl : Xerox copy of work completion certificate(orginal copy is with Hindusthan lalpeth sub area if required)

Area Safety Officer,
Chandrapur Area

CC to :-
: AGM, CHA --- for kind information.
: GM (S&C), WCL, NGP
: GM (Op), CHA

Scanned with OKEN Scanner

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पत्रा. वे.कोलि., चन्द्रपुर क्षेत्र, पो.बाबूपेठ, जिला. चन्द्रपुर,
महाराष्ट्र, पिन: 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xii(e)

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding top soil management)

On behalf of M/s Western Coalfields Limited, Chandrapur Area, we undertake that we shall undertake *that no damage shall be caused to the top-soil and the user agency will follow the top soil management plan* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

(Condition No.xii - e)

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC MINE

TOP SOIL MANAGEMENT PLAN

SCOPE

The Topsoil Handling Procedure (THP) applies to all project activities that are likely to cause disturbance to existing topsoil within the Mine Lease area. This procedure should be implemented inconjunction with other management plans like Sediment and Erosion Control Plan, Waste Management Plan, & Mine Closure Plan etc.

Top soil will be stacked properly with proper slopes at earmarked site with adequate measure and shouldbe used for reclamation and rehabilitation of reclaimed areas.The top soil and external overburden shall be removedseparately and stored in a separate heap, **duly covered with grass and vegetation** or utilized for reclamation of mined out area.Internal overburden shall be utilized for backfilling of mined out area. The backfilled area shall be biologically reclaimed. Checkdams shall be constructed at strategic points in order to guide all surface runoff water containing sediments for settlement ofsuspended solids before discharge on land or any surface water body during monsoon.

TOPSOIL GEOMETRY

To maintain a maximum level of biological activity, the topsoil heaps should be constructed as follows

1- To provide maximum surface area.
2- To have slope capable of avoiding erosion and gully formation.

SLOPE

A slope of 1:3 (i.e. 18.5 Degree to Horizontal)

GUIDELINES FOR IMPLEMENTATION OF TOP SOIL HANDLING PROCEDURE:

All personnel from top management to contractor companies involved in mining projects need to be aware of, and are required toabide by the Topsoil Handling Procedure. The responsibilities of persons at different level of management include thefollowing:

□Ensure the Topsoil Handling Procedure and its contents are communicated and enforced throughout the Project leasearea and its entire project life.
□Review and approve the Topsoil Handling Procedure.
□Ensure appropriate surveys are undertaken by employees or contractors prior to stripping.
□Designate the areas for topsoil storage.
□Determine lengths and width and height of topsoil stockpiles.
□Ensure topsoil quality is analyzed in a laboratory approved by State Pollution Control Board.
□Provide job instructions for employees and contractors as per necessity with the purpose to raise Environmentalawareness and ensure effective operations of the workers involved in the earthworks.
□Review and amend the Top soil handling procedure (THP) with respect to legal compliance with Internationalstandards and Indian laws, Environmental clearance conditions, Consent to Operate Conditions, other regulations andstandards.

The legal requirements and amendments relevant to the subject will be communicatedwith the Mines Manager,Environmental Manager and Supervisor for implementation.

□Ensure specialist advice on topsoil handling is communicated to Heavy Earth Moving Machineries (HEMM) operatorsand project managers.

□Ensure contractors are inducted with site requirements applicable in this plan.

□Verify topsoil is removed and stockpiled in accordance with the Top soil handling procedure (THP).

□Conduct regular inspections of topsoil stockpiles and ensure they are properly demarcated.

□Ensure soil is stripped and relocated in accordance with a particular work plan and as specified in the LandDevelopment Plan for proposed works.

□Keep records of topsoil movement and storage.

□Perform topsoil stockpile quality monitoring & Communicate results of the topsoil quality monitoring with Regulatory authorities in a timely manner.

EARMARKED PLACE OF TOPSOIL STORAGE

As per the Stage-wise Land Use and Reclamation given in the approved Project Report, 40.20 Ha area had been earmarked for Temporary Top Soil Dump. This area is located at the North Western part of the mining lease with the following GPS co-ordinates

GPS Coordinates of Top Soil Dump		
Sr.No	**Latitude**	**Longitude**
1	20° 3'55.38"N	79°15'30.46"E
2	20° 3'48.73"N	79°15'52.75"E
3	20° 4'8.69"N	79°15'53.12"E
4	20° 4'16.97"N	79°15'34.81"E

MONITORING ORGANISATION

To have a close watch on the environmental condition and implementation of the various measures suggested, a multi-discuplinary approach is being followed.

WCL, has an Environment Deptt. headed by General Manager (Env.) at its HQs. The department acts as an apex body which supervises and provides necessary support that are required for environmental management of various mining projects under the jurisdiction of the company.

(a) Area General Manager of the Chandrapur area coordinates the activities of various disciplines in the area to render all necessary assistance at the implementing level i.e. Project.

(b) Area Nodal Officer (Environment) monitors all aspects of environment on behalf of the Area General Manager. He will also take suitable steps for generation of environmental data along with CMPDI team for its analysis and interpretations.

(c) Project Officer is responsible for mechanical reclamartion of the area. He is also responsible for biological reclamation with the assistance of GM's office.

ORGANISATION FOR MANAGEMENT

Sl.No.	Measures / Action		AGENCY
1	Environmental Control	1	General Manager, Chandrapur Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	SAM / Project Officer, Bhatadi Sub Area
		4	Staff Officer, Civil, Chandrapur Area
		5	Environment Cell, WCL HQ

2	Environmental Monitoring	1	General Manager, Chandrapur Area
		2	Staff Officer, Civil, Chandrapur Area
		3	Area Nodal Officer (Environment), Chandrapur Area
		4	SAM / Project Officer, Bhatadi Sub Area
		5	Environment Cell, WCL HQ
3	Reclamation	1	SAM / Project Officer, Bhatadi Sub Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	Colliery Surveyor
		4	Environmental Supervisor
		5	Horticulturist

21/04/25

(Harshad Datar)
Area General Manager
Chandrapur Area

(Punam Z Dhoble)s
Sub Area Manager
Bhatadi Sub Area

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

Place: Chandrapur
Date: 21-04-2025

Condition No. xiii 93
ANNEXURE-V

F.No. 43015/28/2017-LAIR(Vol.II)
Government of India
Ministry of Coal

Lok Nayak Bhawan, New Delhi-110 003
Dated the 11th December, 2019

To

The Chairman-cum-Managing Director,
Western Coalfields Ltd.,
Coal Estate, Civil Lines,
Nagpur-440001.

Subject: Acquisition of forest land under Coal Bearing Areas (Acquisition & Development) Act, 1957 and applicability of provisions of MMDR Act, 1957 along with MC Rules, 1960 over the land/ rights acquired under Coal Bearing Areas (Acquisition & Development) Act, 1957.

Sir,

I am directed to refer to WCL's letter No.WCL/MP(L/R)/MK/750 dated 9.10.2019 and WCL's letter No.WCL/GM/L&R)/AK/491 dated 16.05.2018 on the above mentioned subject. The requisite clarification of Ministry of Coal in the matter is as under:-

By virtue of the provisions of section 10 and 11 of the Coal Bearing Areas (Acquisition and Development) Act, 1957, the land or the rights in or over the land acquired under the Act vest absolutely with the Central Government or the nominee, that is, a Government Company. The land gets vested in the Central Government on the publication of notification under Section 9 and thereafter in the Govt. Company on the publication of declaration under Section 11(1) of the ibid Act. Accordingly, since the land acquired under the Act vests absolutely in the Government Company, there is no necessity for execution of Mining Lease with the State Government. The issue of requirement of Mining Lease in case of lands acquired under CBA Act has been settled by Hon'ble Supreme Court in Bharat Coking Coal Ltd Vs. State of Bihar [1987 (Suppl) SCC 394], wherein the Court observed that "once the acquisition is made under the Coal Bearing Areas (Acquisition and Development) Act, 1957, requisite declaration was issued by the Central Government, it was not open to the State Government to grant Lease as the land vests in the Central Government". The said findings of the Hon'ble Supreme Court has also been followed by the Division bench of High Court of MP in Western Coalfields Limited and Ors vs State of MP and Anr (AIR 2007 MP 75).

