



File No: EC/SEIAA/2026-27/5014/2026

State Environment Impact Assessment Authority (SEIAA), Jharkhand

(Constituted as per the provision of EIA Notification, 2006, as amended by the Ministry of Environment, Forest and Climate Change, Government of India)



Dated: 11/08/2026

To,

Dr Arvind kumar
RCR STEEL WORKS PRIVATE LIMITED
NEAR GANDHI NAGAR, SKY VILLA APARTMENT 401, 4TH FLOOR , KANKE ROAD ,
RANCHI, JHARKHAND 834008, Binja , Hendag, RANCHI, JHARKHAND, 834008
rcrsteelworks@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Patal East (Eastern Part) underground Coal Mine, South Karanpura Coal Field, Ranchi, Jharkhand. ML area 336.38 ha. Rated capacity 0.36 MTPA, Peak capacity-0.5400 MTPA submitted to Ministry vide proposal number SIA/JH/CMIN/541947/2026 dated 04/07/2026.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0102JH5548889N
(ii) File No.	EC/SEIAA/2026-27/5014/2026
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals Patal East (Eastern Part) underground Coal Mine, South Karanpura Coal Field, Ranchi, Jharkhand. ML area 336.38 ha. Rated capacity 0.36 MTPA, Peak capacity-0.5400 MTPA
(vi) Name of Project	RCR STEEL WORKS PRIVATE LIMITED
(vii) Name of Company/Organization	RANCHI, JHARKHAND
(viii) Location of Project (District, State)	SEIAA
(ix) Issuing Authority	no
(x) Applicability of General Conditions	no
(xi) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the SEIAA Appraisal Committee (SEIAA) in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by SEIAA Appraisal Committee of SEIAA in the meeting held on 27/07/2026. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B, Part C EIA, EMP)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
5. The brief about configuration of plant/equipment, products and byproducts and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A, B and C)/EIA & EMP Reports/presented during SEIAA are annexed to this EC as Annexure (1).
6. The SEIAA, in its meeting held on 27/07/2026, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).
7. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEIAA Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. Dr Arvind kumar under the provisions of EIA Notification, 2006 and as amended thereof.
8. The Ministry reserves the right to stipulate additional conditions, if found necessary.
9. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
10. This issues with the approval of the Competent Authority.

Copy To

1. The Member Secretary, CGWA, 18/11 Jamnagar House Man Singh Road, Central, Delhi, cgwa@nic.in
2. The Member Secretary, CPCB, Parivesh Bhawan Cbd-Cum-Office Complex East Arjun Nagar, East, Delhi, mscb.cpcb@nic.in
3. The Monitoring Cell MoEFCC, Compliance & Monitoring Division, Indira Paryavaran Bhawan Jor Bagh Road New Delhi, South, Delhi, moefcc-monitoring@gov.in

Annexure 1

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	An EIA-EMP Report shall be prepared forMTPA peak rated capacity in a mining lease (ML) area ofha based on the generic structure specified in Appendix-III of the EIA Notification, 2006.
1.2	The cover page of the EIA report shall consists of project title with location, applicable schedule of the EIA Notification, 2006, ToR letter No. with date, study period along with EIA consultant & laboratory details with reference of QCI/NABET/NABL accreditation certificate.

2. Introduction About The Project

S. No	Terms of Reference
2.1	Details of the chronology of past EC regarding the project and its implementation status (in case of expansion proposals) shall be provided
2.2	Details of mine plan and mine closure plan approval from Competent Authority should be furnished for green field and expansion projects. Reference of the Vesting Order should also be provided.
2.3	Details regarding project capacity (peak rated capacity in MTPA) and mining lease area (ha), details regarding project proponent and project location (including coalfield / coal block & geographical location), significance/need of the project and coal linkage.

3. Project Details And Description

S. No	Terms of Reference
3.1	Details of mineral reserves, geological status of the mining lease area and the seams to be worked, ultimate working depth, gassiness of seams to be worked and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved peak rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and section should be included.
3.2	Details w.r.t location of the project - Coordinates w.r.t the mining lease boundary (including kml in polygon format) to be provided and submitted as location plan. A toposheet depicting the core zone (mine infrastructural area) and buffer zone (10 kms radius from periphery of the core zone) on 1:25,000 scale. (including all eco-sensitive areas and environmentally sensitive places)
3.3	Details of sensitive environmental receptors (habitation / school / river or water body / forest / areas of archaeological significance, etc.) within 10 kms from the periphery of the core zone shall be provided. Details w.r.t need for diversion of water body / road / railway / transmission lines to be indicated.
3.4	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts on air quality, noise & vibration on account of mineral transportation, coal handling & storage/stockyard, etc. should be provided. Details w.r.t manpower engaged in the project shall also be included.
3.5	Submission of sample test analysis of characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, sulphur and heavy metals including levels of Hg, As, Pb and Cr.

