



REQUEST FOR EXPRESSION OF INTEREST(EOI)

FOR

SETTING UP OF DRY BENEFICIATION PLANT (3.5 MTY)

AT

**BHOJUDIH WASHERY PREMISES
(BHARAT COKING COAL LIMITED)**

ON

“BUILD-OWN-OPERATE (BOO) CONCEPT ”



JULY 2026

EOI Document No.: -[BCCL/WCD/GM/2026/EoI \(Dry CBP\)/16](#), dated: **21/07/2026**

**PREPARED BY
COAL & MINERAL PREPARATION DIVISION
CENTRAL MINE PLANNING & DESIGN INSTITUTE LTD.
GONDWANA PLACE, KANKE ROAD
RANCHI - 834031**

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BHARAT COKING COAL LIMITED
(A subsidiary of Coal India)
CIN : L10101JH1972GOI000918



Registered & Corporate Office:
Koyla Bhawan, Koyla Nagar,
Dhanbad-826005,
Jharkhand

**NOTICE INVITING GLOBAL “EXPRESSION OF
INTEREST (EOI)”**

FOR

**“For Setting up of 3.5 Mty Dry Beneficiation plant at Bhojudih Washery Premises,
BCCL on Build-Own-Operate (BOO) Concept”**

EOI NOTICE NO:BCCL/WCD/GM/2026/EoI(Dry CBP)/16 DATED: 21/07/2026

Bharat Coking Coal Limited (the “Coal Company”) (BCCL) intends to set up a dry beneficiation plant at Bhojudih Coal Washery premises with raw coal linkages from ENA colliery, Mudidih colliery, New Akashkinaree colliery and Bastacolla colliery on Build-Own-Operate (BOO) Concept. The assured raw coal throughput of the plant will be 3.5 MTPA on ‘arb’ (as received basis)

For this purpose, BCCL invites Expression of Interest (EOI) from the interested, established and reputed business organizations/agencies/firms through BCCL web portal (<https://www.bcclweb.in/general-notification.php>). BCCL intends to invite proposal/information in the format given in Annexures as per the EOI Document from the prospective bidders.

The details are available with effect from 21/07/2026 (05:00 PM) on the BCCL web portal (<https://www.bcclweb.in/general-notification.php>)

The last date of submission of EoI shall be 11/08/2026 (05:00 PM) and date of opening of EoI shall be 12/08/2026 (10:00 AM).

NOTICE INVITING GLOBAL “EXPRESSION OF INTEREST (EOI)”

FOR

**“For Setting up of 3.5 Mty Dry Beneficiation plant at Bhojudih Washery Premises,
BCCL on Build-Own-Operate (BOO) Concept”**

EOI NOTICE NO:BCCL/WCD/GM/2026/EoI(Dry CBP)/16 DATED: 21/07/2026

Interested parties are requested to refer the terms and conditions as laid down under this notice. The prospective bidders can email their proposal/information in the format given in Annexures as per the EOI Document to the mail id: gmwcd.bccl@coalindia.in and submit their EOI within **21 days** from the date of the publication of this Eoi i.e. 21/07/2026.

The details may also be submitted in sealed envelopes as per the as per the EOI Document to below mentioned address within **21 days** from the date of the publication of this Eoi i.e. 21/07/2026. BCCL shall not be liable for any postal delays whatsoever in receipt of EOI documents. EOI received after the stipulated date and time shall not be entertained. BCCL will not be responsible for any cost or expenses incurred by the Applicant in connection with preparation or delivery of EOI.

BCCL reserves the right to negotiate with any or all, accept or reject any or all of the EOIs received or annul this process at any time without assigning any reason whatsoever.

For more details, necessary correspondences have to be made with:

**The Head of Department (Washery Construction Division),
Bharat Coking Coal Limited
Koyla Bhawan, Koyla Nagar,
Dhanbad-826005,
Email: gmwcd.bccl@coalindia.in**

1. Introduction

Bharat Coking Coal Limited (BCCL), a Public Sector Undertaking under Coal India Limited (CIL), incorporated in 1972 and headquartered in Dhanbad, Jharkhand, stands as one of the most essential contributors to India's industrial and energy infrastructure. Established with a mandate to mine and supply high-grade coking coal, BCCL plays a pivotal role in fuelling the nation's steel sector, which relies heavily on our coal for production and manufacturing processes. BCCL was listed on NSE and BSE in January, 2026 through an Initial Public Offering (IPO).

BCCL operates several coal washeries to improve the quality of raw coal, enhancing its calorific value and reducing impurities. Through the washing process, impurities such as ash and sulfur are removed, resulting in a higher-grade coal suitable for metallurgical applications. At present, the washeries of BCCL are based on wet beneficiation processes and employ advanced beneficiation techniques, including dense media separation and froth flotation, to produce coking coal that meets the stringent requirements of steelmakers. In line with its commitment to improving coal preparation efficiency and adopting emerging technologies, BCCL is exploring the use of dry beneficiation techniques in its future coking coal washery projects.

As part of this initiative, BCCL is planning to establish the Bhojudih Coal Washery based on dry beneficiation technology. The proposed washery site is located in Purulia District of West Bengal (W.B.). The facility is proposed to be constructed on the eastern side of the existing Bhojudih Washery area of BCCL at Bhojudih, P.O. Santhaldih, Purulia (West Bengal). The tentative site is adjacent to the buffer end on BOBR line. The tentative location of site is marked on the enclosed plan (refer Drawing No. 1).

The washery is well connected by road and rail. The nearest railway station is Santhaldih which lies on Gomoh - Adra section of South Eastern Railway. It is well connected by metalled roads from Santhaldih Thermal Power Plant. A railway siding (distance from site: 1-2 km) is existing at the washery for receipt of raw coal & dispatch of final products. The site is well connected with BCCL headquarter at Dhanbad situated at a distance of about 50 Km.

