

CC/TECH/CCO/ANNUALGRADE/ 360788

Government of India
Ministry of Coal
Office of the Coal Controller

Scope Minar, Core-I, 5th floor,
Delhi – 110092.

Dated: 4th Feb 2025

Office Memorandum

Sub- Modified laid down procedure and method of sampling & analysis of coal for the purpose of declaration and maintenance of grade of coal mined in the Colliery.

In exercise of the powers conferred under sub-rule 1 of rule 4 of the Colliery Control (Amendment) Rules, 2021, I am directed to convey the laid down procedure and method of sampling & analysis of coal for the purpose of declaration and maintenance of grade of coal mined in the Colliery which are furnished in **Annexure-I**.

The modified laid down procedure and method of sampling & analysis of coal for the purpose of declaration and maintenance of grade of coal mined in the Colliery supersedes earlier issued procedures

This issues with the approval of Competent Authority.

Yours Faithfully,

Aarti Mahawar
4/2/25
(Aarti Mahawar)
Dy Director

Enclosure As above

1. All Nominated owners Coal and Lignite Companies
2. All OSD Regional CCO Dhanbad, Ranchi, Sambalpur, Bilaspur, Nagpur and Kothagudem
3. OSD CCO Delhi and Kolkatta
4. PS to DDG office Ministry of Coal

**GOVERNMENT OF INDIA
OFFICE OF THE COAL CONTROLLER'S ORGANISATION
MINISTRY OF COAL**

LAI D DOWN PROCEDURE AND METHOD OF SAMPLING & ANALYSIS OF COAL FOR THE PURPOSE OF DECLARATION AND MAINTENANCE OF GRADE OF COAL MINED IN THE COLLIERY.

In exercise of the powers conferred under sub-rule 1 of rule 4 of the Colliery Control (Amendment) Rules, 2021 continued in force under Sub-sections (1) & (2) of Section 18 of the Mines & Minerals (Development and Regulation) Act 1957 (67 of 1957) and vide MoC's Gazette (Extraordinary) Notification S.O.2920 (E) dated 30.12.2011, MoC's Gazette (Extraordinary) Notification S.O. No 174 dated 24th January 2019 and MoC's Gazette (Extraordinary) Notification S.O. No S.O. 357(E) dated 20th January 2023, the procedure and method of sampling/analysis of coal is reproduced below after incorporating certain modifications. The revised procedure is to be adopted by the coal companies for declaration and maintenance of grade/quality of coal to be mined & dispatched.

FACILITIES AND ASSISTANCE TO BE PROVIDED BY NOMINATED OWNER FOR SAMPLE PREPARATION: As per sub-rule 3 of rule 4 of the Colliery (Amendment) Rules, 2021 the Nominated Owner shall provide all reasonable facilities and assistance for drawing coal samples by Coal Controller's Organization (CCO) officials & Government Organizations/Academic Institutions if any, authorized by CCO for this purpose. For this, one sample preparation room must be made available at every pit head dispatch point of the concerned colliery which should be properly illuminated, properly ventilated (exhaust fan), duly equipped with mechanical crushers, strainers, pulverizers (with vacuum cleaners) and a big clean metal plate for coning/quarterming. Suitable manpower is also to be provided by concerned coal company at the sampling room.

SAMPLE PREPARATION: Procedure for collection of samples and preparation from seams/ loaded wagons/loaded trucks/conveyor belts for determination of grade/quality to be followed by the coal companies & Government Organizations/Academic Institutions shall be as per the guidelines given in Annexure IV. Mechanical sampling/auto samplers shall be preferable to manual sampling.

ANNUAL GRADING COAL SEAMS/SECTIONS:

1. All the grade proposals of seams must reach the office of the Coal Controller through online portal of CCO (**portal.coalcontroller.gov.in**) and email to coalcont-wb@nic.in; joginder.cco@gov.in; and ranvijay.singh77@gov.in; positively before 10th of January every year.

While submitting the grade proposals of seams, the Nominated Owner should furnish the following documents.

- i) Number of samples tested and the dates of drawal of samples. (minimum 2 nos. of samples results are to be attached)
- ii) Place/places from where samples are drawn (enclose a mine plan of scale 1:4000 showing the Area proposed to be worked during the financial year and the places of sampling).
- iii) Seam Section(s) up to the full thickness and the working thickness. Nature and thickness of bands in the seam must be clearly mentioned therein showing whether the band is included or excluded.
- iv) Borehole/s details (including its seam wise GCV/UHV) within the proposed working area for that year and in absence of any borehole within the working patch, any other borehole/s in immediate proximity of the working patch."
- v) Particulars of Govt./NABL Accredited laboratory/laboratories where samples are analyzed.