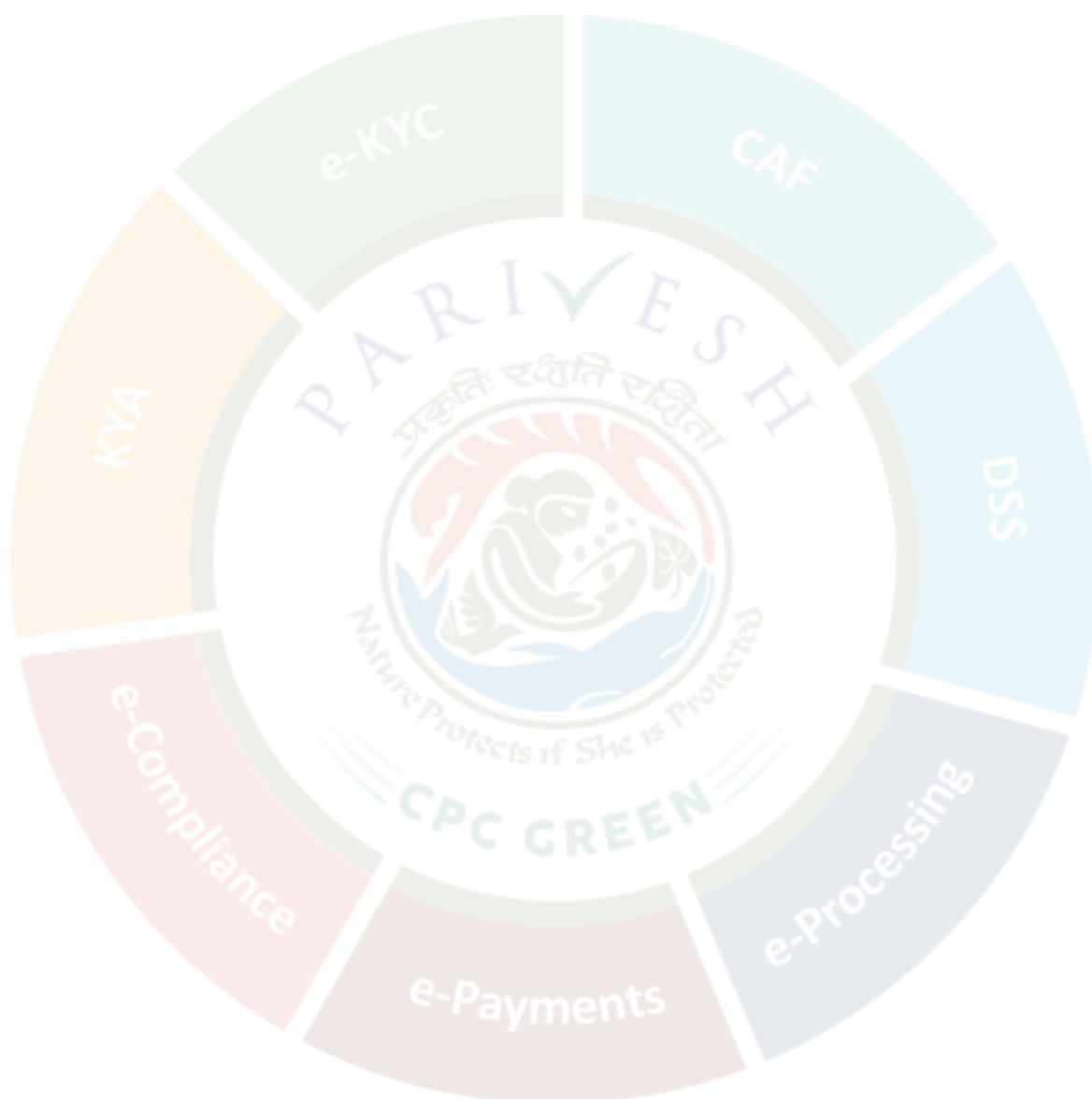
Additional Terms of Reference

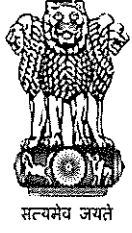
N/A

Annexure 2

Details of Products & By-products

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Coal	Coal	0.36	Million TPA	Road	Nil





State Level Environment Impact Assessment Authority, Jharkhand

Nursery Complex, Near Dhurwa Bus Stand, P.O+P.S-Dhurwa, Ranchi, Jharkhand-834004

E-mail: msseiaa.jhk@gmail.com / website: www.jseiaa.in

Letter No : EC/SEIAA/2025-26/5014/2025/

Ranchi, Date :

**To: Dr. Arvind Kumar,
SGM,
M/s RCR Steel Works Private Limited,
401, SKY Villa Apartment, 4th Floor,
Near Gandhi Nagar, Kanke Road,
District : Ranchi, Jharkhand : 834008.**

Sub: Prescribing of ToR to "Patal East (Eastern Part) Underground Coal Mine, South Karanpura Coalfield (rated capacity 0.36 MTPA, peak capacity 0.5400 MTPA) by M/s RCR Steel Works Private Limited, Village : Binja & Hendag, Sub District : Burmu, Distt.: Ranchi, Jharkhand (336.38 Ha). (Proposal no.: SIA/JH/CMIN/541947/2026) - regarding.

Ref: Your application no. RCRSWPL / 2026 – 27 / 45, dated : 06.07.2026.

Sir,

It is in reference to the project "Patal East (Eastern Part) Underground Coal Mine, South Karanpura Coalfield (rated capacity 0.36 MTPA, peak capacity 0.5400 MTPA) by M/s RCR Steel Works Private Limited, Village : Binja & Hendag, Sub District : Burmu, Distt.: Ranchi, Jharkhand (336.38 Ha)" submitted by you for seeking Terms of Reference (ToR).

This is a new project which has been taken for appraisal on 11.07.2026.

Project Sector: 1(a) Mining of Minerals (Coal), Category: B1.

Application for Terms of Reference (ToR).

Fresh ToR for underground Coal Mining: Rated capacity 0.36 MTPA Peak capacity-0.5400 MTPA in an area of 336.38 Ha.

Patal East Underground Coal Mine is a Green field underground coal mining project situated in South Karanpura Area of M/s RCR steelworks Private Limited is situated in the South Karanpura Coalfield of Jharkhand in Ranchi district. This project falls within revenue Village: Binja and Hendag, Subdistrict-Burmu, Distt.: Ranchi, Jharkhand.

A Mining Plan has been prepared by of M/s RCR steel works Private Limited, as per approved Guidelines of MoC, for Rated capacity 0.36 MTPA Peak capacity-0.5400 MTPA Area 336.38

Ha. Accordingly, the instant application in Form-I is submitted to SEIAA Jharkhand, as per EIA Notification, 2006, on 04.07.2026 for obtaining ToR.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Patal East Underground Coal Mine, SOUTH KARANPURA Coal Field
2	Project Proponent	: M/s RCR Steel Works Private Limited
3	Address	: 401, Sky villa Apartment, 4 th Floor, Near Gandhi Nagar, Kanke Road, Jharkhand, Ranchi, 834008
4	Area	: Ha: 336.38 ha Acres: 831.20 Acres
5	Type of Land	: Forest Land: 132.6 Ha & Non-Forest Land: 203.78 Ha
6	Project Cost	: 35761.63 Lakhs INR
9	New or Expansion	: New
10	Gross Geological Reserve	: 61.466 Mte Net Geological Reserve: 55.319 Mte
11	Mineable Reserves	: Coal: 39.694 Mte Extractable Reserve: 25.616 Mte
12	Mine Life	: 76 years
13	Man power	: 592
14	Water Requirement	: 8831 KL/Day
15	Water Source	: Mine seepage, and borewells
16	DG Set / power	: The annual energy consumption is around 14.77 MkWh.
17	Crusher	: No
18	Nearest Water Body	: Damodar River approx. 1.5 km towards NE.
19	Nearest Habitation	: Binja and Hendag within mine lease
20	Nearest Rail Station	: Hendegir Station approx. 3.5 km towards NW.
21	Nearest Air Port	: Ranchi airport: approx. 40 km towards SE.
22	Nearest Forest	: Within Project boundary, Tokisud Protected Forest Adjacent towards NE.
23	Road & Highways	: State Highway-7 approx. 11.0 Km towards East.

LAND & LAND SCHEDULE:

Sl. No.	Nature of land involved in the project	Name of Village	Thana No.	Khata No	Plot No.	Total Area in acre
1	Raiyati	Binja	34	1, 3, 4, 5, 6, 10, 11, 12, 13, 14, 18, 19, 20, 21, 22,	211, 262, 266, 269, 270, 271, 272, 315, 319, 1405, 1409, 1769, 1772, 1776, 1783, 1785, 1786, 1866, 1442p, 1722p, 1834p, 1859p, 1860p, 52, 56, 68, 69, 70, 225, 246, 259, 283, 355, 409, 414, 449, 451, 789, 790, 792, 959, 996, 997, 1020, 1061, 1408, 1723, 1865, 1046p, 1047p, 1726p, 994p, 943, 67, 150, 348, 515, 516, 63	417.41 (168.93 Ha)