2. Since the subject land was acquired under the CBA(A&D) Act, 1957 and vests absolutely in the Government Company, neither the execution of mining lease with the State Government is required as per statute nor there is any necessity as it was not open to State Government to grant lease and therefore provisions of MMDR Act, 1957

RS Saini

along with the Mineral Concessions Rules, 1960 does not apply over the land/rights acquired under CBA(A&D) Act, 1957. Therefore the land in respect of Tawa-II UG, Satpura-II UG, Shobhapur UG mine of Pathakhera area and similar acquisition of WCL acquired under Section 9(1) of CBA (A&D) Act, 1957, the provisions of MMDR Act, 1957 and MC Rules, 1960 does not apply.

Yours faithfully,

R S Saroj

(Ram Shiromani Saroj)
Deputy Secretary to the Government of India
Tel: 011-24616989

Copy to the following for necessary action:-

1. Shri Sandeep Sharma, AIG of Forests(FC), Ministry of Environment, Forest and Climate Change, Forest Conservation Division, Indira Paryavaran Bhavan, Aliganj, Jorbagh Road, New Delhi-110003.
2. The Principal Secretary, Government of Maharashtra, Department of Land Resources and Minerals, Mantralaya Mumbai.
3. The Principal Secretary, Government of Madhya Pradesh, Department of Mines and Minerals, Vallabh Bhavan, Secretariat, Bhopal.

R S Saroj

(Ram Shiromani Saroj)
Deputy Secretary to the Government of India

केवल नागपुर कोर्ट के अधिकारक्षेत्र में

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.कोलि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xiv

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding Gap plantation and soil and moisture conservation activities)

it is to inform that, No suitable forest land as contemplated in this condition, is available within the 100m from outer perimeter of the mining lease area.

On behalf of M/s Western Coalfields Limited, Chandrapur Area we herewith undertake that *gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 meters from outer perimeter of the mining lease either by WCL or through State Forest Department* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन: 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xv

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding desilting of village tanks and other water bodies)

On behalf of M/s Western Coalfields Limited, Chandrapur Area we herewith undertake that *the WCL shall regularly undertake desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per approved plan to mitigate the impact of project on such tanks/water bodies* for which Stage I Forest Clearance accorded by the vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

(Condition No.xv)

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC MINE (BOCM)

DE-SILTING OF VILLAGE TANKS & WATER BODIES WITHIN 5 KM RADIUS OF BOCM

SCOPE

As per the Stage I Condition No.xv - De-silting of Village tanks & Water Bodies will be carried out to mitigate the impact of mining activities. The dust generated due to the mining operations usually suppressed by dust control measures such as water sprinklers,

The Topsoil Handling Procedure (THP) applies to all project activities that are likely to cause disturbance to existing topsoil within the Mine Lease area. This procedure should be implemented in conjunction with other management plans like Sediment and Erosion Control Plan, Waste Management Plan, & Mine Closure Plan etc.

Top soil will be stacked properly with proper slopes at earmarked site with adequate measure and should be used for reclamation and rehabilitation of reclaimed areas. The top soil and external overburden shall be removed separately and stored in a separate heap, **duly covered with grass and vegetation** or utilized for reclamation of mined out area. Internal overburden shall be utilized for backfilling of mined out area. The backfilled area shall be biologically reclaimed. Check dams shall be constructed at strategic points in order to guide all surface runoff water containing sediments for settlement of suspended solids before discharge on land or any surface water body during monsoon.

WCL has identified 04 Waterbodies/Village Tanks within the 05 Kilometer area of Mine lease boundary namely, Tirwanja Mokasa Talav, Chak Tirwanja Nallah, Warwat Talav and Masala Tukum. Erai River also passing through the Bhatadi OC Project. During the monitoring process, if any silt deposition is found it shall de-silted in consultation with State Government / Irrigation Departmnet as and when required. GPS Co ordinates of identified water bodies are as Follows

S.No	Name of Village Tank / Water Body	Latitude	Longitude
1	Tirwanja Mokasa Talav	20° 3'46.82"N	79°15'23.04"E
2	Chak Tirwanja Nallah	20° 2'45.63"N	79°16'20.12"E
3	Warwat Talav	20° 3'4.27"N	79°20'14.61"E
4	Masala Tukum Talav	20° 2'47.79"N	79°19'48.91"E

A google plan showing the mining lease area of Bhatadi Expansion OC Project,5 kilometer radius area and the proposed village tanks / water bodies for de-silting is enclosed along with this plan as **Annexure –**

WCL regularly paying Royalty and District Mineral Fund which will be used for various purposes aimed at improving the welfare of communities, development, and managing the impacts of mining activities. One of the key uses of royalty & District Mineral fund collected from coal mining includes, **Environmental Management and Rehabilitation**. Detail of latest Royalty & DMF enclosed for reference.

- The royalty funds are used to address the environmental impact of coal mining, such as land reclamation, afforestation, and the restoration of ecosystems damaged by mining activities.
- It helps in funding projects aimed at controlling air and water pollution, soil conservation, and preventing further degradation of mining areas.

- District Mineral Fund is used for the reclamation and rehabilitation of land that has been degraded due to mining activities. This includes activities such as reforestation, land reclamation, and the restoration of water bodies.

MONITORING ORGANISATION

To have a close watch on the environmental condition and implementation of the various measures suggested, a multi-discuplinary approach is being followed.

WCL, has an Environment Deptt. headed by General Manager (Env.) at its HQs. The department acts as an apex body which supervises and provides necessary support that are required for environmental management of various mining projects under the jurisdiction of the company.

(d) Area General Manager of the Chandrapur area coordinates the activities of various disciplines in the area to render all necessary assistance at the implementing level i.e. Project.

(e) Area Nodal Officer (Environment) monitors all aspects of environment on behalf of the Area General Manager. He will also take suitable steps for generation of environmental data along with CMPDI team for its analysis and interpretations.

(f) Project Officer is responsible for mechanical reclamartion of the area. He is also responsible for biological reclamation with the assistance of GM's office.

ORGANISATION FOR MANAGEMENT

Sl.No.	Measures / Action		AGENCY
1	Environmental Control	1	General Manager, Chandrapur Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	SAM / Project Officer, Bhatadi Sub Area
		4	Staff Officer, Civil, Chandrapur Area
		5	Environment Cell, WCL HQ
2	Environmental Monitoring	1	General Manager, Chandrapur Area
		2	Staff Officer, Civil, Chandrapur Area
		3	Area Nodal Officer (Environment), Chandrapur Area
		4	SAM / Project Officer, Bhatadi Sub Area
		5	Environment Cell, WCL HQ
3	Reclamation	1	SAM / Project Officer, Bhatadi Sub Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	Colliery Surveyor
		4	Environmental Supervisor
		5	Horticulturist