- vi) Copies of test results duly counter signed by the Colliery Manager and Head of Quality Management of the Company.
 - vii) All relevant documents stated above shall be uploaded in portal or submitted to Coal Controller's Organisation along with details as per the Annexure-II for Coal and Annexure-IIA for Lignite.
 - viii) Copy of the relevant extract of approved mining plan/project report depicting seams envisaged for extraction.
 - ix) GST registration certificate for raising invoice from the Laboratories.
2. Random sampling and analysis for finalization of the proposed grades of the seams of the mines shall be done by CCO. For this purpose, seam samples shall be collected and analyzed at any Govt. accredited Laboratory/Govt. Academic Institutional NABL Lab. The job shall commence from the 2nd week of January every year. Frequency and system of random sampling shall be decided by the Coal Controller. The effective date of approved grades of coal seams of mines declared during annual grade declaration process by the Coal Controller's Organisation are to be notified by the Nominated Owner with effect from 1st April of financial year and for confirmation of provisionally declared grades of seams /new seams if any, are to be declared from the date of declaration by the Coal Controller's Organisation.
 3. The seam shall ordinarily be graded only in respect of the working thickness in case of underground development working.
 4. In case of depillaring and opencast mining, the total working thickness of the seam or seams involved should be considered for grading purposes.
 5. The annual grade/quality of coal shall be finalized by CCO on the basis of sample to be drawn randomly from seam by selecting 3 locations spaced at minimum interval of 30 m and shall be sent for analysis by Regional Head of CCO to two different labs of any Govt. Institution/NABL Accredited laboratory as per the guidelines given in **Annexure IV**. The expenditure of such sampling & analysis shall be borne by the Coal Company including transport of samples to lab. All the reasonable facilities/logistics for sampling shall be provided by the Mine owner/Coal Company as requisitioned by the CCO offices as per statute under the Colliery Control (Amendment) Rules, 2021. Mine Owner/ Coal Company shall make payment to the Laboratory/ Laboratories within 30 days from the date of receipt of invoice from the said Laboratory/ Laboratories for all the samples collected by CCO including referee samples.
 6. On the basis of lab wise average of the analysis result of the three samples, the higher average obtained out of the two labs shall be considered for annual grade declaration and shall be communicated by the Coal Controller's Organization every year. Subsequently, the grades/quality so approved by the Coal Controller shall be notified by the Nominated Owner in the prescribed Grade Certificate in the extant prescribed format (Annexure-I) and copy of such Grade Certificate(s) issued under the signature of the Nominated Owner shall be forwarded to Coal Controller and Regional Office of CCO. If there is a variation of two or more than two grades against the previous year declared grade or proposed grade by project proponent in the application, based on the lab analysis report, the Coal Controller Organisation may declare the grade as provisional subject to verification by re-sampling the same seam. No referee sample will be invoked, if the grade initially sampled and re-sampled is same.

PROVISIONAL GRADING OF COAL SEAMS IN-SITU

7. For provisional grading/quality, atleast two seam samples excluding pickable bands of 10cm thickness and above are to be drawn from atleast two different sites which shall be as far apart as practicable but, in any case, not less than 30 meters.

If the method of mining is such that the pieces of bands after blasting or cutting cannot be separated/picked, then the same should be included in the sample, keeping in view the cost incurred on beneficiation. In such cases, the Nominated Owner/Agent must submit a certificate as per

Annexure-VI. The said samples to be drawn by the Nominated Owner, Agent or Manager of the mine are to be analyzed as per the relevant BIS specifications. The analysis may be carried out at any Govt. Institution/ NABL Accredited laboratory.