2. Intent of the EOI

- 2.1 Bharat Coking Coal Limited (BCCL) has been exploring opportunities to enhance the utilization of its coking coal resources through the adoption of advanced coal beneficiation technologies. In line with the Government of India's vision of increasing domestic availability of quality coking coal and reducing dependence on imported coking coal for the steel sector, BCCL intends to set up a dry beneficiation facility at Bhojudih coal washery premises to improve coal quality and optimize resource utilization.
- 2.2 As reported in the available literature, compared to conventional wet beneficiation processes, dry beneficiation offers several potential advantages, including significant reduction in water consumption, elimination of slurry generation and associated disposal challenges, lower environmental footprint, reduced land requirement, and simplified plant operations.
- 2.3 Through this notice of EOI, proposals of the Bidders are hereby invited for detailed designing, planning, selection of technology for dry beneficiation along with allied equipment, machinery and manpower requirement etc. for 3.5 Mty Dry Beneficiation Plant.
- 2.4 The Bidders are also required to submit their offer considering raw coal feed quality as per given test results (refer Enclosure-I) and required product quality as specified in Clause 3.3.
- 2.5 The Bidders in their expressions are also required to mention the estimated operating charge along with indicative organic efficiency. It is to be noted that the project is open to any commercially proven dry technology/technologies suitable for execution of the job.
- 2.6 The technology/technologies proposed should be suitable for Indian coking coal characteristics, including high ash content, and be compliant with applicable environmental and emission standards.
- 2.7 The Bidders are requested to provide the proposal/information in the format given in Annexures attached herewith which are as below:

Annexure-I: Company Information

Annexure-II: Input from the Parties on Technology

Annexure-III: Input from the Parties on Equipment

- Annexure-IV: Input from the Parties on Power and Water
- Annexure-V: Input from the Parties on Draft NIT
- Annexure-VIA: Estimated CAPEX
- Annexure-VIB: Proposed Operating Charge
- Annexure-VIC: Estimated Manpower requirement
- Annexure-VID: Practical balance of products.
- Annexure-VIE: Indicative organic efficiency
- Annexure-VII: Input from the Parties on Requirement of Land.

- 2.8 The above information shall be used only for preliminary assessment and shall not be treated as a binding commercial quote.
- 2.9 Shortlisted parties will be given an opportunity to present their proposals to BCCL. The date, time and venue will be intimated in due course.
- 2.10 After completion of the EOI process, a NIT for open e-tender for selection of Plant Operator will be floated with specific eligibility criteria, scope of the work and other terms and conditions.

3. Brief description of the project

3.1 A. Description of work : The work consists of Planning, Design & Engineering, selection of technology for dry beneficiation along with allied equipment and machinery, procurement, delivery, erection /installation along with all associated civil and structural works, testing, successful commissioning of dry beneficiation plant including PGT with two years critical spares for smooth operation of the plant, works required for completion of the entire project even if not especially mentioned and all allied activities as well as its subsequent operation & maintenance to produce washed coal, washed coal (power) and rejects of requisite quality & quantity, conveying of washery products to the designated delivery places on "Build-Own-Operate" basis.

B. Scope of Environmental Clearance (EC): The scope of Environment Clearance shall be either under the scope of Coal Company or under the scope of Plant Operator based on mutual discussion.

3.2 Duration of the Contract (in years): _____ Months (Construction Period) + 18 (eighteen) years and thereafter extended up to ten (10) years on mutually agreed terms and conditions.

3.3 General Information of Plant

- a) Raw coal Linkage: ENA colliery, Mudidih colliery, New Akashkinaree colliery, Bastacolla colliery, BCCL
- b) Seam wise balance mineable reserves (Attached as Enclosure-II)
- c) Mine-wise coal production programme & life of the linked mines. (Attached as Enclosure-III)
- d) Top size of feed to plant: -100 mm
- e) Quality of raw coal feed to Plant
 - i. Average total moisture % (arb) : 2%
 - ii. Range of total moisture% on day-to-day basis (arb) : 1.8 % - 2.5 %
 - iii. Average moisture% (adb): 0.9 %
 - iv. Monthly average ash% (adb): 34.9 %
 - v. Range of ash % (adb) on day-to-day basis: 32 - 39%
- f) Quality of washed coal
 - i. Targeted monthly average ash (adb)%: 14 ± 2 % / As low as achievable (shall be economically viable)
 - ii. Maximum ash (monthly basis) (adb)%: 16%
 - iii. Minimum ash (monthly basis) (adb)%: 12% / As low as achievable (shall be economically viable)
 - iv. Total moisture (on apb): Monthly weighted average surface moisture of the washery products shall not exceed the monthly average surface moisture of the raw coal supplied to the washery during the corresponding month.
- g) Quality of Washed coal power (if generated)
 - i. Maximum ash (adb): 40%
 - ii. Total moisture (on apb): Monthly weighted average surface moisture of the washery products shall not exceed the monthly average surface moisture of the raw coal supplied to the washery during the corresponding month.

- h) Quality of Rejects (if generated)
 - i. Ash (adb): Preferably above 65%
 - ii. Total moisture (on apb): Monthly weighted average surface moisture of the washery products shall not exceed the monthly average surface moisture of the raw coal supplied to the washery during the corresponding month.
- i) Weighing arrangement of raw coal to be supplied to Plant: Railway RR (Railway Receipt), and FOIS (Freight Operations Information System)
- j) Raw coal feeding arrangement to Plant: Raw coal to be provided by Rail at Old Bhojudih Coal Washery Siding, feeding arrangement to be quoted by the bidder.
- k) Dispatch arrangement for Washed coal and Washed coal (power): By rail from BCW siding (1-2 km from site); responsibility of loading will be of Washery operator.
- l) Plant site (duly demarcated in Site Plan) and Modalities for leasing the land to Bidder: Tentative Site plan indicated in Drawing no. 1. For construction of the plant (including green belt around the plant premises), BCCL shall provide land (tentative area: 17.83 acres) free from all encumbrances, on a lease basis at nil or nominal lease rent.
- m) Brief details of the Plant: Plant based on commercially proven dry beneficiation technology/technologies to produce coking coal with desired quality parameters.

4 Terms and conditions

- i. BCCL reserves the right to close /cancel this Expression of Interest at any stage without assigning any reason whatsoever.
- ii. The submissions of the EOI document do not in any way commit or otherwise oblige the Coal Company to proceed with accepting the EOI.
- iii. Site Visit: Any bidder who requires to visit the site shall make his own arrangement for the same.
- iv. Each bidder is responsible and liable for all costs, expenses and liabilities incurred by it in connection with or incidental to the submission of EOI.
- v. During EOI process the prospective bidders may propose changes to be made in the bid document which may be incorporated in the final NIT, if acceptable by BCCL.

ANNEXURE –I

SUBMISSION OF GLOBAL EOI FOR THE SELECTION OF PLANT OPERATOR FOR 3.5 MTY DRY BENEFICIATION PLANT AT BHOJUDIH WASHERY PREMISES, BCCL

(To be printed on the letter head of the interested party/agency and duly signed and stamped)
[This EOI form supported by respective documentary evidence, duly filled, signed and sealed in original is to be submitted to the office of HOD (WCD), BCCL before 11.08.2026 at 05:00 PM.]