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

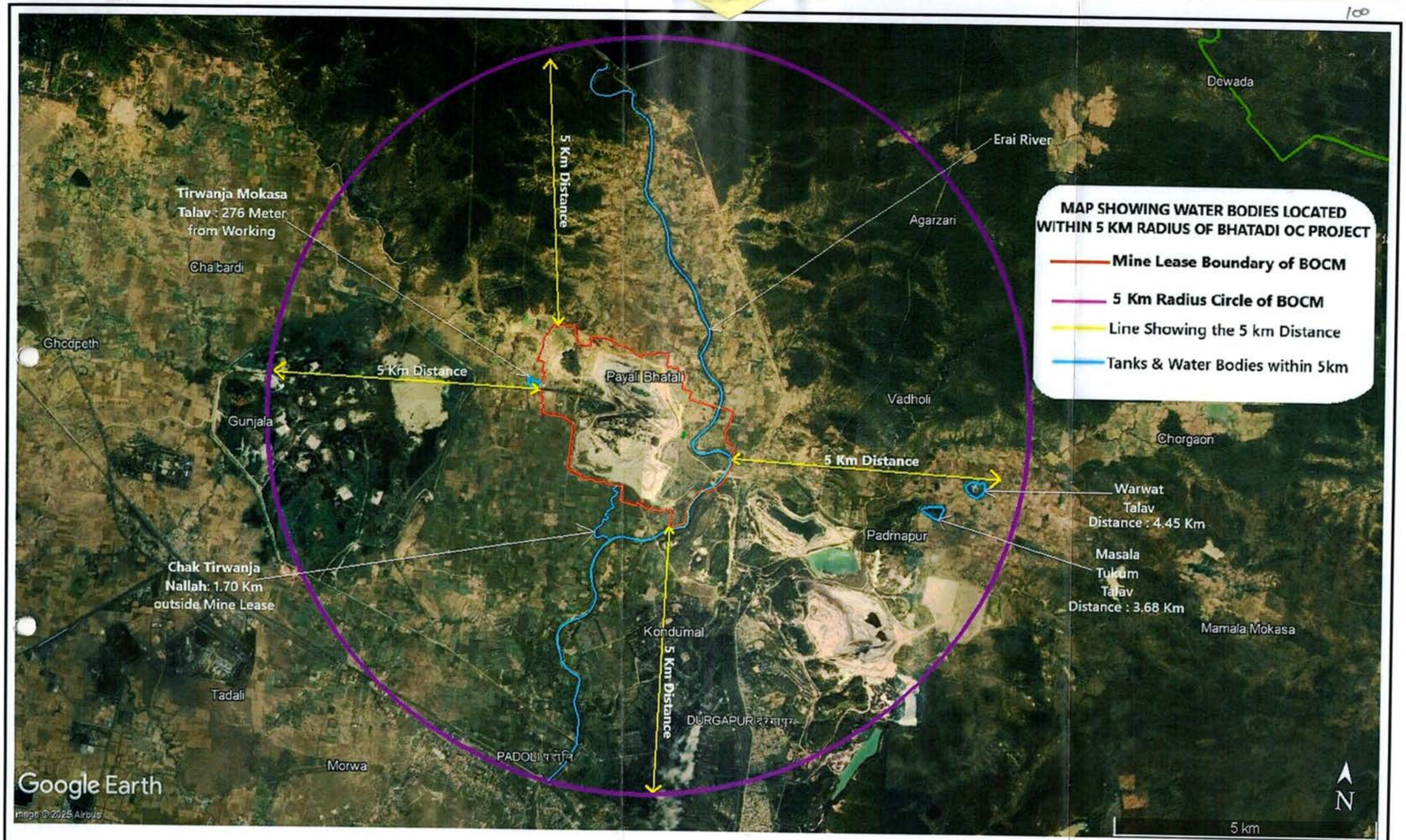
(Harshad Datar)
Area General Manager
Chandrapur Area

21/04/25
(Punam Z Dhoble)
Sub Area Manager
Bhatadi Sub Area

Place : Chandrapur
Date : 21-04-2025

Contribution to State Exchequer by Chandrapur Area

Sl. No.	Year	Royalty Amount (Crores)	DMF Amount (Crores)	NMET Amount (Crores)	Total (Crores)
1	2018-19	125.44	37.63	2.50	165.59
2	2019-20	111.73	33.51	2.23	147.48
3	2020-21	102.13	30.64	2.04	134.82
4	2021-22	148.63	44.59	2.97	196.19
5	2022-23	172.10	51.63	3.44	227.17
6	2023-24	177.04	53.12	3.54	233.7
7	2024-25 (till Jan 25)	136.85	41.05	2.74	180.64
	Total	973.92	292.17	19.46	1285.59



AREA GENERAL MANAGER CHANDRAPUR AREA	AREA PLANNING OFFICER CHANDRAPUR AREA	AREA SURVEY OFFICER CHANDRAPUR AREA	PROJECT PROPONENT/SAM BHATADI SUB AREA	MINE MANAGER BHATADI OC PROJECT	ASST. MANAGER (SURVEY) BHATADI OC PROJECT
	21/4/25	21/4/2025	21/04/25	21/04/25	21/4/2025

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पत्रः वे.कोलि., चन्द्रपुर क्षेत्र, पो.बाबूपेठ, जिला. चन्द्रपुर,
महाराष्ट्र, पिन : 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xvi

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding re-grassing the mining area and restoration of the land)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, *we hereby undertake that after ceasing mining operations, WCL shall undertake re-grassing the mining area and any other areas which may have been disturbed due to mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna, etc.* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited

मिनिरत्न कम्पनी (A Miniratna Company)

कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)

CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र

पता: वे.कोलि., चन्द्रपुर क्षेत्र, पो.बाबूपेठ, जिला: चन्द्रपुर, महाराष्ट्र, पिन : 442304

Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area

Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442304

Fax:07172-255287, Phone: 07172-253322-25

Condition No: xvii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding adequate care to check overburden/dumps)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *adequate care will be taken to check any rolling of overburden/dumps beyond the designated area and to check soil erosion caused due to mining activities* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/2025

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

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क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: डे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला. चन्द्रपुर, महाराष्ट्र, पिन : 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
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Condition No: xviii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding Soil Conservation measures)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *WCL will undertake comprehensive soil conservation measures at the project cost in consultation with the State Forest Department. A scheme of the same submitted against this Condition* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : _____
Place : Chandrapur

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

10349

SCHEME FOR COMPREHENSIVE SOIL CONSERVATION MEASURES

INTRODUCTION

Bhatadi OC block forms the north-western continuity of Durgapur - Padmapur blocks of Wardha Valley coalfield, District: Chandrapur, Maharashtra. The Latitude of the area ranges from N 20°03'50" to 20°05'36" and Longitude of the area is from E 79°15'21" to 79°16'40". The area is covered in the Survey of India Toposheet No. 55 P/4 and P/8. The project is located at a distnce of 14 km from Chandrapur Railway Station.

OBJECTIVE

- To plan mining operations in such a way that **no or minimal** soil degradation and erosion, maintain or improve soil fertility, and enhance water infiltration and storage

THE PLAN

The Bhatadi OC Project of WCL-Chandrapur Area have taken effective precautions as mentioned in their Environment Management Plan and Environmental Clearance Conditions. Environment Clearance obtained for Bhatadi OC Mine from the Ministry of Environment, Forest Clearenace & Climate Change vide letter no. J-11015/151/2014-IA-II(M) dated 13thMarch 2020 for 1.465 MTPA. Bhatadi OC Mine is an ongoing project.According to the EC obtained and as per Environment Management Plan of the Bhatadi OC the following activities have been proposed.We herewith mention several measures which are helpful for soil conservation.

(i) Industrial Effluent Management

The used water from the industrial area comprising CHP, Workshop, Garage etc. may be contaminated with with grease, oil, coal dust, dirt etc. This water will be allowed to settle and suitable treatment will be carried out in oil and grease trap. Thereafter the treated water will be mostly recycled.To avoid any discharge of effluent into natural watercourses, sewage disposal arrangement has been envisaged. Combined Open Surface Drains, Sewerage disposal arrangement for service buildings, Sedimentaion Tank, Chlorinator have been envisged in the approved Project Report of Bhatadi OC Project in Appendix A.8.3.2, A.8.3.3 & A.8.3.4.

Industrial waste water is being collected properly. Workshop effluent treatment plant of 75 KLD capacity having dimensions of 19.20m X 4.50m (2 Nos.) is in operation for excavation workshop. Clear water coming out from the treatment plant is taken into the closed water circuit and recycled for its reuse. All parameter of ETP waste discharge is being monitored regularly as per Env. (Protection) Amendment Rule, 2000

Adequate provisions are made at the workshop ETP, designed as a **zero-discharge system**. All ETP discharge parameters are monitored regularly in accordance with the Environment (Protection) Amendment Rules, 2000 and the same shall be done for expansion project.

(ii) Mine Water

The quantity of mine water pumped out would vary according to the season. The mine water may contatin various impurities like coal dust, traces of grease, oil etc. in various proportions. The mine water would be allowed to collect in the quarry sump where primary settling would take place. The water would then be pumped into secondary settling tanks on the surface. Here the water would be allowed to settle and thereafter part of treated water will be utilized for:

- dust suppression,
- watering of plants,
- washing of HEMM, potable use etc.