				23,24,25,26, 27,28,29, 30,31,32,35,3 8,39, 42,43,44,45,4 7,49,50,52, 53,54,56,57,5 8, 59,62,63,64,6 5,66, 68,69,70, 77,79,80,81,8 2,84,85, 87,89,90,92,9 4,95, 96,97,98,99,1 01, 105,106,107,1 15	8,639,640,775,776, 797,900,1019,1021,1032p,1033p,960p,1034p,218,220,855,1397p,4 98,533,597,598,600,601,602,620,683,684,685,686,687,688,695,98 0,981,982,983,984, 1018,1026,310,329,429,430,432,433,434,435,445,446,448,633,836 ,837,838,839,840,841,842,843,844,853,854,923,944,967,971,972,9 73,1053,1055, 1058,1059,853/1921,922p,969,1398,1399,1400,73,77,78,89,91,92, 103,110,129,130,131,132,141,142,146,298,299,300,332,353,372,3 74,387,389,390, 391,392,393,395,396,397,398,399,400,401,453,454,466,505,506,5 11,551,553,589,624,642,643,647,668,698,699,700,701,702,703,70 5,712,713,724, 728,729,732,763,764,768,769,770,771,772,773,774,899,904,917,9 18,954,991,1002,1003,1004,1011,1012,1013,1031,41p,42p,43p,44 p,585,102,47p, 846,261,331,361,1768,1455p,1765p,1767p,261/1938,852,662,861, 881,898,878p,14,16,17,18,36,71,74,75,86,87,88,107,364,365,366, 381,383,384,385,419,420,447,739,740,741,128p,19,20,23,98,106,1 52,154,106/1932,1900/1935p,1426,1427,1428,1432,1441p,165,531 ,532,594, 595,599,733,734,995,1001,1049,95,96,97,104,459,461,478,587,59 6,715,716,717,719,720,721,730,761,762,896,901,167,168,169,191, 234,235,237, 276,277,278,282,1416,1851p,45,66,317,318,367,368,370,371,376, 403,404,455,583,584,592,693,694,749,750,751,752,753,754,212,2 92,293,294,295, 296,297,1411,1771,285,301,307,308,215,323,324,349,1415,1419,1 774,181,182,183,185,186,187,189,190,214,322,1773,1854,1852p,1 853p,1855p, 388,845,304,418,422,423,424,425,426,431,437,438,439,500,555,5 56,557,558,559,565,567,618,632,641,644,645,815,816,817,818,81 9,820,821,825, 826,827,833,834,835,1022,25,26,27,29,57,58,59,60,61,62,63,64,65 ,83,84,339,341,440,441,442,443,444,452,468,469,470,471,472,473 ,474,475,476, 503,507,508,509,510,512,517,518,519,520,521,522,523,524,525,5 26,577,578,579,580,581,582,593,613,614,615,777,778,779,780,78 1,782,783,784, 785,786,787,912,913,957,958,961,964,965,966,1007,1015,1016,10 17,1029,1030,30,32,160,250,251,252,253,254,255,1429,1434,1454 ,1777,1453p, 1456p,232,233,239,240,279,1417,194,196,198,221,245,280,281,30 2,303,1418,1452p,159,963,54,491,492,742,743,744,745,793,940,4
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					93,494,514,697, 746,747,748,905,907,908,909,941,956,1006,894p,219,21,93,94,99,100,108,149,171,172,173,174,244,351,354,362,456,504,554,588,590,591,709,711, 723,725,765,766,767,955,1005,1028,891p,145,378,603,604,634,678,679,680,681,682,696,934,936,937,938,952,988,989,990,992, 993,1056,1057,109,151,382,501,735,737,953,1008,893p,464,465,335,337,338,342,343,344,346,379,380,407,457,458,479,480,481,482, 484,485,486,487,488,489,490,499,513,560,561,562,564,568,569,573,574,576,605,606,607,608,609,610,611,612,616,617,619,622,625,627, 628,652,653,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,823,851,856,858,859,862,863,864,865,868,869,870,883, 884,885,886,887,919,920,921,931,932,968,975,976,977,979,1024,1025,880p,929p,930p,177,178,179,359,1403,1404,1414,1770,416, 417,496,570,571,572,636,637,824,828,829,830,831,832,915,916,942,947,948,949,950,974,978,1023,1868/1939P,312,689,1009,143, 314,326,327,328,330,427,428,690,691,692,1010,1063,1393p,1395p,197,290,291,1430,1435,1436p,1437p,217,358,707,736,871,872,882, 873p,875p,925p,79,80,82,226,227,228,229,230,231,238,105,111,114,133,134,135,136,137,139,140,144,147,148,502,563,586,626,635, 718,757,758,759,760,902,903,1027,928p,247,1748,1749p,1750p,176,249,306,321,350,360,1413,192,223,241,242,1420,1421,1422,1721,1724, 1778,1423p,1720p,1725p,1746p,1779p,415,477,495,528,529,530,534,535,536,537,538,539,541,542,544,545,547,548,549,575,621,629,630,631, 656,673,674,675,676,677,945,946,986,1014,888p,1892p,1893p,1896p,1897p,1898p,1899p,1424,1425,1433,274,284,287,288,289,1747p,669, 670,671,672,155,655,657,658,411	
		Hendag	31	5,29	218,214,215	3.1 (1.25 Ha)
2	BakastBhuihari	Binja	34	104,109,111,113,114	654,659,660,661,666,706,847,848,1861,1862,649,651,665,1864,650,667,1863,386,410,412,413	10.27 (4.16 Ha)
		Hendag	31	-	-	0

[Signature]

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3	Notified Forest	Binja	34	102,103	153,157,162,163,1867,1064p,115p,1387p,1460p,1868p, 1891p, 199p,311p,794p,911p,924p,926p,985p,158	176.63 (71.49 Ha)
		Hendag	31	21	212,245	5.97 (2.41 Ha)
4	GM Jungle Jhari	Binja	34	102	34,35,37,112,153,156,157,161,163,170,175,184,305,363,369,402,4 05,462,546,708,727,731,798,914,1867,1064p,115p,1387p,1460p,1 868p,1891p,1900p,199p, 205p,311p,38p,46p,51p,794p,890p,894/1922p,924p,926p,985p	135.75 (54.94 Ha)
		Hendag	31	21	212,245	9.31 (3.76 Ha)
5	GM Aam	Binja	34	103,108	158,193,195,208,236,313,356,527,756,788,795,939,951, 1051,1052,1407,1412,1431,1760p,1782p,49p,849	14.49 (5.86 Ha)
		Hendag	31	-	-	0
6	GM, GM Khas	Binja	34	2,102,103	210,263,13,15,22,24,28,31,33,53,55,72,76,81,85,90,101,113,138,1 62,164,166,180,188,207,209,213,216,222,224,243,248,256,257,25 8,260,264,265,267,268,273, 275,286,309,316,320,325,333,334,336,340,345,347,352,357,373,3 75,377,394,406,408,421,436,450,460,463,467,483,497,540,543,55 0,552,566,623,646,663,664, 704,710,714,722,726,738,791,796,822,850,857,860, 866,867,895,8 97,906,910,933,935,970,987,1048,1050,1054,1060,1062,1401,140 2,1406,1775,1784,1894,1895, 1000p,1042p,1044p,1045p,12p,1727p,1781p,1787p,1835p,648p,87 6p,892p,911p,962p,998p,755	49.02 (19.84 Ha)
		Hendag	31	21	216,217	1.25 (0.50 Ha)
7	Railway	Binja	34	116	1550p	2.02 (0.82 ha)
		Hendag	31	-	-	0
8	Keshar-E-Hind	Binja	34	117	1410p,206p	5.98 (2.42 ha)
		Hendag	31	-	-	0
					Total Area	831.20 (336.38 Ha)

Summary of Mining lease Area											
Sl. No.	Village	Thana No.	Raiyati	Bakast Bhuihari	Notified Forest	GM Jungle Jhari	GM		Railway	Keshar-E-Hind	Total
							GM Aam	GM Khas			
1	Binja	34	417.41	10.27	176.63	135.75	14.49	49.02	2.02	5.98	811.57
2	Hendag	31	3.10	0.00	5.97	9.31	0.00	1.25	0.00	0.00	19.63
Total Area (In acre)			420.51	10.27	182.60	145.06	14.49	50.27	2.02	5.98	831.20
Total Area (In Ha)			170.18	4.16	73.90	58.70	5.86	20.34	0.82	2.42	336.38