To

**The Head of Department (Washery Construction Division),
Bharat Coking Coal Limited
Koyla Bhawan, Koyla Nagar,
Dhanbad-826005,**

Dear Sir,

We are interested for the job of **Setting up of 3.5 Mty Dry Beneficiation Plant at Bhojudih Washery Premises, BCCL on BOO concept**. We have gone through the terms and conditions and scope of the work as detailed in the notice of inviting the EOI.

The following are the details of our firm which are supported by documentary evidence:

Name of the Company /firm	
Registered office address and contact details	
Name and designation of authorized signatory for this EOI	
Address for communication of authorized signatory with contact details	
Details of business owned by the company/firm	
Organization details CIN GSTIN PAN PF Account No. ESI code Shareholding pattern MSME/Start-up (if applicable) Other details	
Average Annual Turnover of last three consecutive financial years	
Net-worth at the close of last financial year i.e FY 2025-26 or FY 2024-25 (in case data for FY 2025-26 is not available)	
Credentials towards having experience on similar nature of job	

We are submitting our proposal along with indicative plan, budgetary offer for the job of **Setting up of 3.5 Mty Dry Beneficiation Plant at Bhojudih Washery Premises, BCCL on Build-Own-Operate Concept**.

SEAL OF COMPANY

Name : **Designation** :

Authorized Signature, Name & Designation

INPUT FROM THE PARTIES ON TECHNOLOGY

A. Description of Beneficiation Scheme alongwith Flow Diagram

Description of the proposed process including raw coal receiving section, beneficiation section (with details of the working principles of the proposed beneficiation equipment) and products storage & dispatch section (alongwith a legible flowsheet indicating the mass and ash balance and the size fractions at each stage of the process) is to be given by the Party.

B. Proposed Time schedule for different activities

S.No.	Particulars	Duration (months)
1.	Obtaining all necessary clearances including but not limited to EC, CTE, CTO, AERB approvals if any etc.	
2.	Site survey & soil investigation	
3.	Detailed designing	
4.	Civil construction including Site development works	
5.	Supply of P&M	
6.	Erection/installation of P&M	
7.	Trial run & PGT	
	Total timeline for setting up of the Plant	

INPUT FROM THE PARTIES ON EQUIPMENT

A. Format for Furnishing Technical Details of Main Mechanical & Electrical Equipment

Sl. No.	Name of the Equipment	Type	No.	Capacity of each equipment	Technical Specification	Life (in years)

B. Format for Furnishing Details of Civil Buildings & Structures

Sl. No.	Name of Building/ structure	Type	Cap./size & other details	Any other information

INPUT FROM THE PARTIES ON POWER AND WATER

A. Format for Furnishing the Requirement of Power

Sl. No.	Particulars	Power requirement
1	During construction of Plant a) Demand (in kVA) b) Power Requirement (in kWh or kVAh)	
2	During regular operation of Plant a) Specific Power Consumption (kWh or kVAh / tonne of raw coal on 'dry basis') b) Demand(in kVA)	

B. Format for Furnishing the Requirement of Water

Sl. No.	Particulars	Water requirement
1	During construction of Plant (cum/ day)	
2	During regular operation of Plant (cum/ tonne of raw coal on 'dry basis')	

INPUT FROM THE PARTIES ON DRAFT NIT

Draft clauses of the proposed tender document of open e-tender:

Sl. no.	Clause	Particulars	Suggestion of the party
1.	Earnest Money Deposit (EMD)	Rs. 50,00,000 (Indian Rupees Fifty Lakhs)	
2.	Scope of Work	The work consists of Planning, Design & Engineering, selection of technology for dry beneficiation along with allied equipment and machinery, procurement, delivery, erection /installation along with all associated civil and structural works, testing, successful commissioning of dry beneficiation plant including PGT with two years critical spares for smooth operation of the plant, works required for completion of the entire project even if not especially mentioned and all allied activities as well as its subsequent operation & maintenance to produce washed coal, washed coal (power) and rejects of requisite quality & quantity, conveying of washery products to the designated delivery places on "Build-Own-Operate" basis.	
3.	Scope of Environmental Clearance (EC)	The scope of Environment Clearance shall be either under the scope of Coal Company or under the scope of Plant Operator based on mutual discussion.	
4.	Other statutory & regulatory clearances	Obtaining all necessary statutory/ regulatory and other clearances prevalent in the country shall be the responsibility of PO.	
5.	Dust Suppression and dust control system	The Bidder shall design, engineer, supply, erect, test, commission and ensure satisfactory performance of a comprehensive Dust Suppression and Dust Extraction System for the Dry Beneficiation Plant, so as to effectively control fugitive and suspended dust emissions from all sources within the plant.	
6.	Eligible Bidders	The bidder may be a proprietary concern/ partnership firm/ body corporate/ Company registered under the Companies Act 2013 or any previous Company Law/Act as applicable	

Sl. no.	Clause	Particulars	Suggestion of the party
		in India/ Joint Venture or equivalent in case of Foreign Bidders. In case of Joint Venture (JV) or consortium unless otherwise specified, all the partners shall be jointly and severally liable. All Indian bidders should be registered under GST and should possess GST Registration Certificate (with GSTIN).	
7.	Technical Qualification Requirement	A. The Bidder/ Associate(s) shall have a proven track record of successful completion of setting up atleast one (single unit) Coal/ Mineral Beneficiation Plant (based on dry/wet technology) or Coal/bulk material Handling plant (having receiving, storage, crushing and rapid loading arrangement) of minimum 1.0 Mty capacity in the last twenty-five (25) years (from last day of the month previous to the one in which bid is invited). OR B. The Bidder/ Associate(s) shall have the experience of operation and maintenance (O&M) of atleast one (single unit) Coal/ Mineral Beneficiation Plant (based on dry/wet technology) of minimum 1.0 Mty capacity for a period of minimum 1 year in the last 25 years (from last day of the month previous to the one in which bid is invited) with minimum 1.0 million tonnes quantity of raw coal/mineral handled	
8.	Net Worth	The bidder must have minimum net worth as per [*financial year] of ₹ ... Crores at the close of the last financial year from the date of NIT based on their latest audited annual accounts. Audited balance sheet in support of Net Worth is required to be furnished by the bidder. *If bid is floated during the period April - June the bidder must have minimum net worth in the year preceding to the last financial year	