8. In case of declaring the provisional grade/quality of a seam, which had enjoyed a grade/quality in the past but subsequently withdrawn, the previous grade or its equivalent may be declared as provisional grade/quality.
9. While declaring a provisional grade/quality, the Nominated Owner should furnish the relevant information to the Coal Controller as specified in Clause-1.
10. If the provisional grade is not approved by the Coal Controller within 180 days (six months), the same may be treated as null and void unless otherwise notified.
11. In case of a virgin seam in a working coal field, determination of class i.e., whether the coal is coking or non-coking may be assessed provisionally on the basis of analysis results of seam samples (proximate analysis on equilibrated basis), GCV (by approved bomb calorimeter on dmf basis as per IS : 1350 (Part - II) 1970 dated April 1971 or any subsequent revision thereof), Mean Random Reflectance percent (Ro), Moisture% (60% R.H.) parts/100 parts of unit coal, V.M.% on dmf basis, LTGK, CSN, Ash³/₄ and Carbon³/₄ (dmf) and Hydrogen% (dmf) for ultimate analysis of coal. The Nominated owner shall apply to the Coal Controller for classification of the seam giving particulars of the class and grade/quality of the seam in the extant prescribed format (Annexure-II).
12. In case of a virgin seam in a new area having no mine in the vicinity, the expected class of coal as per analytical data of bore hole or other such samples provisionally mentioned or mentioned in the Project Report/Approved Mining Plan may be taken as the expected/indicative class for the purpose of declaring the grade/quality. In this case also the owner shall apply to the Coal Controller through online portal of CCO (**portal.coalcontroller.gov.in**) and email to coalcont-wb@nic.in, joginder.cco@gov.in; and ranvijay.singh77@gov.in with detailed justification for classification of the seam in the extant prescribed format (Annexure-II).
13. The application for confirmation of the final class whether the coal is coking or non-coking in case of a virgin seam should be submitted to the Coal Controller as early as possible but in any case, not later than 60 (sixty) days from the date of declaration of provisional grade/quality.

RE-CLASSIFICATION OF COAL SEAMS:

14. In case of intention of change of classification of coal from coking to non-coking & vice versa, the Nominated owner shall apply to the Coal Controller positively by 31st December. At the time of submission of Annual Grade proposals of seams/sections of the mine(s) giving detailed justification for change along with current relevant detailed analysis results in the extant prescribed Format (Annexure-II) For this, at-least six(6) seam samples are to be drawn during the last six months of the previous financial year by the Nominated Owner, Agent or Manager of the mine, as per laid down procedure from atleast 3 (three) different locations of the concerned seam to be shown in the attached working plan (1:4000). The proposed change of class of coal would be verified by officials of CCO through systematic sampling of seam as well as loading samples drawn on at least 6(six) different dates spaced at an interval of atleast 7(seven) days in a span of 2(two) months to justify the proposed revision, as per laid down procedure and the detailed analysis like Moisture%(60% R.H.) parts/100 parts unit coal,V.M. (percent on dmf basis), GCV (in Bomb calorimeter on dmf basis), Mean Random Reflectance per cent (Ro), LTGK type, C.S.N, Ash %,Carbon% (dmf) and Hydrogen³/₄ (dmf) etc. On the basis of the analysis results, Coal Controller shall take the decision and the decision of acceptance shall be intimated to the Nominated Owner of the concerned coal company, if found in order as per Indian Standard

classification and codification of Indian coals and Lignite (IS 770 : 1977, second revision and further revision thereof). Interim re-classification proposal by the Nominated Owner for revision from coking/non-coking characteristics or vice-versa within a financial year may not be accepted at the office of the Coal Controller unless otherwise permitted.

GRADING OF SEAMS AFTER REOPENING OF MINE/WORKING:

15. In case, where a seam is re-opened within 6(six) months of temporary discontinuance, the previous grade prevailing at the time of discontinuance may be restored but when the period of discontinuance exceeds 6 (six) months, the nominated owner shall apply afresh for grade verification by CCO.

COMPOSITE/COMBINED QUALITY OF COAL

16. Nominated Owner may declare the composite grade/combined quality of coal based on seams/section grades confirmed by CCO on weighted average basis, for number of seams, if the annual production from those seams is despatched as mixed loading. In case of composite grade/quality, the grade/quality certificate should indicate the ratio of quantities of different grades/quality of coal in the mixed loading with a certificate for maintenance of such mixed proportion to maintain the proposed grades of coal feeder streams and Nominated Owner may also declare other composite grade of sizes/fraction obtained for marketing which shall be declared based on seam/section grades confirmed by CCO.

The composite/combined grade of seams/sections shall be declared by the nominated owner based on the grade of seams/sections confirmed by CCO on weighted average basis for working thickness of the seams/sections for number of seams.

Certificate for maintenance of composite grade/quality of such mixed proportion in the proposed grades of coal feeder streams and composite/combined grade of seams/sections shall be submitted to Coal Controller's Organisation.