TOPOSHEET & BOUNDING CO-ORDINATES:

Topo-Sheet No. : F45B1, F45B2, F45B5, F45B6

1	Latitude	From 23° 40' 27.791" N	To 23° 40' 38.293" N
2	Longitude	From 85° 12' 46.756" E	To 87° 2' 46.253" E

The project includes 132.6 Ha of forest land., Out of which 73.90 Ha is forest land and 58.70 is GM Jungle Jhari falling under the Ranchi Forest Division has already applied Stage-I is currently under consideration for Forest Clearance as part of the ongoing proposal No. FP/JH/MIN/QRY/535386/2025. The details of Forest Land is submitted below:

Particulars	Total Area in Ha	Application Submitted for FC (HA)
Forest Division Involved		Ranchi
Notified Forest (a)	73.90	73.90
GMJJ / Revenue Forest (b)	58.70	58.70
Forest Land including GM JJ/Revenue (A= a + b)	132.6	132.6
Non-Forest (B)	203.78	203.78
Total Land (A+B)	336.38	336.38

SITE DESCRIPTION:

The block shows undulating topography with maximum elevation of 402m in the southwestern side and minimum elevation of 370m in the northern part of the block. Damodar river, flowing at about 3km from the northern boundary of the block, controls the drainage pattern of the area.

The general slope of the block is towards north and few seasonal nalas flow in the Damodar River. A number of valleys are present in the Block, most of them followed by nalas. The area shows dendritic pattern of drainage and is traversed by a few nalas. All these nalas flow almost northerly and ultimately drain to Damodar River. The rainfall generally remains within a range of 1200-1700mm. The rainy season lasts from mid-June to mid-September. HFL of Damodar River, as recorded in 1976, is 363.75 m.

WORKING DETAILS:

Quarry-1 (East) will be exhausted in the 3rd year of quarry operation and then Quarry-2 (West) will be started. During Quarry-1 operation OB from Quarry- 1 will be dumped over the property of Quarry-2. It will again be re-handled during operation of Quarry-2.

1	Mining Method	The coal deposit will be extracted using the Bord and Pillar method, considering the geological conditions and seam characteristics of the block. The method involves driving a network of bords (galleries) while leaving coal pillars to support the roof during mine development.
2	Project Area and capacity	Proposed Project Area: 336.38 Ha. Proposed Rated Capacity : 0.36 MTPA Proposed Peak Capacity : 0.54 MTPA
3	No of Seams considered	09
4	Name of Coalfield	Patal east coal field (eastern part)
5	Average Grade	G9
6	Exploration Details	MECL carried out exploratory drilling from 05.07.2011 to 04.01.2013 in the Patal East Captive Coal Block from which the present Patal East (Eastern Part) Block has been carved out. Area covered by "detailed" exploration within the block (sq.km)-2.8
7	Life of the project	76 Years
8	Gross Geological Reserve	61.466Mte
9	Net Geological Reserve	55.319Mte
10	Blocked Reserve	15.625Mte
11	Mineable Reserves	39.694Mte
12	Extractable Reserve	25.616Mte
13	Depth of Working	140-350 m bgl

14	Mode of Transport	Road and Road cum Rail
15	Top soil	0.365Mte
16	Stripping Ratio	NA

TOPSOIL MANAGEMENT

Year/Stage		Top Soil Removal Plan	TOP SOIL USED				
(Life of the mine plus post closure period)			Spreading Over Embankment	Spreading Over Backfill area	Spreading Over External OB Dump area	Used in Green Belt area	Total Utilised
Up to Base year	2027						
Y-1	2027-28						
Y-3	2029-30	0.36505					
Y-5	2031-32	0.36505	0.26025			0.1048	0.36505
Y-6	2032-33	0.36505	0.26025			0.1048	0.36505
Y-10	2036-37	0.36505	0.26025			0.1048	0.36505
Y-15	2041-42	0.36505	0.26025			0.1048	0.36505
Y-20	2046-47	0.36505	0.26025			0.1048	0.36505
Y-25	2051-52	0.36505	0.26025			0.1048	0.36505
Y-30	2056-57	0.36505	0.26025			0.1048	0.36505
Y-35	2061-62	0.36505	0.26025			0.1048	0.36505
Y-40	2066-67	0.36505	0.26025			0.1048	0.36505
Y-45	2071-72	0.36505	0.26025			0.1048	0.36505
Y-50	2076-77	0.36505	0.26025			0.1048	0.36505
Y-55	2081-82	0.36505	0.26025			0.1048	0.36505

Y-60	2086-87	0.36505	0.26025			0.1048	0.36505
Y-65	2091-92	0.36505	0.26025			0.1048	0.36505
Y-70	2096-97	0.36505	0.26025			0.1048	0.36505
Y-75	2101-02	0.36505	0.26025			0.1048	0.36505
Y-76	2102-03	0.36505	0.26025			0.1048	0.36505
Post closure							
Y-79	2105-06	0.36505	0.26025			0.1048	0.36505

Proposed Calendar Program:

Calendar year from which the production will start		2030-31				
Year of Achieving rated production		2032-33				
Year		Coal Production Schedule			OB MM3	SR
Year of operation	Calendar year	UG	OC	Total		
1	2027-28	0		0.0000		
2	28-29	0		0.0000		
3	29-30	0		0.0000		
4	30-31	0.072		0.0720		
5	31-32	0.292		0.2920		
6	32-33	0.36		0.3600		
7	33-34	0.36		0.3600		
8	34-35	0.36		0.3600		
9	35-36	0.36		0.3600		
10	36-37	0.36		0.3600		

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11	37-38	0.36		0.3600		
12	38-39	0.36		0.3600		
13	39-40	0.36		0.3600		
14	40-41	0.36		0.3600		
15	41-42	0.36		0.3600		
16	42-43	0.36		0.3600		
17	43-44	0.36		0.3600		
18	44-45	0.36		0.3600		
19	45-46	0.36		0.3600		
20	46-47	0.36		0.3600		
21	47-48	0.36		0.3600		
22	48-49	0.36		0.3600		
23	49-50	0.36		0.3600		
24	50-51	0.36		0.3600		
25	51-52	0.36		0.3600		
26	52-53	0.36		0.3600		
27	53-54	0.36		0.3600		
28	54-55	0.36		0.3600		
29	55-56	0.36		0.3600		
30	56-57	0.36		0.3600		
31	57-58	0.36		0.3600		
32	58-59	0.36		0.3600		
33	59-60	0.36		0.3600		
34	60-61	0.36		0.3600		

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35	61-62	0.36		0.3600		
36	62-63	0.36		0.3600		
37	63-64	0.36		0.3600		
38	64-65	0.36		0.3600		
39	65-66	0.36		0.3600		
40	66-67	0.36		0.3600		
41	67-68	0.36		0.3600		
42	68-69	0.36		0.3600		
43	69-70	0.36		0.3600		
44	70-71	0.36		0.3600		
45	71-72	0.36		0.3600		
46	72-73	0.36		0.3600		
47	73-74	0.36		0.3600		
48	74-75	0.36		0.3600		
49	75-76	0.36		0.3600		
50	76-77	0.36		0.3600		
51	77-78	0.36		0.3600		
52	78-79	0.36		0.3600		
53	79-80	0.36		0.3600		
54	80-81	0.36		0.3600		
55	81-82	0.36		0.3600		
56	82-83	0.36		0.3600		
57	83-84	0.36		0.3600		
58	84-85	0.36		0.3600		