Sl. no.	Clause	Particulars	Suggestion of the party
		previous to the one in which bid is invited or else as per the last financial year in which bid is invited. In case of Foreign Bidder if documentary evidences for Net Worth is in Foreign Currency the same shall also be furnished in INR duly certified by appropriate authority considering the rate of conversion as prevailing on the date of the documentary evidences in foreign currency.	
9.	Bid Validity	The validity period of the tenders shall be 480 (Four Hundred Eighty) days (When Environment Clearance is under the scope of Coal Co) or 180 (One Hundred Eighty) days (When Environment Clearance is under the scope of Plant Operator) from the end date of bid/offer submission or extended date of bid submission end date, whichever is later.	
10.	Security Deposit	The successful bidder shall submit, a Bank Guarantee in specified format/Govt. Securities, FDR or any other form of deposit in favour of Coal Co. of an amount equivalent to 10 (ten)% of the annual operating charges [For calculation of amount of SD, Annual Operating charge = 3500000 tonnes x L1 operating charge in ₹/tonne of raw coal (dry)], from a scheduled/ nationalised Bank, within 28 days or extension if any after issue of LOA and before signing of the contract document.	
11.	LD Clause	The bidders in their offer shall guarantee the construction period (including commissioning) of _____ months which will be effective from the date of signing of Agreement or handing over the site whichever is later. In case, the commissioning of the plant is delayed beyond the scheduled period of _____ months for the reasons not attributable to BCCL, the successful bidder shall have to pay BCCL liquidated damage at the rate of 2.5 percent of the annual operating charge (as per quoted value in the offer) along with applicable GST for each month of delay in commissioning of the plant, subject to a maximum of 10% of the annual operating	

Sl. no.	Clause	Particulars	Suggestion of the party
		charge along with applicable GST [For calculation of amount of LD, Annual Operating charge = 3500000 tonnes x L1 operating charge in ₹/tonne of raw coal (dry)]. Liquidated damage for late commissioning is however subject to force majeure clause.	
12.	Contract Period	Unless otherwise terminated under the provisions of any other relevant clause, the Contract of the Plant shall continue till expiry of contract for operation & maintenance i.e. 18 years from the date of commercial operation of the Plant or thereafter extended upto ten (10) years on mutually agreed terms and conditions.	
13.	Trial Run & PGT	The Plant Operator shall carry-out the trial-operation and Performance Guarantee Test within a period of four (4) months. Trial run includes No Load Testing of each equipment, Full No-Load Test of whole Plant and Full Load Test. Duration of PGT will be of one month of which 6 (six) consecutive days on rated capacity is the minimum requirement. In case, performance is below rated capacity, the successful bidder will have to modify the plant for achieving rated capacity on a sustained basis within one month. The successful bidder is also required to establish the additional 20% capacity (over & above the rated capacity) of the plant for atleast 2 consecutive days or any other duration as may be agreed to, between the EIC and Plant Operator. If PGT is successfully completed within 1 month period then plant can be accepted for commercial operation. BCCL will supply requisite quantity of raw coal to the Plant Operator for carrying out the load trial run and performance guarantee tests by the Plant Operator. BCCL shall have to be informed by the Plant Operator in writing at least thirty (30) days in advance for the coal.	

A. Estimated CAPEX

S.No.	Particulars	Cost (Crores)
1	Service Building	
2	Plant & Machinery	
3	HEMM	
4	Any other head	
	Total CAPEX	

B. Proposed Operating Charge.

Particulars	(₹/tonne)
Operating Charge per tonne of raw coal (on dry basis) during the operation of the plant (@ 14% ash of washed/clean coal)	

C. Estimated Manpower requirement (Highly skilled/skilled/semi-skilled/unskilled)**D. Practical balance of products (@14% ash of washed/clean coal).**

Product	Size (mm)	Wt%	Ash%
Washed/Clean coal			
Washed coal (Power)			
Rejects (if generated)			
Total			

E. Indicative organic efficiency (@14% ash of washed/clean coal)

INPUT FROM PARTIES ON REQUIREMENT OF LAND

The parties shall indicate total requirement of land based on the format given below:

Sl. No.	Component	Total area (Ha)
1.	Main plant & allied infrastructure	
2.	Storage for raw coal	
3.	Storage for washed coal and washed coal (power)	
4.	Green belt	
	Total	

WASHABILITY TEST REPORT FOR ESTABLISHING THE DRY BENEFICIATION PLANT AT BHOJUDIH WASHERY PREMISES, BCCL

1.0 INTRODUCTION

M/s Bharat Coking Coal limited (BCCL), vide Letter No. B.C.C.L/W.C. D/G.M/24/529(H) dated 22.12.2025, requested Coal and Mineral Preparation Division, CMPDI, Ranchi to carry out the washability tests of coal samples for establishing the Dry beneficiation plant at Bhojudih washery premises.

Coal samples from the exposed seams of IV (T) & IV (B), Bastacolla Colliery, Bastacolla Area, Seam V/VI/VII/VIII (Comb.) IX/X, Ena Colliery, Kusunda Area, seam XI/XII, X, IX, VIIIB, VIIIA, and V/VI/VII (Comb.) of New Akashkinaree Colliery, Govindpur Area and seam VII, VIII, VIIIA, VIIIC and X of Mudidih Colliery, Sijua area of BCCL were sent by M/s BCCL and was received at CMP Laboratory, CMPDI, Ranchi on 25.02.2026 for testing. The details of sample preparation and the washability test results are given in subsequent paragraphs.

2.0 SAMPLE PREPARATION

As per the advice, One sample was prepared from the received coal samples of different collieries, as detailed below:

Colliery	Seam
Bastacolla Colliery	IV (T) & IV (B)
Ena Colliery	V/VI/VII/VIII (Comb.) IX/X
New Akashkinaree Colliery	XI/XII, X, IX, VIIIB, VIIIA, and V/VI/VII (Comb.)
Mudidih Colliery	VII, VIII, VIIIA, VIIIC and X

3.0 TESTING PROCEDURE

The testing procedure for testing of coal sample is given below:

- I. Supervision during collection of representative coal sample(s). Mixing, Coning & Quartering and dividing entire coal sample in four parts (Part-I, Part-II, Part-III & Part IV(reserve)).
- II. Screening of coal sample (Part-I) "as received" in laboratory at 200mm, 100mm, 50mm, 25mm, 13mm, 6mm, 3mm & 0.5mm screen aperture and determination of ash% & moisture% of each screened fraction.
- III. Proximate analysis of "as received" coal sample under air-dried and equilibrated condition i.e. 60% RH & 40°C including GCV & HGI.
- IV. Crushing of as received coal sample (Part-II) down to (-) 50mm size and screening at 25mm, 13mm, 6mm, 3mm & 0.5mm screen apertures and determination of ash% & moisture of each screened fraction.
- V. Float & Sink test of 50-25mm, 25-13mm, 13-6mm, 6-3mm & 3-0.5mm size fractions of crushed coal obtained at sl. No. IV and determination of wt% & ash% at each specific gravity (from 1.4 to 1.9 at an interval of 0.1).
- VI. Crushing of as received coal sample (Part-III) down to (-) 13mm size and screening at 6mm, 3mm & 0.5mm screen apertures and determination of ash% & moisture of each screened fraction.
- VII. Float & Sink test of 13-6mm, 6-3mm & 3-0.5mm size fractions of crushed coal obtained at sl. No. VI and determination of wt% & ash% at each specific gravity (from 1.4 to 1.9 at an interval of 0.1).
- VIII. Generation of Clean coal at about 18% ash level based on the float and sink test carried out as above.
- IX. Proximate analysis of generated clean coal and power grade coal sample under air-dried and equilibrated condition i.e. 60% RH & 40°C including GCV & HGI.
- X. Froth Flotation Test of (-) 0.5mm coal sample generated at sl. No. IV. Determination of weight% and ash% of clean and tailings.
- XI. Wet sieve analysis of fine coal sample (-) 0.5mm generated at sl. No. IV at 72# mesh, 100# mesh, 200#mesh and 300# mesh. Determination of wt.% and ash% of each screened fractions.

- XII. Petrography Analysis of Raw coal (200-0mm), generated clean coal and power grade coal.
- XIII. Ultimate Analysis and Ash Fusion Temperature of raw coal (200-0mm), generated clean coal and power grade coal.
- XIV. Preparation & Submission of Test Report

4.0 WASHABILITY TEST RESULTS

4.1 Part-I

4.1.1 SCREEN-CUM-ASH ANALYSIS

The coal sample (Part-I) was subjected to screen analysis at 200mm, 100mm, 50mm, 25mm, 13mm, 6mm, 3mm & 0.5 mm aperture screens. Weight%, ash % and moisture % were determined for each size fraction. The results are given in Table No.-1.

Table No.-1
Screen-cum-ash-cum- moisture Analysis

Mine/Plant-	Bhojudih Washery
Seam-	Combined
Sample No.-	CMPDI/CMP Lab/694/2026-27
Part-	I
Nature of sample-	RoM Coal sample (as received)

Size(mm)	Wt. %	Ash %	Moisture%
+200	1.2	41.1	0.6
200-100	4.0	38.4	0.8
100-50	15.8	37.3	0.7
50-25	25.4	36.2	0.7
25-13	16.5	34.5	0.8
13-6	13.1	33.4	0.9
6-3	8.6	32.7	1.0
3-0.5	8.4	31.8	1.2
(-) 0.5	7.1	30.8	1.5
Total	100.0	34.8	0.9

4.2 Part-II

4.2.1 SCREEN-CUM-ASH ANALYSIS

The coal sample (Part-II) was crushed down to (-) 50mm and was subjected to screen analysis at 25mm, 13mm, 6mm, 3mm and 0.5mm aperture screens. Weight%, ash % and moisture % were determined for each size fraction. The results are given in Table No.-2.

Table No.-2
Screen-cum-ash-cum- moisture Analysis

Mine/Plant-	Bhojudih Washery
Seam-	Combined
Sample No.-	CMPDI/CMP Lab/694/2026-27
Part-	II
Nature of sample-	RoM Coal sample (Crushed at (-) 50mm)

Size(mm)	Wt. %	Ash %	Moisture%
50-25	35.1	37.5	0.6
25-13	18.3	35.2	0.7
13-6	14.2	34.4	0.9
6-3	11.4	33.2	0.9
3-0.5	9.9	32.6	1.1
(-) 0.5	11.1	31.6	1.3
Total	100.0	35.0	0.8

Following data has been computed from Table no. 2

Table No.-3
Screen-cum-ash Analysis

Mine/Plant-	Bhojudih Washery
Seam-	Combined
Sample No.-	CMPDI/CMP Lab/694/2026-27
Part-	II
Nature of sample-	RoM Coal sample (Crushed at (-) 50mm)

Size(mm)	Wt. %	Ash %
50-25	39.5	37.5
25-13	20.6	35.2
13-6	16.0	34.4
6-3	12.8	33.2
3-0.5	11.1	32.6
Total	100.0	35.4

4.2.2 FLOAT & SINK TEST OF DIFFERENT SIZE FRACTIONS

Float and Sink test of crushed RoM coal sample (Part-II) of 50-25 mm, 25-13mm, 13-6mm, 6-3mm and 3-0.5mm size fractions have been carried out at 1.40 to 1.90 at an interval of 0.1 specific gravity. The test results are given in Table No.- 4. The float and sink test results of 50-0.5 mm have been computed based on the above mentioned float & sink test and screen analysis of RoM coal sample (part-II) crushed down to (-)50 mm size fraction and is shown graphically in the form of washability curves in Plate No.- 01.

Table No.- 4
Float & Sink Test Results

Mine/Plant- Bhojudih Washery
Seam- Combined
Sample No.- CMPDI/CMP Lab/694/2026-27
Part- II
Nature of sample- RoM Coal sample (Crushed at (-) 50mm)
Size of coal tested- 50-25, 25-13, 13-6, 6-3 and 3-0.5mm
% of total coal tested 88.9
on the basis of total raw coal-

Size(mm)	50-25		25-13		13-6		6-3		3-0.5		50-0.5					Cu.Wt. % (total raw coal basis)
Wt %100	39.5		20.6		16.0		12.8		11.1		100.0					
Sp.gr.	Wt. %	Ash %	Wt. %	Ash %	Wt. %	Ash %	Wt. %	Ash %	Wt. %	Ash %	Wt.%	Ash%	Cu.Wt %	Cu.Ash %		
<1.40	9.1	13.5	7.8	12.4	9.4	10.7	8.2	9.7	11.5	7.8	9.0	11.6	9.0	11.6	8.0	
1.40 -1.50	18.0	23.6	17.8	21.3	18.7	20.2	17.4	18.0	18.7	17.5	18.1	21.2	27.1	18.0	24.1	
1.50 -1.60	19.3	28.5	18.5	26.6	19.7	25.8	20.8	24.7	19.8	23.7	19.4	26.6	46.6	21.6	41.4	
1.60 -1.70	10.9	37.6	12.6	35.1	9.4	34.4	14.3	33.8	10.7	32.7	11.4	35.5	58.0	24.3	51.5	
1.70 -1.80	17.4	43.8	19.9	41.6	18.9	40.8	16.4	39.4	13.1	38.6	17.5	41.8	75.5	28.4	67.1	
1.80-1.90	11.0	48.6	12.0	46.3	9.6	45.0	10.1	44.7	9.3	43.1	10.7	46.5	86.2	30.6	76.6	
>1.90	14.3	68.2	11.4	66.1	14.3	65.6	12.8	64.7	16.9	63.8	13.8	66.4	100.0	35.6	88.9	
Total	100.0	37.8	100.0	35.5	100.0	34.5	100.0	33.2	100.0	32.2	100.0	35.6	-	-	-	

4.2.3 WASHING POSSIBILITIES

The washing possibilities of coal of 50-0.5 mm size at different specific gravities based on the Float & Sink test results are given in Table No.- 5.