For mine discharge water, 2 Nos of Settling tanks of dimension 25.0 m x 9.0 m x 2.5 m , 25.0 m x 12.0 m x 2.5 m has been constructed in such a way that the mine water loaded with suspended solids pass through it before being dischargedtothe nearby natural water courses. The construction of additional 10000GPH capacity setting tank is under process near filtration plant and another 10000 GPH capacity settling tank construction is proposed near CHP of the mine. The existing and the proposed arrangement of mine water treatment is sufficient to take care of the needs of expansion projects.

i) Soil Conservation Via Afforestation Measures

Primary reason for loss of fertility of soil is degradation and Soil erosion which is significantly lower in forested areas. Tree canopies and root systems stabilize the soil. Fine roots bind topsoil, and larger roots anchor it to subsoil layers. As a commitment towards the environmental clearance and green initiatives, adequate numbers of vegetation will be grown on the top surface and slopes of the dumps in order to arrest the erosion of soil and it also reduces surface run-off, which helps averting siltation of natural watercourses.

Afforestation has been carried out over an area of 85.27 Ha with the plantation of more than 256273 nos of trees of different species. Plantation has been carried out on waste dump, road side, near offices & colony.

- External OB dumps
- Roadside areas
- Near offices and colonies

The mine lease boundary is maintained as a **green belt**. Adequate vegetation is grown on dump surfaces and slopes to:

- Arrest soil erosion
- Reduce surface runoff
- Prevent siltation of watercourses
- Maintain natural soil quality

Prevention of Excavated Material Sliding

To prevent sliding of excavated materials:

1. Catch drains are constructed around dumps.
2. Step dumping is practiced.
3. Maximum OB dump height is 90 m with an overall slope of 24°.
4. Each bench (30 m height) is divided into two 15 m tiers with 6 m berms.
5. Dumping areas are cleared of loose material beforehand.
6. Vegetation is grown post-dumping for stabilization.

Slope Stability

As per the approved Project Report, the following measures are adopted:

i. Catch drains / Garland Drains of size 3.5 Meters width & 2.5 Meters depath have been provided at the toe of the waste dumps and soil dums. The Total Length of Catch drains / Garland Drains already made is approximately 5.0 Kilometers.

ii. Catch drain around the dumps for avoiding siltation

iii. For the protection of excavated material sliding down, step dumping procedure is being followed.

iv. A Slope Stability Study was conducted through IIT – Kharagpur for this project. As per the study, maximum height of OB dump proposed above ground level is 90 m. The maximum overall slope of the OB dump would be about 28°.The individual dump bench would be 30 m height and there will be two such benches in the OB dump with a berm of 30 m width in between the two benches. Each individual bench of 30 m height will be made in two tier of 15 m height with a berm of 6 m between these two layers.

v. Before dumping, place of dumping will be made free from loose material.

vi. After completion of dumping operations, dumps will be stabilized by growing vegetation.

FINANCIAL PROVISION IN THE PROJECT REPORT FOR SOIL CONSERVATION MEASURES AND OTHER ENVIRONMENTAL MANAGEMENT INITIATIVES:

Sl. No.	Particulars	Total Amount (In Lakh)
1.	Sedimentation pond for treatment of mine waste water	20.00
2.	Effluent treatment plant for treatment of workshop effluent	14.09
3	Base line environmental data generation and scientific studies related to environment	10.00
4	Installation of fixed type sprinklers for Dust Control	35.00
5	Plantation during First Three years	10.00
6	Digital Mapping for land use plan	8.00
7	Slope Stability Studies	37.50
8	Other Scientific Studies	25.00
	TOTAL	**159.59**

MONITORING ORGANISATION

To have aclose watch on the environmental condition and implementation of the various measures suggested, a multi-discuplinary approach is being followed.

WCL, has an Environment Deptt. headed by General Manager (Env.) at its HQs. The department acts as an apex body which supervises and provides necessary support that are required for environmental management of various mining projects under the jurisdiction of the company.

(a) Area General Manager of the Chandrapur area coordinates the activities of various disciplines in the area to render all necessary assistance at the implementing level i.e. Project.

(b) Area Nodal Officer (Environment) monitors all aspects of environment on behalf of the Area General Manager. He will also take suitable steps for generation of environmental data along with CMPDI team for its analysis and interpretations.

(c) Project Officer is responsible for mechanical reclamartion of the area. He is also responsible for biological reclamation with the assistance of GM's office.

ORGANISATION FOR MANAGEMENT

Sl.No.	Measures / Action		AGENCY
1	Environmental Control	1	General Manager, Chandrapur Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	SAM / Project Officer, Bhatadi Sub Area
		4	Staff Officer, Civil, Chandrapur Area
		5	Environment Cell, WCL HQ
2	Environmental Monitoring	1	General Manager, Chandrapur Area
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3	Reclamation	1	SAM / Project Officer, Bhatadi Sub Area
		2	Area Nodal Officer (Environment), Chandrapur Area
		3	Colliery Surveyor
		4	Environmental Supervisor
		5	Horticulturist

Divisional Forest Officer
Chandrapur Division
Chandrpaur Distirct, M.S

(Harshad Datar)
Area General Manager
Chandrapur Area

21/04/15

(Punam Z Dhoble)
Sub Area Manager
Bhatadi Sub Area

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वेकोलि, चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर,
महाराष्ट्र, पिन : 442304
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Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xix

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding implementation of R & R Plan)

On behalf of M/s Western Coalfields Limited, Chandrapur Area, we undertake that we shall *implement the R & R Plan as per the R & R Policy of State Government in consonance with National R & R Policy, Government of India before the commencement of the project work and implementation. The said R & R Plan may be monitored by the State Government/Regional Office of MoEF along with indicators for monitoring and expected observable milestones* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

Condition No.xix

WESTERN COALFIELDS LIMITED
CHANDRAPUR AREA
BHATADI EXPANSION OC PROJECT

RESETTLEMENT AND REHABILITATION PLAN

The approved project report of Bhatadi Expansion OC Project is having a provision for rehabilitation and resettlement of Bhatadi Village. As per the project report of approved on 13.02.2016, it is estimated rehabilitation of Bhatadi village is involving 820 houses. In order to initiate action plan for Resettlement and Rehabilitation plan, NGO -M/S-National Institute of Women Child and Youth Development,Nagpur was appointedvide W.O.No- WCL/ CHA/ AGM/ GM(OPRN)/AW-41/ NGO/ 6113 dated 28.01.2013 for conducting the Base line socio economic survey of project affected Area, Preparation of Resettlement and Rehabilitation action plan and facilitation and implementation of proposed Resettlement and Rehabilitation action plan for Bhatadi OC Project.

The Rehabilitation &Resettlement Policy ofCoal India Limited has been approved by CIL board on dated 12 March 2012. In the Revised R& R Policy 2012 Resettlement and Rehabilitation committee has to be constituted at project level under the chairmanship of the collector as per article 9 of policy. This R&R Plan The objective of committee is to monitor and review the progress of implementation of Resettlement and Rehabilitation scheme and to carry out post implementation audit broadly as follow:

1. To approve the list of land loser and other PAP
2. To approve the list of person eligible to offer employment as per R&R policy
3. To approve the detail Rehabilitation plan for the project in consultation with displaced person and Gram Sabha.
4. To expedite issue of Domicile Certificate and other necessary documentation requires from state authorities
5. To monitor and review the progress of Rehabilitation scheme , Grant of benefit and handing over possession of land in smooth manner
6. To facilitate the land acquisition process in any other manner as may be required including resolution of disputes
7. To carry out post implementation social audit in consultation with authorities

Hence for implementation of above guide line following team has been proposed vide letter Ref.No- WCL/ CHA/ AGM / PLG / REV / 499dated 27-04-2012

1) Collector, Chandrapur -- Chairman
2) Are a General Manager--- Member
3) Concerned SAM -- Member
4) Area Finance Manager - Member
5) Area personnel Manager- Member
6) Area planning officer- Member
7) Area survey officer - Member
8) Survey officer of the project - Member

R&R package covers the following as per CIL R & R policy 2012:

1. 100 sq. meter plot free of cost at resettlement site or Rs. 3 lakh who are not willing to go to new site.
2. Rs 10,000 per family towards shifting allowance to those families who will settle at new site (option 1).
3. Rs. 15,000 per family having cattle sheds at old site to those families who will settle at new site (option 1).
4. Rs. 25,000/- per artisan/ vender family getting affected to those families who will settle at new site (option 1).
5. Subsistence Allowance @ 25 days MAW per month for 12 months.
6. Development of Layout as per Town Planner Norms and the civic amenities to be provided as per CIL's R&R Policy 2012.
7. Skill development training to enhance the employability and self-employment for the landless affected families
8. Technical Support through reputed NGO