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59	85-86	0.36		0.3600		
60	86-87	0.36		0.3600		
61	87-88	0.36		0.3600		
62	88-89	0.36		0.3600		
63	89-90	0.36		0.3600		
64	90-91	0.36		0.3600		
65	91-92	0.36		0.3600		
66	92-93	0.36		0.3600		
67	93-94	0.36		0.3600		
68	94-95	0.36		0.3600		
69	95-96	0.36		0.3600		
70	96-97	0.36		0.3600		
71	97-98	0.36		0.3600		
72	98-99	0.36		0.3600		
73	99-2100	0.36		0.3600		
74	2100-01	0.3		0.3000		
75	2101-02	0.262		0.2620		
76	2102-03	0.21		0.2100		
Note: Calendar Plan/Production Plan for the entire life of the mine						

DESCRIPTION OF FAULT:

Interpretation of sub-surface data has revealed that the block is traversed by 4 number of faults Viz faults F5-F5, F6-F6, F7-F7 & F8-F8. Fault F8-F8 is a boundary fault along which Gondwanas have come in juxtaposition with metamorphics located in the south of the block boundary. This fault is steeply dipping towards north. Geological structure between fault F8 - F8 and F5-F5 is highly complicated.

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SEQUENCE OF COAL SEAMS:

The sequence of coal seams, their thickness range and range of parting between coal seams are given below:

Seam	Thickness Range, m	Depth Range, m	GCV Range	Grade range
BM I	0.33-2.27	51.47-331.88	4230	G13-G11
Parting	127.56-157.75			
XI	0.05-0.30	117.8-445.08		
Parting	10.66-23.88			
XA/ XB/ XAB	0.17-3.34	153.9-569.3	3980-5490	G12-G7
Parting	0.66-8.75			
IXA	0.28-4.08	132.65-74.04	3780-4460	G10-G12
Parting	1.55-4.56			
IXB	0.05-2.38	135.89-578.7	3880-4130	G12-G11
Parting	9.46-32.45			
VIIIA/VIIIB/VIIAB	0.06-3.74	143.99-38.17	3010-4670	G15-G9
Parting	0.79-4.40			
VIIIC/VIIID/VIIICD	0.03-4.04	145.21-543.4	3830-4850	G12-G9
Parting	2.37-13.26			
L4	0.12-0.8	151.4-556.81		
Parting	7.14-14.29			
VII	0.05-1.95	195.3-603.31	4500-4830	G10-G9
Parting	8.65-29.85			
VI T	0.34-1.35	374.44-57.26	5290-5353	G7-G7
Parting	0.46-4.57			
VIB/ VComb	0.04-4.18	212-580.22	4570-5470	G10-G7
Parting	8.20-42.19			
V	0.16-3.38	222.55-617.21	3770-473	G12-G9
Parting	4.27-29.34			
IV Comb	0.2-8.15	227.95-639.8	4550-4710	G10-G9
Parting	4.84-14.20			

L3	0.09-0.24	334.57-571.29		
Parting	4.84-17.44			
L2	0.05-0.90	285.85-584.87		
Parting	5.48-19.97			
L1	0.07-1.49	320.4-590.42		
Parting	2.35-7.64			
III	0.1-4.70	328.71-595.67	4060-4940	G11-G8
Parting	19.35-26.29			
II	0.45-2.28	479.7-483.15	4940	G8
Parting	14.8-38.02			
	Not developed			

DIP AND STRIKE:

The general strike of the beds in the block is NE-SW, which swings to NNE-SSW in the southern part along fault F5-F5. The dip of the formation in general varies between 10deg - 12deg due south-west in major part of the area but becomes very steep in the southern part, about 40deg.

LAND USE:

Pre Mining Land Use

Sl. No	Land Type	Current Land Use Area in Ha	Proposed Land Use
	Agriculture Area	53.18	53.18
1	Water bodies	7.11	7.11
2	Road	5.99	5.99
3	Community/other use	1.56	1.56
4	PF	73.9	73.9
5	Township	23.88	23.88
6	Grazing	64.22	64.22
7	Free hold	0.82	0.82
8	Barren	105.72	52.06
9	Mining Activity	0	53.66
	Total	336.38	336.38

Type	Land Use (Post Closure)						
	Agricultural land	Plantation	Water Body	Public/Comp any Use	Forest Land (Returned)	Undisturbed	Total
Settling Pond			0.315				0.315
Road And Infrastructure Area		18.085		1.2			19.285
Rationalized ion Area	27.97						27.97
Green Belt		5.24					5.24
Water Reservoir Near Pit			0.06				0.06
UG Entry		0.79					0.79
Undisturbed OR Mining Right For UG						282.72	282.72
Total	27.97	24.12	0.38	1.20	0.00	282.72	336.38

MACHINERIES / HEMM

Sl.No.	Type of Equipment	Capacity	Unit	Population
1	SDL kW V Cum bucket capacity	48	KW	12
2	Gathering Arm loader	37	KW	5
3	Pony Conveyer/Light duty Chain Conveyor-800 mm, 150 tph	30	KW	21
4	Specially designed Light duty Chain Conveyor-150 tph	30	KW	7

5	UDMs- Drill hole diameter-25-55 mm	37	KW	8
6	Coal Drill with Panel-500-600 rpm, 110-125V	1.1	KW	4
7	Roof bolting machine	22	KW	4
8	Anchorage Testing Machine	30	Tonnes	2
9	Face Pump-11 lps	11	KW	8
10	Auxiliary Fan msec mm water gauge	22	KW	4
11	Multi Utility vehicle Tonne	168	KW	2
12	Free Steered Vehicle Tonne	55	KW	2
13	Main Fan and standby fan	250	KW	2
14	Chair lift man riding system m	90	KW	1
15	Trunk Gate Belt Conveyor tph	800	mm	31
16	Main Belt conveyor tph	1000.00	mm	6
17	Auxiliary pump lps	110	KW	18
18	Main pump lps	120	KW	8
19	Axial pump for stowing lps	150	KW	2
20	Direct haulages	150	KW	2
21	Endless haulages	37	KW	7
22	Direct haulages	55	KW	4

PLANTATION

In order to absorb the pollutants arising out of the mining operations and to improve the ecological status and aesthetics of the area, a plantation program over life of the mine has been planned in a phase wisemanner on 5.24 ha. plantation will be started from first year of mining along theboundary of ML area. The green belt will comprise of:

A 7.5 m wide green belt will be established on the safety zone around the ML boundary. The green belt will be widened wherever space will become available. Greenbelt shall be developed over the unused area of mining boundary.

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During peak requirements, additional plants will be purchased from Govt./Forest nurseries located around the project. The common species used for plantation in the region are Bamboo, Kendu, Mahua, Arjun, Bargad, Peepal, Aam, Sal, Neem, Jamun, Amrood, other fruit bearing trees, etc.