Table No.- 5
Washing Possibilities at Different Specific Gravities

Mine/Plant-	Bhojudih Washery
Seam-	Combined
Sample No.-	CMPDI/CMP Lab/694/2026-27
Part-	II
Nature of sample-	RoM Coal sample (Crushed at (-) 50mm)
Size of coal tested-	50-25, 25-13, 13-6, 6-3 and 3-0.5mm
% of total coal tested on the basis of total raw coal-	88.9

Sp. Gr.	Clean coal at each sp. gr.		Sinks at each sp. gr.	
	Wt%	Ash%	Wt%	Ash%
1.4	9.0	11.6	91.0	38.0
1.5	27.1	18.0	72.9	42.1
1.6	46.6	21.6	53.4	47.8
1.7	58.0	24.3	42.0	51.1
1.8	75.5	28.4	24.5	57.7
1.9	86.2	30.6	13.8	66.4

4.3 Part-III

4.3.1 SCREEN-CUM-ASH ANALYSIS

The coal sample (Part-III) was crushed down to (-) 13mm and was subjected to screen analysis at 6mm, 3mm and 0.5mm aperture screens. Weight%, ash % and moisture % were determined for each size fraction. The results are given in Table No.-6.

Table No.-6
Screen-cum-ash-cum- moisture Analysis

Mine/Plant- Bhojudih Washery
 Seam- Combined
 Sample No.- CMPDI/CMP Lab/694/2026-27
 Part- III
 Nature of sample- RoM Coal sample (Crushed at (-) 13mm)

Size(mm)	Wt. %	Ash %	Moisture%
13-6	33.1	37.5	0.8
6-3	30.7	34.3	0.9
3-0.5	22.6	33.3	1.1
(-) 0.5	13.6	32.4	1.1
Total	100.0	34.9	0.9

Following data has been computed from Table no. 6

Table No.-7
Screen-cum-ash Analysis

Mine/Plant- Bhojudih Washery
 Seam- Combined
 Sample No.- CMPDI/CMP Lab/694/2026-27
 Part- III
 Nature of sample- RoM Coal sample (Crushed at (-) 13mm)

Size(mm)	Wt. %	Ash %
13-6	38.3	37.5
6-3	35.5	34.3
3-0.5	26.2	33.3
Total	100.0	35.3

4.3.2 FLOAT & SINK TEST OF DIFFERENT SIZE FRACTIONS

Float and Sink test of crushed RoM coal sample (Part-II) of 13-6mm, 6-3mm and 3-0.5mm size fractions have been carried out at 1.40 to 1.90 at an interval of 0.1 specific gravity. The test results are given in Table No.- 8. The float and sink test results of 13-0.5 mm have been computed based on the above mentioned float & sink test and screen analysis of RoM coal sample (part-III) crushed down to (-)13 mm size fraction and is shown graphically in the form of washability curves in Plate No.- 02.

Table No.- 8
Float & Sink Test Results

Mine/Plant- Bhojudih Washery
Seam- Combined
Sample No.- CMPDI/CMP Lab/694/2026-27
Part- III
Nature of sample- RoM Coal sample (Crushed to (-) 13mm)
Size of coal tested- 13-6, 6-3 and 3-0.5mm
% of total coal tested on the basis of total raw coal- 86.4

Size(mm)	13-6		6-3		3-0.5		13-0.5					Cu.Wt. % (total raw coal basis)
Wt %100	38.3		35.5		26.2		100.0					
Sp.gr.	Wt. %	Ash %	Wt. %	Ash %	Wt. %	Ash %	Wt%	Ash%	Cu.Wt%	Cu.Ash %		
<1.40	8.3	11.5	9.2	10.5	10.8	9.5	9.3	10.5	9.3	10.5	8.0	
1.40 -1.50	19.4	23.2	18.4	22.1	19.4	20.3	19.0	22.0	28.3	18.3	24.5	
1.50 -1.60	20.2	29.6	24.8	28.2	21.6	26.4	22.2	28.2	50.5	22.7	43.6	
1.60 -1.70	9.9	37.3	10.8	35.2	11.9	34.1	10.7	35.6	61.3	24.9	52.9	
1.70 -1.80	18.8	44.2	16.5	42.2	14.6	41.4	16.9	42.9	78.1	28.8	67.5	
1.80-1.90	11.1	51.8	9.9	50.1	10.6	49.5	10.5	50.6	88.7	31.4	76.6	
>1.90	12.3	68.4	10.4	66.0	11.1	65.3	11.3	66.8	100.0	35.4	86.4	
Total	100.0	37.6	100.0	34.6	100.0	33.3	100.0	35.4	-	-	-	

4.3.3 WASHING POSSIBILITIES

The washing possibilities of coal of 13-0.5 mm size at different specific gravities based on the Float & Sink test results are given in Table No.- 9.