Status of Rehabilitation:

Due to delay in Land acquisition process and delay in getting consent from the Village R&R Committee, the R&R Works of Bhatadi village was stalled. Later, Work Order issued to "Vikalpa" an NGO based at Nagpur for conducting Base Line Socio-Economic Survey of Project Affected Area of Bhatadi Village under Bhatadi OC" vide letter no. WCL/CHA/AGM/PLG/REV/353 dated 17/18.02.2022. After conducting regular meetings and repeated attempts, the Village Rehabilitation Committee and the villagers of Bhatadi Gram Panchayat had given consent for conducting Base Line Survey of Bhatadi Village on 22.09.2023. Accordingly, the Baseline Survey was commenced on 20.10.2023 after 18 months from the issue of Work Order. Time Extension

was given to the NGO for the period of 18 months from 16.02.2024 to 15.08.2026. Copy of the First Time Extension letter dated 15.02.2024.The NGO has submitted a Draft Baseline Survey Report to the WCL on dated 10.10.2024. The same was submitted to the District Collector, Chandrapur District for scrutiny on dated 14.10.2024. Copy of the above letters are being enclosed for kind reference at **Page No.** 109 **to** 110. Once, the eligible PAFs and R&R Plan is approved by the Chairman of the R&R Committee, the same plan will be implemented at the field level.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

E.R. 141689 5
15/02/24

(Under Jurisdiction of Nagpur Court only)

वेस्टर्नकोलफील्ड्सलिमिटेड / Western Coalfields Limited
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Email: agmchandrapur.wcl@coalindia.in
Fax:07172-255287, Phone: 07172-253322-25

संदर्भ सं: वेकोलि/चन्द्रपुर/क्षे.म.प्र./पोचरा/ राजस्व/2023-24/ 433 दिनांक: 15.02.2024

प्रति,

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Pande Layout, Khamla,
Nagpur – 440025.

विषय : Approval of First Time Extension for the work of " Conducting Base line Socio- Economic Survey (BLSES), Of Project Affected Area Bhatadi Village under Bhatadi Expansion Opencast Mine, Chandrapur Area " awarded to M/S Vikalpa.

संदर्भ : 1. LOA No: WCL/CHA/AGM/PLG/REV/336 dated : 31.01.2022.

महोदय,

This is to inform you that First Time Extension for the work of " Conducting Base line Socio-Economic Survey (BLSES), of Project Affected Area Bhatadi Village under Bhatadi Expansion Opencast Mine, Chandrapur Area " for 18 Months from 16.02.2024 to 15.08.2026 has been approved by Competent Authority with right to impose penalty at Final Time Extension.

This is for your kind information.

भवदीय,
15/2/24
अमला अधिकारी (यो/प),
वेकोलि चंद्रपूर.

प्रतिलिपी :

१. क्षेत्रीय महाप्रबंधक, चंद्रपुर क्षेत्र ; उचित जानकारी हेतु ।
२. महाप्रबंधक (प्रचालन), चंद्रपुर क्षेत्र
३. क्षेत्रीय वित प्रबंधक, चंद्रपुर क्षेत्र
४. उपक्षेत्रीय प्रबंधक, पद्मापुर उपक्षेत्र

महाप्र./वरि.नि.सं./संकलन/ ..... दि.....
AGM/Sr.PA/Mov/1934 Dt. 11.10.24

NO. M.S./741/96 UNDER SR ACT 1860, REGT NO. F-5273

VIKALPA

A SOCIETY FOR SUSTAINABLE DEVELOPMENT

Volunteering for Rural Development through S&T and Spiritual Interventions

To,
Area General Manager,
WCL, Chandrapur Area.

Sub. : Submission of Baseline Socio-economic Survey (BLEASE) Report of the Project affected Area of Village Bhatadi , Under Bhatadi Expansion Opencast Mine , WCL , Chandrapur Area .

Ref. :

1. WCL/CA/AGM/Planning/Revenue/ 353 Dt. 17/18-02-2022.
2. WCL/CA/AGM/Planning/Revenue/ 23023-24/433Dt. 15-02.2024.
3. Discussion and presentation of draft BLSES on 13/9/2024

Dear Sir,

With reference to the above letter. the work of the Baseline Socio-economic Survey (BLSES) for the Project affected Area of Village Bhatadi ,under Bhadati Expansion Opencast Mine , WCL , Chandrapur Area was awarded to VIKALPA (NGO) Accordingly Base line survey undertaken as per terms of reference and final draft was deliberated and presented vide reference 3 above.

We are submitting here with the Report of Baseline Socio-economic Survey (BLEASE) for the Project affected Area of Village Bhatadi , Under Bhatadi Expansion Opencast Mine , WCL , Chandrapur Area .

Details of the Report :

1)	Total No. of Properties as per Namuna 8	: 1297	
2)	Total No. of Properties Identified	: 1289	" Annexure I"
3)	Properties Identified but house Owners does not Turned up for filling option forms	: 41	"Annexure II"
4)	List of Properties Un-Identified	: 6	"Annexure III"
5)	Properties unable to tress	: 2	
6)	Govt. Structures and religious Structures	: 14	"Annexure IV"

Thanking You,

367 11/10/24

A.G.M. W.C.L. 10/10/24

Yours faithfully,

VIKALPA (NGO)

Tajne Sahab

Encl . : As above.

Nagpur Office :- 162, Apurva Sahavas Appt., Pande Layout, Khamla, Nagpur - 440025. Ph.:- 0712-2293363, Mob.:-9766665013807
Camp :- Center of Learning of Natural Resources Management, Bawangaon Via Khapa Tal Sawner, District Nagpur.
Website :- www.vikalpa.co.in E-mail :- vikalp.ngonagpur10@gmail.com

Office of the AGM'S
Secretariat
Received on dated 10/10/24

केवल नागपुर न्यायिक अधिकारक्षेत्र में

Under Jurisdiction of Nagpur Court only

वेस्टर्नकोलफील्ड्सलिमिटेड/Western Coalfields Limited

(मिनिरत्न कम्पनी/A Miniratna Company)

कोल इंडिया लिमिटेड की अनुषंगी कम्पनी/A Subsidiary of Coal India Limited

CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र

Office of Area General Manager, Chandrapur Area

Email: agmchandrapur.wcl@coalindia.in

Address: WCL, Chandrapur Area, PO: Babupeth, Dist: Chandrapur, MS, PIN:442403

Fax:07172-255287, Phone: 07172-253322-25

मन्दर्भ सं: वेकोलि/चन्द्रपुर/क्षे.म.प्र./2024-25/ 5378 दिनांक: 14/10/24

To

The Hon'ble District Collector,
Chairman, R&R Committee,
Chandrapur District.

Sub: Determination of Number of legitimate house owners for entitlement of house compensation and R&R benefits against the acquisition of land in Bhatadi Village along wit'i Village vide S O No.2525 dtd. 13.09.2011 u/s 9(i) of Coal Bearing Areas (Acquisition and Development) Act 1957 as per the baseline survey conducted by Vikalp Agency, Nagpur.

Respected Sir,

Land measuring 467.21 Ha. (1154.51 Acres) has been acquired for Bhatadi OC Block, Western Coalfields Limited, Chandrapur Area with all rights in village Paili Bhatadi, Kitadi (Ital) and Chandsurla in Tahsil. Chandrapur and village Tiryanja Chak Tahsil. Bhadrawati & Distt. Chandrapur vide S O No.2525 dtd. 13.09.2011 u/s 9(i) of Coal Bearing Areas (Acquisition & Development) Act 1957 . The said acquisition also involves rehabilitation of project affected families (PAF) residing in Bhatadi Village at new site as per CIL R&R Policy 2012.

Due to several reason the rehabilitation activities were delayed, subsequently in the meeting held under the chairmanship of Hon'ble Member of Legislative Assembly, Ballarpur Constituency on dtd 17/07/2021 and meeting held under the chairmanship of Hon'ble District Collector, Chandrapur District on 26/07/2023 it was decided to conduct the Baseline survey as per present BA record and corelate the data at the time of acquisition and for final determination of number of PAFs and eligibility for R&R benefits and further discussions of abnormalities/ irregularities observed, if any.