Subsidence Management:

Patal East (Eastern Part) coal mine is located in Burmu block of Ranchi District, falls in the western part of South Karanpura Coalfield. The Coalfield is spread over an area of about 180 sq.km and bounded by latitudes 23°39'33" & 23°40'43" N and longitudes 85°11'16" & 85°13'07"E. The block shows undulating topography with a maximum elevation of 402m on the southwestern side and a minimum elevation of 370m on the northern part of the block. The major part of the coalfield is occupied by rocks of Barakar Formation. The Barakar Formation is predominantly composed of medium to coarse-grained sandstones, grey shales, carbonaceous shales, intercalations of shale and sandstone, and coal seams. There are nineteen coal seams in the coal block, out of which nine seams, namely XAB/B/A, IXA, VIIIAB/B/A, VIIICD/D/C, VII, VIB/VIComb, V, IVComb, and III are persistent and have a potential thickness to mine the property. Hence, depillaring with stowing following the bord and pillar mining method is proposed by RCR Steel Works Private Limited to mine the workable coal seams only. A total of 97 panels are proposed to be extracted. The minimum cover depth of panels ranges from 123 m and 505 m. Important surface features above the coal block are forest area, villages (Binja and Hendag), nallas, HT and LT power lines passing through the block, pucca and kutcha roads.

Three-dimensional subsidence prediction modelling was performed using FLAC3D to estimate the maximum subsidence and tensile strain during the extraction of the panels. The subsidence and strain values were estimated at an interval of 5 years up to 30 years, viz. 5, 10, 15, 20, 25, and 30 years. Thereafter, they were assessed at an interval of 10 years till the completion of the mine life, viz. 40, 50, 60, 70, and 76 years, in accordance with the panel progress plan provided by the mine management. The following conclusion and recommendations are proposed for workings:

1. The maximum estimated subsidence and tensile strain due to extraction of coal from XA/XB/XAB to III seams after 30 years are 215 mm and 1.13 mm/m, respectively, whereas their values after 76 years are 637 mm and 2.92 mm/m respectively.
2. The predicted maximum tensile strain of 2.92 mm/m at the surface would not affect the forest area, villages (Binja and Hendag), nallas, HT and LT power lines passing through the block, pucca, and kutcha roads,
3. Suitable drainage, if necessary, should be made to avoid logging of water in the centre of subsidence troughs as it would affect the surface topography.
4. Subsidence should be monitored, especially during the extraction of panels located beneath and in the vicinity of the surface structures, to assess the actual impact as well as from the safety perspective.







STATUTORY CLEARANCES

1	Land Docs	:	Vesting order issued by Office of the Nominated Authority, Ministry of Coal, Govt. of India vide order no. NA-104/24/2023-NA, dated 08.06.2023.
2	CO	:	The CO, Burmu, Ranchi vide letter no. 248(A)(ii), dated 08.05.2025 has mentioned that out of 336.38 Ha, 58.70 Ha land is Jungle-Jhari for which diversion application of deemed Forest land under Forest (Conservation) Act, 1980 has been submitted vide proposal no. FP/JH/MIN/QRV/535386/2025, dated 26.04.2025.
3	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 456, dated 15.06.2026 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	DFO Territorial	:	DFO, Ranchi vide letter no. 1462, dated 29.04.2026 certified that the the distance of reserved / protected forest is less than 250 meters from project site and also certified that out of 336.38 Ha, 73.90 Ha land is notified forest for which diversion application under Forest (Conservation) Act, 1980 has been submitted vide proposal no. FP/JH/MIN/QRV/535386/2025, dated 26.04.2025.
5	Mine Plan Approval	:	Mine plan approved by Deputy Director, Coal Controller Organisation (A subordinate organisation of Ministry of Coal), Govt. of India vide Application No. JHRA/APP00294/2024, dated 18.12.2024.
6	CGWA	:	No Objection Certificate (NOC) for withdrawal of water has been obtained from CGWA vide No. NOC/MIN/JH/2025/8963/N, dated 02.07.2025 valid up to 01.07.2027.

Stowing

Procurement of sand for stowing will be done only from legal and authorized sources

SEAC, Jharkhand has suggested the ToRs in its 133rd meeting held on 08th, 09th, 10th, 11th and 12th July, 2026 for undertaking detailed EIA / EMP study and SEIAA, Jharkhand has approved the ToRs in its 133rd meeting held on 27th, 28th & 29th July, 2026. The SEAC has recommended following project specific conditions:-

Specific Conditions:

- The directions proscribed and prescribed in the Office Memorandum No. FC-11/119/2020-FC, Dated : 17th May, 2022 of MoEF&CC shall be strictly adhered to.

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- ii. PAs shall obtain Stage-I Clearance under Forest (Conservation) Act, 1980 before submission of the application for final EC.
- iii. In compliance of OM no. F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign “*Ek Ped Ma Ke Naam*” and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>). 10% of the total green belt proposed shall be allocated under this clause.

The TORs prescribed for undertaking detailed EIA study are as follows:

- i. The EIA Report shall be prepared MTPA rated capacity in an ML / project area of ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
- ii. The cover page of the EIA report shall consists of project title with location, applicable schedule of the EIA Notification, 2006, ToR letter No. with date, study period along with EIA consultant & laboratory details with reference of QCI/NABET/NABL accreditation certificate.

Introduction about the project:

- i. Details regarding project capacity (peak rated capacity in MTPA) and mining lease area (ha), details regarding project proponent and project location (including coalfield / coal block & geographical location), significance/need of the project and coal linkage.
- ii. Details of mine plan and mine closure plan approval from Competent Authority should be furnished for green field and expansion projects. Reference of the Vesting Order should also be provided.
- iii. Details of the chronology of past EC regarding the project and its implementation status (in case of expansion proposals) shall be provided

Project Details and Description

- i. Details w.r.t location of the project - Coordinates w.r.t the mining lease boundary (including kml in polygon format) to be provided and submitted as location plan. A toposheet depicting the core zone (mine infrastructural area) and buffer zone (10 kms radius from periphery of the core zone) on 1:25,000 scale. (including all eco-sensitive areas and environmentally sensitive places)
- ii. Details of sensitive environmental receptors (habitation / school / river or water body / forest / areas of archaeological significance, etc.) within 10 kms from the periphery of the core zone shall be provided. Details w.r.t need for diversion of water body / road / railway / transmission lines to be indicated.
- iii. Details of mineral reserves, geological status of the mining lease area and the seams to be worked, ultimate working depth, gassiness of seams to be worked and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved peak rated capacity and calendar plans of production from the







approved Mining Plan. Geological maps and section should be included.

- iv. Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts on air quality, noise & vibration on account of mineral transportation, coal handling & storage/stockyard, etc. should be provided. Details w.r.t manpower engaged in the project shall also be included.
- v. Submission of sample test analysis of characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, sulphur and heavy metals including levels of Hg, As, Pb and Cr.
- vi. Details w.r.t utilities required for the project including power, fuel, water supply, including source of the utilities.
- vii. Details w.r.t infrastructural facilities planned as a part of the project including incline, ventilation shafts, CHP, ETP, Stockyard, township/colony, magazine, etc.
- viii. Project proponent should clearly show the transport route & details of transportation route (*viz.* Type of road, width of road, Pavement Condition Index, V/C of road etc.) of the mineral and protection and mitigative measures to be adopted while transporting the mineral. The coal or lignite evacuation facility should be through conveyor or railway or any environmentally friendly transport other than road transport from mine sites to the railway siding for projects with PRC more than 2 MTPA, as per new Guidelines for preparation of Mining Plan and Mine Closure Plan from MoC dated 31.01.2025. Also, preference to be given to eliminate road transport by adopting environment friendly transport of coal evacuation and opt for mechanized loading for projects with peak rated capacity even upto 2 MTPA.
- ix. A detailed site plan of the mine showing the proposed break-up of the land for mining operations such as the mine entries / incline, UG seams and panels, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area-if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification thereof in terms of construction of embankments/bunds, proposed diversion/re-channeling of the water courses, etc., approach roads, *etc.* should be indicated.
- x. Project proponent shall submit the drone video & geo-tagged photographs of mine lease area to be mined, including infrastructural area and proposed transportation route.
- xi. It must be endeavored to locate the mine inclines and ventilation shafts at least 100 m from habitations. In case such 100 m buffer is not possible, justification for the same shall be provided. Project proponent should ensure that no forestland is diverted to the extent feasible for setting up of the mine infrastructure facilities.
- xii. Original land use (agricultural land/ forest land (*if applicable*) /grazing land/waste land/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the mining lease area,

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acquired for mining operations should be analyzed. Extent of area under surface rights and mining rights should be specified. A map depicting the same shall also be submitted.