Table No.- 9
Washing Possibilities at Different Specific Gravities

Mine/Plant-	Bhojudih Washery
Seam-	Combined
Sample No.-	CMPDI/CMP Lab/694/2026-27
Part-	III
Nature of sample-	RoM Coal sample (Crushed to (-) 13mm)
Size of coal tested-	13-6, 6-3 and 3-0.5mm
% of total coal tested on the basis of total raw coal-	86.4

Sp. Gr.	Clean coal at each sp. gr.		Sinks at each sp. gr.	
	Wt%	Ash%	Wt%	Ash%
1.4	9.3	10.5	90.7	37.1
1.5	28.3	18.3	71.7	41.1
1.6	50.5	22.7	49.5	46.8
1.7	61.3	24.9	38.7	49.9
1.8	78.1	28.8	21.9	55.4
1.9	88.7	31.4	11.3	59.8

4.4 GENERATION OF CLEAN COAL

4.4.1 GENERATION OF CLEAN COAL AT 18 % Ash LEVEL FROM 50-0.5MM COAL SAMPLE.

As per the advice, it was decided to generate the clean coal at 18% ash level for the size fraction of 50-0.5 mm. The results of generated clean coal of 50-0.5mm size fraction with specific gravity of cut have been presented in Table No. - 10

Table No. – 10
Results of Generated Clean Coal of (50-0.5) mm Size Fraction

	Sp.gr.	wt%	Ash%
Clean coal	1.50	27.5	18.1
Rejects		72.5	41.7
	Total	100.0	35.2

4.4.2 WET SIEVE ANALYSIS

Wet sieve analysis at 72, 100, 200 & 300 mesh sieves was done for the size fraction -0.5 mm obtained from raw coal (as received) crushed down to (-) 50mm. The wt% and ash% of each size fractions were determined and the results are given in Table No- 11.

Table No- 11
Wet Sieve analysis of -0.5mm coal

Size(mesh)	Wt %	Ash %
+ 72	35.9	32.8
72 - 100	16.6	29.7
100 - 200	17.5	28.9
200 - 300	8.2	27.7
-300	21.8	34.3
Total	100.0	31.5

4.4.3 OTHER TESTS VIZ. PROXIMATE ANALYSIS, GROSS CALORIFIC VALUE, HARDGROVE GRINDABILITY INDEX (HGI), ULTIMATE ANALYSIS, ASH FUSION TEMPERATURE AND PETROGRAPHIC ANALYSIS. LOW TEMPERATURE AND GRAY KING ASSAY TEST (LTGK) AND SWELLING INDEX (SI)

Proximate analysis on air-dried basis was carried out for Raw coal sample (as received), generated clean coal and Power grade coal. The results of proximate analysis including GCV, HGI, LTGK and SI is given in Table No.- 12. The Test results of Ultimate Analysis and Ash Fusion Temperature is given in Table No. 13 & 14. The results of Petrography Analysis of raw coal and clean coal is given in Table no. 15.

Table No.- 12
Proximate Analysis of Raw Coal Sample, Generated Clean Coal
and Power grade coal

Particulars	Raw coal (as Received)		Generated Clean coal		Power Grade Coal	
	Air Dry Basis	Equilibrated Basis	Air Dry Basis	Equilibrated Basis	Air Dry Basis	Equilibrated Basis
i) Moisture %	0.9	1.1	1.1	1.4	0.7	0.8
ii) Ash %	34.9	34.8	18.1	18.0	41.7	41.7
iii) VM %	16.2	16.2	19.4	19.3	14.5	14.5
iv) FC %	48.0	47.9	61.4	61.2	43.1	43.1
v) GCV kcal/kg	5097	-	6854	-	4666	-
vi) HGI	82	-	88	-	78	-
vii) SI	1	-	1.5	-	-	-
viii) LTGK	D	-	F	-	-	-

Table No.-13
Ultimate Analysis of Raw Coal Sample,
Generated Clean Coal and Rejects

Particulars	Raw Coal	Generated Clean Coal	Power Grade Coal
Carbon %	54.36	72.41	47.91
Hydrogen %	3.14	4.00	2.94
Nitrogen %	1.26	1.66	1.19
Sulphur %	0.44	0.67	0.49

(The Test is conducted by CC Lab CMPDI (HQ))

Table No- 14
Ash Fusion Temperature of Raw Coal Sample,
Generated Clean Coal and Rejects

Particulars	Raw Coal	Generated Clean Coal	Power Grade Coal
IDT(⁰ C)	>1500	>1500	>1500
ST(⁰ C)	>1500	>1500	>1500
HT(⁰ C)	>1500	>1500	>1500
FT(⁰ C)	>1500	>1500	>1500

(The Test is conducted by CC Lab CMPDI (HQ))

Abbreviations used: IDT: Initial deformation temperature, ST: sphere temperature HT: hemisphere temperature, FT: flow temperature.

Table No.- 15
Petrographic Analysis of Raw Coal Sample, Generated Clean Coal
and Middlings

Particulars	Maceral composition %				Maceral composition % (Vmmf %)			Rr%
	Vit	Lipt	Int	Vmm	Vit	Lipt	Int	
Raw Coal	32.8	0.4	43.6	23.2	42.7	0.5	56.8	1.23
Clean Coal	28.4	0.4	62.4	8.8	31.1	0.4	68.4	1.29
Power Grade Coal	15.5	Trace	76.1	8.4	16.9	Trace	83.1	1.32

(The Test is conducted by Coal Characterization Laboratory, CMPDI (HQ))

Abbreviations used: Vit: Vitrinite, Lipt: Liptinite, Int: Inertinite, Rr: Random Vitrinite Reflectance, Vmm: Visible Mineral Matter. Vmmf: Visible mineral matter free basis

4.4.4 FROTH FLOTATION TEST OF (-) 0.5 MM COAL: Froth flotation test of (-) 0.5mm coal fines generated after crushing the coal sample to (-) 50 mm. The results are given in Table No. 16.

Operating conditions:

Size of sample: (-) 0.5 mm

Solid concentration: 10%

Mixing time: 2.0 minute

Conditioning time: 2.0 min.

Table No.- 16
Froth Flotation Test of Coal sample (- 0.5mm) of Sub-Sample No.-01.

Solid Concentration	RPM	NALCO Reagent (collector)	NALCO Reagent (Frother)	Collection Time(min.)	Clean		Tailings		Overall
		Kg/T	Kg/T		Wt %	Ash %	Wt %	Ash %	Ash %
10	1300	0.4	0.1	3.0	23.8	18.9	76.2	35.4	31.5
10	1300	0.8	0.2	3.0	53.1	20.3	46.9	45.1	31.9
10	1300	1.2	0.3	3.0	80	24.8	20	58.7	31.6
10	1300	1.6	0.4	3.0	88.2	26.1	11.8	69.8	31.3
10	1300	2.0	0.5	3.0	92.4	28.4	7.6	73.1	31.8

ENCLOSURE-II

Seam wise Balance Mineable Reserve (Fig in Million Tonnes as on 01.04.26)