Accordingly, the baseline socio-economic survey of Bhatadi Village was done through NGO, Vikalp Nagpur. The data collected through survey and inferences of the same compared to data obtained from various Government departments/ agencies as well as previous BA Grampanchyat records at the time of acquisition / are enclosed herewith and submitted before the Hon'ble District Collector, Chairman R&R Committee, Chandrapur District for further determination of legitimate number of houses/properties eligible for R&R benefits.

Thanking You

Dt: 14/10/24

14.10.2024

14/10/2024

Area General Manager,
WCL, Chandrapur Area.

आवक लिपीक
जिल्हाधिकारी, चंद्रपूर

Copy to:
Deputy Collector, Rehabilitation, Chandrapur District.

No. J-11015/151/2014-IA-II(M)
Government of India
Ministry of Environment, Forest & Climate Change
(Impact Assessment Division)
***

Indira Paryavaran Bhavan,
Jor Bagh Road, New Delhi-110 003

Dated: 13th March, 2020

To,

The General Manager (Environment),
M/s Western Coalfields Ltd.,
Coal Estate, 9th Floor, Civil Lines,
Nagpur - 1 (Maharashtra)
Email: gmenvironment.wcl@nic.in; wclenv@yahoo.in

Sub: Expansion of Bhatadi Opencast Coal Mine from 0.975 MTPA to 1.465 MTPA (Peak) of M/s Western Coalfields Limited in mine lease area of 847.37 ha, located in Village Bhatadi, District Chandrapur (Maharashtra) – Environment Clearance(EC) - reg.

Sir,

This has reference to your online proposal no. IA/MH/CMIN/72758/2018 dated 1st March, 2018 on the above-mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has considered the proposal is for Environmental Clearance for Expansion of Bhatadi Opencast Coal Mine from 0.975 MTPA to 1.465 MTPA (Peak) of M/s Western Coalfields Limited in mine lease area of 847.37 ha, located in Village Bhatadi, District Chandrapur (Maharashtra).

3. The proposal was considered by the EAC in its 52nd meeting held on 24th January, 2020. The details of the project, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported to be as under:-

(i) The project is located in Bhatadi village, in Wardha Valley Coalfields in Chandrapur district. The nearest rail head is Tadali which is about 8 to 9 km away from the mine and Chandrapur Station about 15 km away from the mine. Both the stations are on the main line of Central Railway.

(ii) The project area falls in Survey of India Topo Sheet No.55 P/08 with geographical coordinates ranging from 20^0 02' 27" - 20^0 04' 25" E and longitudes 79^0 15' 18" -79^0 17' 35" N.

(iii) Coal linkage of the Bhatadi OC mainly lies with Thermal Power Plants of MAHAGENCO. In addition to this coal from the mine will be provided to other miscellaneous consumers.

(iv) No joint venture cartel has been formed to operate the mine. Bhatadi OC Expansion Mine Project has been proposed to be operated solely by the M/s WCL.

(v) Project does not fall in the Critically Polluted Area (CPA), where the MoEFCC vide its OM dated 13th January, 2010 has imposed moratorium on grant of Environment Clearance.

(vi) Direct employment to about 474 personnel, it will provide further employments to land losers. Administrative approval for 409 of employment in WCL has been accorded and out of 409, 339 nos. has already been provided employment.

(vii) The project is reported to be beneficial to bridge the gap between demand and supply of non-coking coal for the power houses and other bulk consumers of western region as well as southern part of the country.

(viii) The last EC for Bhatadi OC coal mine from 0.65 to 0.975 MTPA in a total lease area of 847.37 ha with no forest land, was accorded vide letter dated 19th March, 2015.

(ix) Erai River flow in the area of Bhatadi OC Expansion. The proposal for Erai river diversion has been submitted to CDO, Nasik and further action will be taken as per the design of CDO, Nashik & subsequent approval of the State Irrigation Department.

(x) The existing Bhatadi Expansion OC mine has been divided into two quarries namely, quarry-I and quarry-II. Presently quarry-I is being worked whereas area of quarry-II is virgin. The geo-mining parameters of the project are as under: -

S.N	Particulars	Quarry-I	Quarry-II	Total
1	Area of the Quarry			
a)	On floor (ha)	50.870	33.875	84.745
b)	On surface (ha)	88.92	72.60	161.52
2	Depth (m)			
a)	Initial	33	53	
b)	Final	150	150	-
3	Average gradient of Seam	1 in 6	1 in 6	
4	Average thickness of seam (m)	17	17	
5	Average strike length (m)	800	700	
6	Width on surface (m) (Dip Rise)	700	850	
7	Width on floor (m) (Dip Rise)	500	600	-
8	GCV (k Cal/ kg) (Overall)	4504 (G10)		
9	Balance Mineable reserves (Mt) as on 1/4/2017	3.54	9.27	12.81

10	Total OB including Access Trench (Mm^3) as on 1/ 4/2017	19.78	51.07	70.85
11	Average Stripping ratio in m^3/t. as on 1/ 4/2017	5.59	5.51	5.53

(xi) Last 5 years production is as given below *(All figures in Million Tonnes per Annum)*

Year	Coal Production	EC capacity
2019-20 (Upto 31.10.2019)	0.970	0.975
2018-19	0.975	0.975
2017-18	0.639	0.975
2016-17	0.875	0.975
2015-16	0.71	0.975
2014-15	0.71	0.975

The land usage pattern of the project is as follows:

Pre-mining land use details

Sl. No.	Particulars	Tenancy Land	Govt. Land	Forest Land	Total
1	Land Already acquired by existing Bhatadi Expansion OC Mine (ha)	785.69	52.25	0.00	837.94
	Land for Bhatadi Village Rehabilitation to be Acquired (ha)	9.43	0.0	0.0	9.43
	Total	**795.12**	**52.25**	**0.0**	**847.37**

Post Mining land use details

S.N.	Land use during mining	Land use (ha)				
		Plantation	Water Body	Public use	Undisturbed	Total
1	Backfilled Area	50.00	38.92	0.00	0.00	88.92
2	Excavated Area	0.00	72.4	0.00	0.00	72.40
3	Embankment Area	13.00	0.00	0.00	0.00	13.00
4	External OB dump	142.10	0.00	0.00	0.00	142.10
5	Colony, Infrastructure etc.	6.00	0.00	21.60	0.00	27.60
6	Miscellaneous (Blasting zone, river diversion, power line diversion & rationalization	50.00	0.00	0.00	435.47	485.47
7	Road	3.00	0.00	5.45	0.00	8.45
Total (A)		264.10	111.32	27.05	435.47	837.94
Land for Bhatadi Village		0.0	0.0	9.43	0.0	9.43

Rehabilitation to be Acquired (B)					
Grand total (A + B)	264.10	111.32	36.48	435.47	847.37

(xii) Total geological reserve reported in the mine lease area is 45.714 MT with 23.566 MT mineable reserve, out of which 12.81 MT of reserve is extractable reserve with extraction intensity of 95 %.

(xiii) Mining Plan including the Mine Closure Plan for further expansion of the mine for increasing the production capacity from 0.975 MTPA to 1.465 MTPA within the existing land area and without any capital investment has been approved by the WCL Board in its 293rd meeting held on 31/10/2017 vide WCL/BD/SECTT/BM-293/2017/936 dated 10/11/2017.

(xiv) The method of mining would continue to be opencast with Shovel-Dumper combination

(xv) There is two external OB dump with Quantity of 69.708 Mm3 in an area of 142.10 ha with height of 60 m and 1 internal dump with Quantity of 53.75 Mm3 in an area of 88.92 ha. Out of this 88.92 ha, 50 ha would be biologically reclaimed and 38.92 ha would be partially backfilled and converted into water body.

(xvi) The final mine void would be in 111.32 ha with depth of 150 m.

(xvii) Total quarry area is 161.32ha. Out of total quarry area of 161.32ha, 88.92 ha would be backfilled and reclaimed. Out of which 50 ha area shall be reclaimed with plantation. A void of 111.32 ha with depth 150 m which is proposed to be converted into a water body.

(xviii) The balance life of mine is 8 Years as on 01.04.2019

(xix) Transportation: Coal transportation in pit by dumpers, surface to siding by dumpers and loading at siding by pay loaders. Pipe conveyor system for coal transportation is in advance stage of commissioning.