Pre-Mining Land use

Sl. No.	ML/Project Land- use	Area under Surface Rights only (ha)	Area under Mining Rights (ha)	Area under Both / All Rights (ha)
1.	Agricultural Land			
2.	Forest Land			
3.	Grazing Land			
4.	Settlements			
5.	Water bodies			
5.	Others(specify)			
	TOTAL			

Break-up of Area under Surface Rights only

Sl. No.	Details	Area (ha) under Surface Rights only
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Water bodies	
5.	Others(specify)	
	Total	

Land Use during Mining Phase

Sl. No.	Details	Area under Surface Rights only (ha)			Area under Mining Rights [beneath surface] (ha)			Area under Both /All Rights (ha)		
		Forest Land	Non-forest land	Total	Forest Land	Non-forest land	Total	Forest Land	Non-forest land	Total
1	UG Extraction / Working area									

	(beneath surface)									
2	Industrial Infrastructure (Mine entry / incline, stockyard / siding / magazine, etc.)									
3	Other infrastructure (office buildings, utilities, treatment plants, colony etc.)									
4	Roads									
5	Greenbelt									
6	Water body									
7	Undisturbed/ vacant area / safety zone									
	TOTAL									

In case of expansion proposals, the above table must be provided for

- (1) Present land use as per existing EC and
- (2) Proposed land use in terms of expansion proposal

Land Use Status - Post Mining Phase

Sl. No.	Details	Plantation	Water Body	Public Infrastructure	Un-disturbed areas	Subsided Area	Total
1.	UG Extraction / Working area (beneath surface)						
2.	Industrial Infrastructure (Mine entry / incline,						

3.	stockyard / siding / magazine, etc.)						
4.	Other infrastructure (office buildings, utilities, treatment plants, colony etc.)						
5.	Roads						
6.	Green belt						
7.	Water body						
8.	Undisturbed / vacant area / safety zone						
9.	Total						

In case of expansion proposals, the above table must be provided for

- (1) Post mining land use as per existing EC and
- (2) Proposed post mining land use in terms of expansion proposal

- xiii. A list of major industries within study area (10 km radius from the periphery of the core zone) with name, products manufactured and distance from core zone and the location of the industries shall be depicted in the study area map.

Baseline Data Generation

- i. A study area map of the core zone (mine infrastructure area) and 10 kms area (1:50,000 scale), from the periphery of core zone, clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nallahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources shall be prepared.
- ii. In case of ecologically sensitive areas such as ESZ/ESA/National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve/Elephant Reserve/Tiger Corridor/ Elephant Corridor are found to be within 10 kms from the boundary of the mining lease, the nearest distance from such sites should be duly certified by Chief Wildlife Warden (CWW) and the same shall be included in the EIA/EMP report.
- iii. The environmental baseline data collection shall be of three months' period and can be for any season except monsoon season, as per the below table:

Attributes	Sampling, Frequency and Remarks
A. Air Environment	
Micro-Meteorological • Wind speed (Hourly) • Wind direction • Dry bulb temperature • Wet bulb temperature • Relative humidity • Rainfall • Solar radiation • Cloud cover	Minimum 1 site in the core zone Hourly continuous data shall be recorded The sampling shall be as per: • IS 5182 Part 1-20 • Site specific primary data is essential • Secondary data from IMD, CPCB guidelines to be considered. Project proponent has to plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study.
Pollutants Core Zone: 4 parameters as per Coal Mines, GSR 742 (E) dated 25.09.2000 Buffer zone: 12 parameters as per NAAQS, 2009	Collection of one season (90 days) AAQ data (except in monsoon season) To be monitored at 10 locations (2 locations within the core zone and 8 locations in the buffer zone) Monitoring stations in the core zone as well as buffer zone should be based on pre-dominant wind direction, habitations and terrain features. The direction and distance of monitoring stations with respect to project location should be clearly specified with geo-coordinates. The monitoring stations should cover upwind, downwind, cross wind directions, human settlements and sensitive areas. Sampling and report preparation should be as per: • National Ambient Air Quality Standards, CPCB Notification and Standards for Coal Mines, GSR 742 (E) dated 25.09.2000. • Sampling as per CPCB guidelines • Min., max., average and 98% values

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	for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report. - Summary of the air quality along with predicted values of air pollutants should be provided in the EIA Report. - NABL accredited laboratory
B. Noise	
Noise levels	To be monitored at 6 locations (2 locations within the core zone and 4 locations in the buffer zone) Noise levels at outer limits of the core zone during daytime and night time and noise levels within 1 to 3 kms from the core zone & coal transportation route especially at habitation should be monitored. The monitoring locations for sampling shall be selected as per the sources and magnitude of noise pollution. Sampling and report preparation as per: - As per CPCB norms and Standards for Coal Mines, GSR 742 (E) dtd 25.09.2000. - NABL accredited laboratory Summary of the noise level should be provided in the EIA Report.
C. Water	
For Surface Water - Arsenic - BOD - Cadmium - Chlorides - Copper - Dissolved Oxygen - Fluoride - Hexavalent Chromium, - Iron - Lead	Upstream and downstream sampling of all the relevant surface water bodies (minimum 6 locations) in the core and buffer zone shall be carried out. Samples for water quality should be collected and analysed as per: - Designated best use water quality criteria, CPCB - NABL accredited laboratory - Standard methodology for collection of surface water (BIS standards)

• Nitrate • pH value • Phenolic compounds • Selenium • Sulphate • Total Dissolved Solids • Total Suspended Solids • Zinc Any other relevant parameters	
For Ground Water Relevant parameters as per BIS: 10500 (latest edition)	Ground water monitoring data should be collected at minimum of 6 locations (from existing wells /tube wells) from the core and buffer zone shall be included. Samples for water quality should be collected and analysed as per: • NABL accredited laboratory • Standard methodology for collection of ground water (BIS standards) • Summary of surface and ground water quality should be provided in the EIA Report.
D. Soil Environment	
Soil • Texture • pH • Electrical conductivity • Cation exchange capacity	Sampling shall be done at various type of soils (agriculture/forest/barren etc.) within the core and buffer zone (across minimum 5 locations). Samples for soil should be collected and analysed as per: • NABL accredited laboratory
• Sodium Absorption Ratio (SAR) • Water holding capacity • Permeability • Available NPK • Available Organic Carbon	• Standard methodology for collection of soil samples • ICAR standards for available NPK to be followed.
E. Land Use	Land use based on Digital Survey of entire study area (including core and buffer zone) using Satellite Remote Sensing survey (1:50000)