Seam	Govindpur (New Akashkinaree Colliery)		Sijua (Mudidih Colliery)		Kusunda (ENA Colliery)		Bastacolla (Bastacolla Colliery)	
	Balance Mineable Reserve	Seam	Balance Mineable Reserve	Seam	Balance Mineable Reserve	Seam	Balance Mineable Reserve	Seam
XIIIT	0.000	XVT / XVB	0.000	XI / XII	0.032	0	4.118	
XIIIB	0.750	XIV	0.000	XIX	6.275	I	6.925	
XI/XII	0.000	XIII	0.000	VII/VIII	11.187	II	4.803	
XA	1.602	XII	0.000	IV T	5.084	III	0.276	
IX	2.720	XI	0.000	IV B	7.942	IV TOP	4.183	
VIIIC	0.480	X	0.000	IIIT	13.738	IV BOT	1.182	
VIIIB	5.146	XA	0.000	III B	0.827	V/VI/VII/VIII	0.326	
VIIIA	1.951	VIII/VIIIA	0.038	II T	9.585	TOTAL	21.813	
VII	16.260	VII	8.984	II B	1.501			
V/VI	36.669	V/VI	41.623	I T	6.511			
IVT	3.110	IV	57.315	I B	2.041			
III	1.822	III	11.250					
I/II	0.000	II	12.857					
TOTAL	70.509	I	6.427					
		TOTAL	138.494	TOTAL	64.721			

ENCLOSURE-III**Mine wise production projection (Million Tonne)**

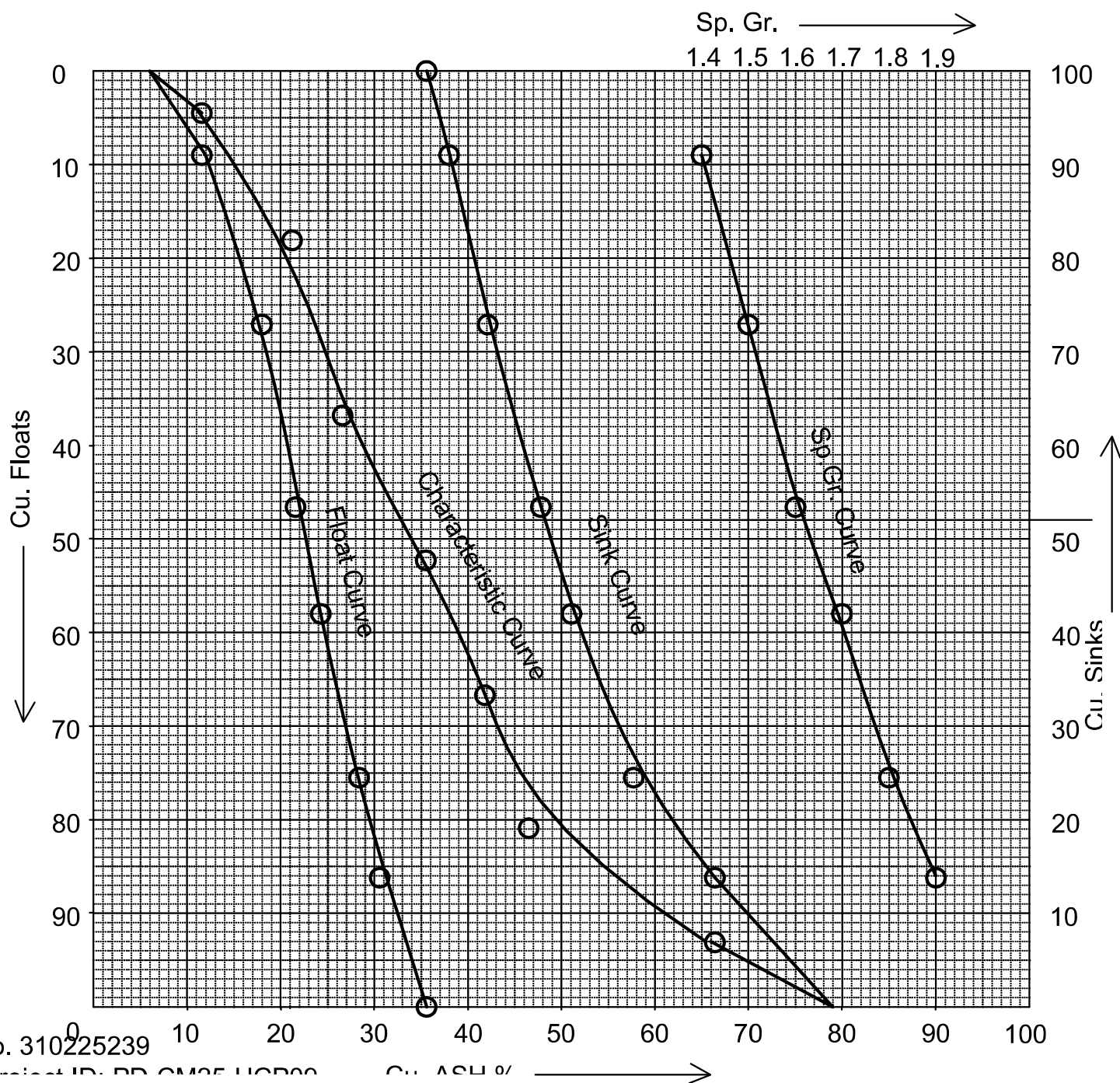
Year	Govindpur (New Akashkinaree Colliery)	Kusunda (ENA Colliery)	Sijua (Mudidih Colliery)	Bastacolla (Bastacolla Colliery)
2025-26	2.88	4.00	1.22	2.10
2026-27	2.88	4.00	1.24	1.80
2027-28	2.82	4.00	1.80	1.80
2028-29	2.82	4.00	1.80	1.80
2029-30	2.82	4.00	1.80	1.80
2030-31	2.82	4.50	1.80	1.60
2031-32	2.82	4.00	2.10	1.60
2032-33	2.82	3.50	1.80	1.25
2033-34	2.73	2.50	1.36	
2034-35	2.73	2.00		
2035-36	2.73	1.50		
2036-37	2.73	1.09		
2037-38	2.65			
2038-39	0.87			

Note: In the event of any disruption in the supply of raw coal from the proposed linked mines, the requirement of coal of similar quality shall be met from alternate sources.

Washability Curve of Crushed coal sample of Coal samples of Bhojudih Washery, BCCL

Sample No. : CMPDI/CMPLab/ 694/2026-27
Nature of Sample : Crushed to -50 mm
Seam : Combined

Size of coal tested : 50 - 0.5 mm
% of total coal tested : 88.9



Washability Curve of Crushed coal sample of Coal samples of Bhojudih Washery, BCCL

Sample No. : CMPDI/CMPLab/ 694/2026-27
 Nature of Sample : Crushed to -13mm
 Seam : Combined

Size of coal tested : 13 - 0.5 mm
 % of total coal tested : 86.4