(xx) The details of R&R activities, carried out for the existing project is as follows: -

a) Land acquired under CBA Act, 1957 in the year 1990 is 287.57 ha which includes 278.96 ha tenancy land and 8.61 ha Govt land. Employment provided against this land is 113 no. as per norm.

b) Land acquired under LA act 1897 in the year 2007 is 82.15 ha which includes 78.49 ha Tenancy land and 3.66 ha Govt. land. Employment provided against this land till date is 30 nos.

c) Land acquired under section 9(1) CBA Act, 1957 at 13.9.2011 is 467.21 ha which included 0.30 ha diverted plot area, 426.73 ha. Tenancy land 39.98 ha, Govt. land and 0.20 ha forest land. Administrative approval to 409 cases employment/monetary

compensation has been approved by competent authority. Till date 284 cases of employment and 07 No. cases of M.C. is given and remaining cases of initiated employment/Monetary compensation is in process.

(xxi) Total capital cost of the project is Rs.304.5162 Crores as per PR and no additional capital is required for the present proposal. Cost of Production is Rs.1300.98 per tonne, CSR cost will be Rs. 2 per tonne, R&R Cost will be Rs.79.79 Crore and the capital Environmental Management cost will be Rs. 0.9709 crores.

(xxii) NOC for withdrawal of groundwater from CGWA has been applied vide letter No. WCL/ENV/HQ/20-J & 17-U/263 dated 13.06.2016. NOC for abstraction of ground water for Bhatadi OC have been recommended by CGWB on 11.10.2019. Formal issuance of NOC letter awaited.

(xxiii) Public Hearing conducted on 13.09.2019 at WCL Durgapur Auditorium, Durgapur, Ta. Dist. Chandrapur, Maharashtra State.

(xxiv) Following issues has been raised during the Public Hearing held for Bhatadi OC Expansion Project for increase in Coal production capacity from 0.975 MTPA to 1.465 MTPA within existing EC area of 847.37 Ha. Detailed pointwise compliance report has been submitted to MPCB

a. Rehabilitation of Bhatadi and Payali Village.
b. Balance land acquisition
c. Coal Quality
d. Land Compensation
e. Provision of Employment in lieu of Land acquisition.
f. Pollution Control Measures to be adopted.
g. Plantation
h. CSR works
i. Installation of RO Plant for Drinking Water

(xxv)Total afforestation plan shall be implemented covering an area of 255.64 ha at the post-mining. Density of tree plantation is 2500 trees/ ha of plants.

(xxvi) There is no court cases/violation pending with the project proponent

(xxvii)The existing Bhatadi OC has opened Escrow Account against the existing provisions and till 2018-19, Rs.33.2519 Crores have been deposited in the said Escrow Account

(xxviii) Availability of ground water has been reported to be varying between 3.3 m – 13.28 m during pre-monsoon season and between 0.10 m to 13.15 m during post-monsoon season. Total water requirement for the project has been reported to be 222 KLD

(xxix) One composite seam with thickness ranging between 15.78 – 20.83 meters has been reported to be workable. Grade of coal is G-10, stripping ratio 1:5.53, while gradient is 1 in 6.

(xxx)Method of mining envisages opencast with shovel-dumper combination

(xxxi) Afforestation plan over a total area of 264.10 ha has been proposed to be implemented by the end of mining operations with density of 2500 plants per ha. It is further mentioned that implementation of the Progressive Mine Closure Plan is being taken up by the PP as per the approved Plan and there is no deviation from the approved Plan

(xxxii)The PP has reported no court cases, violation cases are pending.

(xxxiii) The Regional Office (WCZ), Nagpur conducted site inspection of the area to assess the status of compliance of conditions, stipulated in the environment clearance dated 19th March, 2015. The Regional Office, vide letter no. 3-16/2015/3202 dated 5th February, 2018 submitted inspection report along with its observations.

(xxxiv) As per approved Mining Plan, the lease area is 837.94 ha. However, additional area of 20.2 ha, including 0.20 ha of forest land, is also required outside the lease area for the settlement of Bhatadi village. However, the present proposal has been limited to the existing lease area of 837.94 ha as per existing EC

(xxxv)No forest land has been reported to be involved in the project. However, an area of 0.20 ha of forest land is involved in the project which, along with 20 ha of additional land, has been proposed to be acquired for the resettlement and rehabilitation of Bhatadi village.

(xxxvi) The project involves 820 project affected families.

(xxxvii) Transportation of coal in mine pit head has been proposed by dumpers, surface to sidings by tippers at siding by Pay loader. The PP has also mentioned that construction of piped conveyor is in advance stage.

4. The Expert Appraisal Committee in its meeting held on 24th January, 2020 has recommended the proposal for grant of Environmental Clearance. Based on the recommendations of the EAC, the **Ministry of Environment, Forest and Climate Change hereby accords approval for grant of Environment Clearance(EC)** to the project for **expansion** of **Bhatadi Opencast Coal Mine from 0.975 MTPA to 1.465 MTPA (Peak) of M/s Western Coalfields Limited in mine lease area of 847.37 ha, located in Village Bhatadi, District Chandrapur (Maharashtra),** under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto, subject to the compliance of the following terms and conditions and environmental safeguards mentioned below:

(i) Distance from the mine and OB Dump shall be 150 m away from river.

(ii) All additional mitigation measures proposed shall be implemented in 1 year of issue of this letter.

(iii) Project proponent to plant 100,000 nos. of native trees with broad leaves along the periphery of the mine to prevent the effect of air pollution in 3 years of the issue of this letter. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer

(iv) Validity of EC is life of the mine or 30 years whichever is earlier as per EIA Notification, 2006

(v) The project proponent shall obtain Consent to establish from the State Pollution Control Boards for the proposed peak capacity of 1.465 MTPA prior to commencement of the increased production.

(vi) Transportation of coal from Coal Handling Plant shall be through covered trucks.

(vii) To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.

(viii) Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at loading and unloading points, etc.

(ix) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.

(x) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.

(xi) Thick green belt of adequate width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution.

(xii) Efforts shall be made for utilizing alternate sources of surface water, abandoned mines or else whatsoever and thus minimizing the dependability on a single source.

(xiii) The company shall obtain approval of CGWA for use of groundwater for mining operations at its enhanced capacity of 1.465 MTPA.

(xiv) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.

(xv) A third party assessment of EC compliance shall be undertaken once in three years through agency like ICFRI /NEERI/IIT or any other expert agency identified by the Ministry.

(xvi) Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air born of particles

(xvii) The activities and fund provisions for CER shall be made as per the guidelines issued by the ministry regarding CER on 1st May, 2018.

(xviii) Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and also explore deployment of rock breakers of suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to habitation/structures due to blasting activity.

(xix) The Project Proponent shall complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors. State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.

(xx) Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table. The intersecting ground water table can only be commence after conducting detailed hydrogeological study and necessary permission from the CGWA. The Report on six monthly basis on changes in Ground water level and quality shall be submitted to the Regional Office of the Ministry, CGWA and State Pollution Control Board.

(xxi) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of antisnake venom including all other paramedical safeguards may be ensured before initiating the mining activities.

(xxii) Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

(xxiii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.

(xxiv) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.

(xxv)Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional office of the Ministry.

(xxvi) CTE/CTO for the project shall be obtained from the SPCB as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, and the SPCB shall follow the mechanism/protocol issued by the Ministry vide letter no. Q-16017/38/2018-CPA dated 24th October, 2019 while issuing the CTE/CTO for the project, for improvement of environmental quality in the area.

(xxvii) The green belt of at least 5-10 m width shall be developed in more than 40% of the total project area, mainly along the periphery of mine boundary, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.

(xxviii) In addition, the project proponent shall develop greenbelt outside the plant premises such as avenue plantation, plantation in vacant areas, social forestry etc.

(xxix) Monitoring of compliance of EC conditions may be submitted with third party audit every year.

(xxx)The percentage the CER may be atleast 2 times the amount given in the OM dated 1st May, 2018 recommended by the EAC and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.

(xxxi) Effective fugitive emission control measures should be imposed in the process, transportation, packing etc.

(xxxii) Transportation of materials by rail/ conveyor belt, wherever feasible.

(xxxiii) A detailed water harvesting plan may be submitted by the project proponent

(xxxiv) In case, domestic waste water generation is more than 10 KLD, the industry may install STP.