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F. Biological Environment	
Flora (both aquatic* and terrestrial) • Vegetation-species list, economic importance, forest produce, medicinal value • Importance value index (IVI) of trees • Diversity indices • Rare and endangered species *Aquatic assessment requirement in case of proximity of ML area to river / perennial nallah.	Detailed description of flora and fauna (terrestrial and aquatic) existing in the core and buffer zone shall be given with special reference to rare, endemic and endangered species. Indicator species which indicate ecological and environment degradation should be identified and included to clearly state whether the proposed project would result into any adverse effect on any species. Secondary data to be collected from Government offices, NGOs, published literature.
Fauna (both aquatic* and terrestrial) • Enumeration of zoo plankton and benthos • Fisheries • Diversity indices • Rare and endangered species • Avi fauna • Details of Sanctuaries / National Park / • Biosphere reserve Migratory routes/CRZ/ Marine Parks *Aquatic assessment requirement in case of proximity of ML area to river / perennial nallah.	
G. Socio-Economic	
• Demographic structure, traditional skills, sources of livelihood • Socio-economic profile of the people with in 2, 5 and 10 km from the core zone.	• Measures for occupational health and safety of the manpower in the mine should be given.
• Human settlement, health status, sources of livelihood • Data relating to historically, culturally and ecologically important	• Socio-economic survey shall be based on proportionate, stratified and random sampling method. • Primary data collection through

places in core as well as buffer areas • Information on notified tribal settlements, if any • Infrastructure resource base • Health status: Morbidity pattern • Education	questionnaire • Secondary data from census records, statistical hard books, topo sheets, health records and relevant official records available with Govt. Agencies
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- iv. Map (1:50,000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided.
- v. A contour map showing the area drainage of the core zone and surrounding 10 kms radius should be depicted such as to clearly indicate the water courses and the location where they ultimately join with major rivers / streams.
- vi. The data generated should be validated through secondary data sources / published literature (example - routine environmental monitoring or CAAQMS, CEQMS data (if available) for mines/projects in vicinity).
- vii. Summary of the baseline environmental data and inference w.r.t cause of deviations in concentrations of environmental parameters.

Impact assessment and mitigation measures Air

- i. In case of expansion proposals, Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10 kms radius of the core zone area shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 kms radius of the core zone shall be earmarked in map and submitted.
- ii. The impact of construction (particularly if constructed in forest land) and associated mitigation measures must also be provided.
- iii. In case of proximity of mining infrastructure to habitation/water bodies, adequate safety measures should be provided as per the Coal Mining Regulations, 2017 and DGMS circulars issued from time to time and environmental protection measures like wind barriers, Vertical Greenery System (VGS), avenue/buffer plantation, etc.
- iv. Impacts of mineral handling & transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided, especially w.r.t impact on habitation in case of transportation through village roads. Impacts of generation of effluents from workshop, sewage, etc. & management plan for maintenance of machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- v. Air quality modelling should be carried out for prediction of impact of the project on air quality of the area. It should *interalia* take into account the emissions from DG sets if any, impact of movement of vehicles for transportation of coal. The details of the model used and input parameters for modeling should be provided. The air quality

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contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and habitations. The wind roses showing pre-dominant wind direction may also be indicated on the map.

- vi. The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding should be provided and details w.r.t frequency of their use/operation to ensure efficient mitigation in terms of air quality should be provided.
- vii. Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- viii. Project proponent shall explore feasibility for transitioning towards adoption of EVs and eco-friendly mode of transport.

Noise

- i. Measures for noise control in the work zone and surrounding areas should be provided. All the DG sets should have proper acoustic measures to reduce noise pollution.

Water

- i. Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime (both dynamic and static resources) within the core zone and 10 kms buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater in the buffer zone should be reflected. Necessary mitigation measures w.r.t quality of mine water, treatment, utilization and discharge of mine water must be provided.
- ii. Treatment facility should be based on mine water characteristics and domestic waste water characteristics.

Hydrogeology

- i. Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted.
- ii. Detailed water balance should be provided (breakup of water requirement as per different activities in the mining operations, including for sand stowing). Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- iii. In case of need for river/nallah diversion, impact assessment and proper mitigation plan is required; diversion plan approved by competent authority is to be submitted.

Land

- i. Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre-mining status to the extent possible should be provided and submitted with detailed cost provisions.







Environmental Management Plan

- i. Summary containing mitigation measures to be adopted for each environment component during development and operation phase of UG coal mining shall be submitted.
- ii. Details of the Environment Management Cell
- iii. Performance monitoring of pollution control devices and Effluent Treatment Plant shall be furnished.
- iv. Cost of Environmental Management Plan (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- v. Corporate Environment Policy:
 - a. The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b. The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements /deviation/violation of the environmental or forest norms/conditions.
 - c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d. To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
- vi. In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.

Environmental Monitoring Plan

- i. Details w.r.t environmental monitoring plan in terms of air (including fugitive emissions), noise, water, soil to ensure effectiveness of mitigation measures deployed shall be provided
- ii. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

Project Benefits

- i. Details regarding benefits of the project w.r.t improvements in physical and social infrastructure, employment potential and other tangible benefits to be provided.

Legal and statutory approvals and details w.r.t litigations

- i. Status of any litigations/ court cases filed/pending on the project should be provided in below format

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S. No.	Name of the Court/Tribunal	Name of the specific Court/Bench	Case Category	Status of court case	Orders/Directions of the court, if any, and its relevance with the proposed project

- Copy of clearances/approvals such as Forestry Clearance, Mining Plan / Mine Closure Plan approval, NOC from CGWA, NOC from Flood and Irrigation Dept. (if req.), NBWL, NTCA, etc. wherever applicable.
- Details on the Forestry Clearance (*if forest land is involved*) should be given as per the format given:

Total ML /Project Area (ha)	Total Forest Land (ha)	Status w.r.t FC received		Status w.r.t balance Forest Land	
		Date of FC	Extent Of Forest Land	Balance area For which FC is yet to be obtained	Status of appl. For diversion of forest land

- In case of expansion proposals, Certified Compliance Report (CCR) from RO, MoEF&CC is required to be submitted.
- Necessary coordination shall be made with concerned SPCB (who is responsible for Compliance of OM dated 14.01.2025) regarding streamlining the implementation of GSR 702 and GSR 703 dated 12.11.2024 through which projects requiring prior EC were exempted from requirement of CTE.
- In case of diversion of water body / road / railway lines / transmission line, approval for the same from competent authority must be submitted.

Summary and conclusion

- An executive summary of the report covering key findings of EIA/EMP study are to be provided.

Details regarding consultant and laboratories engaged

- It should be ensured that only NABET-accredited consultants shall be engaged for the preparation of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.

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- ii. Project proponent shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.
- iii. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

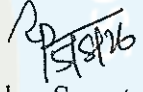
Sd/-
Member Secretary
State Level Environment Impact
Assessment Authority, Jharkhand.

Memo No : **EC/SEIAA/2025-26/5014/2025/ 130**

Ranchi, Date : **07.08.2026**

Copy to:

1. Member Secretary, Jharkhand State Pollution Control Board, Ranchi for information and necessary action.
2. Regional Office, Ministry of Environment, Forest and Climate Change, Govt. of India, 2nd Floor, Jharkhand State Housing Board (HQ), Harmu Chowk, Ranchi, Jharkhand – 834002.
3. Member Secretary, SEAC, Jharkhand, Ranchi for information and necessary action.


Member Secretary
State Level Environment Impact
Assessment Authority, Jharkhand.