(xxxv) Monitoring of compliance of EC conditions may be submitted with third party audit every year

(xxxvi) PP shall comply all the conditions of earlier EC dated 19th March, 2015 in 3 years from the issue of this letter and submit a copy of compliance to Ministry's Regional Office

(xxxvii) All the recommendation of comprehensive study being conducted by NEERI shall be implemented by project proponent within certain timeline and necessary timeline shall be submitted to Ministry's Regional Office

4.1 The grant of environmental clearance is further subject to compliance of the Standard EC conditions as under:

(a) Statutory compliance

(i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.

(ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.

(iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).

(iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.

(v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.

(vi) Solid/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.

(b) Air quality monitoring and preservation

(i) Continuous ambient air quality monitoring stations as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM_{10}, $PM_{2.5}$, SO_2 and NO_x. 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. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

(ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.

(iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of $PM_{10}/PM_{2.5}$) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

(iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.

(v) Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.

(vi) Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.

(vii) Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

(c) Water quality monitoring and preservation

(i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.

(ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

(iii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

(iv) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.

(v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.

(vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the

drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.

(vii) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).

(viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.

(ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose *viz.* watering the mine area, roads, green belt development *etc.* The drains shall be regularly desilted particularly after monsoon and maintained properly.

(x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.

(xi) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A rivarine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

(d) Noise and Vibration monitoring and prevention

(i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

(ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.

(iii) The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

(e) Mining Plan

(i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.

(ii) Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).

(iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.

(iv) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

(f) Land reclamation

(i) Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).

(ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

(iii) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the "during mining"/"post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.

(iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification

issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEFCC, CPCB and SPCB.

(v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.

(vi) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

(g) Green Belt

(i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.

(ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

(h) Public hearing and Human health issues

(i) Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.

(ii) The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from

workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.

(iii) Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.

(iv) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.

(v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(i) Corporate Environment Responsibility

(i) The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

(ii) The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.

(iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

(v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

(j) Miscellaneous

(i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

(ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

(iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

(iv) The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NOx (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

(v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

(vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

(viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.

(ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

(x) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

(xi) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.

(xii) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

(xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

(xv) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(xvi) The above conditions shall 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, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 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.

5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.

6. The proponent shall 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. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

7. Any appeal against this Environment 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.

8. The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of

time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others.

9. The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble Supreme Court.

10. This Environment Clearance shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.

11. This issues in supersession of the earlier EC granted vide letter dated 19th May March, 2015.

13.3.2020

(Manoj Kumar Gangeya)
Director

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The Principal Secretary, Department of Environment, Government of Maharashtra, 15th Floor, New Admn. Bldg, Madam Cama Road, Mantralaya, Mumbai - 32 (Maharashtra)
3. The Additional PCCF (Central), Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur-1 (Maharashtra)
4. CMD, WCL, Nagpur
5. The Member Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
6. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
7. The Member Secretary, Maharashtra State Pollution Control Board, Kalapataru Point, 3rd & 4th Floors, Sion, Matunga Scheme Road No. 8, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai - 2
8. The District Collector, Chandrapur, Government of Maharashtra
9. Monitoring File 10. Guard File 11. Record File 12. Notice Board

13.3.2020

(Manoj Kumar Gangeya)
Director

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.कोलि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला: चन्द्रपुर,
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Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xxiii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding non-establishment of labour camp in the forest land)

The mining activities of this project are totally dedicated to cater power sector through Chandrapur Super Thermal Power Station at Chandrapur. Hence, the mining activities being carried out on 24 X 7 basis in 3 shifts a day. It is humbly submit that labourers are not staying or sheltered at the project site. Hence, there is no pressure on nearby forest land for firewood.

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we hereby undertake that *no labour camp will be established on the forest land* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

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वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
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Condition No: xxiv

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding demarcation of diverted forest land)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area**, we hereby undertake that *the boundary of the diverted forest land, mining lease and safety zone, as applicable will be demarcated on ground at the project cost, as per directions given in the* Stage I Forest Clearance *(in-principle approval) and* the *layout plan of the proposal will not be changed without the prior approval of the Central Government and the forest land will not be used for any other purpose other than that specified in the proposal* accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

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Condition No: xxv

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding transfer of forest land to other agencies)

On behalf **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *the forest land shall under no circumstances be transfer to any other agency, department or person without prior approval of the Central Government* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्ट के अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
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Fax:07172-255287, Phone: 07172-253322-25

Condition No: xxvi

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding no damage to the flora and fauna of the adjoining area)

On behalf **M/s Western Coalfields Limited, Chandrapur Area,** we hereby undertake that *no damage to the flora and fauna of the adjoining area shall be caused* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र में

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited

मिनिरत्न कम्पनी (A Miniratna Company)

कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)

CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पत्रा. वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबूपेठ, जिला. चन्द्रपुर,
महाराष्ट्र, पिन : 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
Address: WCL, Chandrapur Area, PO: Babupeth,
Dist: Chandrapur, MS, PIN:442304
Fax:07172-255287, Phone: 07172-253322-25

Condition No: xxvii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding complying acts, rules, regulations, guidelines, etc.)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that we shall *comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order(s) and NGT Order(s) pertaining to this project, if any, for the time being in force, as applicable* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

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वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited

मिनिरत्न कम्पनी (A Miniratna Company)

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CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र

पता. वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला. चन्द्रपुर, महाराष्ट्र, पिन : 442304

Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area

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Condition No: xxviii

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding Annual Self-Compliance Report)

On behalf **M/s Western Coalfields Limited, Chandrapur Area,** we hereby undertake that *we shall submit the annual self – compliance report in respect of the Stage II conditions to the State Government, concerned Regional Office and to MoEF & CC by end of March every year* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोर्टके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Court only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited

मिनिरत्न कम्पनी (A Miniratna Company)

कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)

CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता: वे.को.लि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला. चन्द्रपुर, महाराष्ट्र, पिन : 442304
Email: agmchandrapur.wcl@coalindia.in

Office of Area General Manager, Chandrapur Area
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Fax:07172-255287, Phone: 07172-253322-25

Condition No: xxix

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding other conditions of the MoEF & CC)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *we shall comply to any other condition that stipulated by the Ministry of Environment, Forests & Climate Change from time to time, in the interest of conservation, protection and development of forests & wildlife* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur

केवल नागपुर कोटिके अधिकारक्षेत्र मे

Under Jurisdiction of Nagpur Coast only

वेस्टर्न कोलफील्ड्स लिमिटेड / Western Coalfields Limited
मिनिरत्न कम्पनी (A Miniratna Company)
कोल इंडिया लिमिटेड की अनुषंगी कम्पनी (A Subsidiary of Coal India Limited)
CIN-U10100MH1975GOI018626

क्षेत्रीय महाप्रबन्धक का कार्यालय, चन्द्रपुर क्षेत्र
पता. वे.कोलि., चन्द्रपुर क्षेत्र, पो.बाबुपेठ, जिला. चन्द्रपुर, महाराष्ट्र, पिन : 442304
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Office of Area General Manager, Chandrapur Area
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Fax:07172-255287, Phone: 07172-253322-25

Condition No: xxx

Name of the Proposal: Diversion of 0.20 Ha Zudpi Jungle forest land under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 for opencast mining for Bhatadi Expansion Mine Project by M/s Western Coalfield Limited, District Chandrapur in the State of Maharashtra

Proposal No. FP/MH/MIN/17443/2016

Ministry File No. FC-I/MH-341/2023-NGP - I/93661/2025

UNDERTAKING

(Regarding violation of any of the conditions)

On behalf of **M/s Western Coalfields Limited, Chandrapur Area,** we undertake that *we understand that violation of any of the conditions will amount to violation of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and action would be taken as prescribed in para 1.16 of consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 as issued by the Ministry of Environment, Forests & Climate Change on dated 29.12.2023* for which Stage I Forest Clearance accorded vide Order No. FC-I/MH-341/2023-NGP - I/93661/2025 dated 14th Jan 2025 for diversion of 0.20 Ha Zudpi Jungle Forest Land for Bhatadi Expansion Opencast Project, Chandrapur Area.

21/04/25

(Punam Z Dhoble)
Sub Area Manager / Project Proponent
Bhatadi Sub Area

Date : 21-04-2025
Place : Chandrapur