DISPLAY OF GRADES/QUALITY OF COAL SEAMS COMPOSITE GRADE/QUALITY OF MIXED PROPORTION OF SEAMS/SECTIONS/MINE:

17. The Nominated Owner shall permanently display the declared grade/quality list on a notice-board at the office of the Manager showing the grades of all the seams and sections of seams mined in the colliery and composite grade/quality of mixed proportion of seams/sections/mines to be maintained in the coal feeder streams. Further, complete grade/quality list of all the seams and sections of seams of all collieries and composite grade/quality of mixed proportion of seams/sections/mines to be maintained in the coal feeder streams belonging to the coal company should be maintained, so as to be accessible by all concerned, at the offices of the Nominated owner, Chairman/Managing Director, Area General Manager and all Area Sales Officers.
18. The Nominated Owner shall maintain a record in non-editable digital mode and offline mode showing the following particulars of all seams being worked in the mine:
 - i) Analytical results of each sample.
 - ii) Declared grade/quality approved by Coal Controller.
 - iii) Date of declaration.
 - iv) Serial number of grade/Quality certificates.
 - v) Section of the seam graded showing details of bands.
 - vi) Composite/combined grade of multiple seams/dispatch grade declared by the Nominated Owner maintained in a bound page book along with composition (proportion) of such grade dispatched.
 - vii) Particulars of each band such as their thickness, nature i.e., hard or friable, whether pickable or not and whether included or excluded in the seam sample.

SETTLEMENT OF DISPUTES

19. While referring to any dispute arising out of the correctness of the declaration of grade of coal to the Coal Controller by a coal consumer for a decision, under sub-rule 5 of rule 4 of the Colliery Control (Amendment) Rules, 2021, the same should be preferred in the extent prescribed format (Annexure-III), and a full analytical data of coal and such other information which is considered relevant by the Coal Controller should be furnished.
20. Disputes arising only in respect of the correctness of declaration of grade/quality of coal of seam or section of a seam shall be admitted by the Coal Controller. No dispute in respect of commercial aspects in respect of a particular consignment shall be entertained. Owner of the colliery who wishes to prefer a challenge in respect of the correctness of seam grade declared by the Coal Controller's Organisation, may lodge protest to the Coal Controller. The protest shall be submitted to the Coal Controller's Organisation along with documents within the time limit as prescribed in **Annexure IV**.
21. The decision of the Coal Controller in the matter of disputes about grades/quality under sub-rule 5 of rule 4 of the Colliery Control (Amendment) Rules, 2021 is final and binding on the Coal Company and Consumer.
22. On receipt of the complaint from the consumer, the CCO officials may take surprise samples in the presence of authorized representatives of Coal consumers and the coal company from the loading point(s), get them analyzed, cost of such analysis of the samples shall be borne by the complainant. Based on the results or otherwise, Coal Controller shall take a decision.

PROCEDURE FOR SAMPLING AND ANALYSIS FOR DECLARATION/ MAINTENANCE OF GRADE/QUALITY OF COAL SEAM/SIDING TO BE FOLLOWED BY THE COAL COMPANIES, CCO REPRESENTATIVES AND AUTHORIZED GOVERNMENT ORGANIZATIONS/ACADEMIC INSTITUTIONS

(Ref. sub-rule 1 of rule 4 of the Colliery Control (Amendment) Rules, 2021).

23. For drawing seam samples the owner of a colliery shall prepare sampling sites and collect seam samples in accordance with provisions in item 9.1 of BIS specification NO.IS: 436 Part.I/ sec I) – 1964, Methods for sampling of COAL AND COKE –Part. I SAMPLING OF COAL Section 1 Manual Sampling (Revised)
24. Where samples of coal are required to be drawn from belt conveyer or other means of transport, provisions in the relevant BIS specification may be followed with modifications prescribed by Coal Controller as detailed in **Annexure – IV**.
25. For the purpose of analysis of sample(s), the following BIS standards shall be followed:
 - i) METHODS OF TEST FOR COAL AND COKE: PART I PROXIMATE ANALYSIS IS: 1350 (PART-I) (2nd Revision) – 1984.
 - ii) METHOD OF TEST OF COAL & COKE : ULTIMATE ANALYSIS IS: 1350 (PART- IV) 1974
 - i. IS: 1350 (PART II) – 1970 (2nd REVISION WITH AMMENDMENT): DETERMINATION OF CALORIFIC VALUE.
 - ii. IS: 1350 (PART-III)–1969: DETERMINATION OF SULPHUR.
 - iii. IS: 1350 (PART IV/sec.I) –1974: ULTIMATE ANALYSIS: DETERMINATION OF CARBON & HYDROGEN.
 - iv. IS: 1350 (PART IV/sec.2) – 1975: ULTIMATE ANALYSIS: DETERMINATION OF NITROGEN.
 - v. IS :1353-1993: METHODS OF TEST FOR CARBONISATION – CAKING INDEX, SWELLING NO., AND GRAY KING ASSAY(L.T.)
 - vi. METHODS OF PETROGRAPHIC ANALYSIS OF COAL:IS 9127 (Part – I, II &III) 1992
 - iii) INDIAN STANDARD CLASSIFICATION AND CODIFICATION OF INDIAN COAL AND LIGNITES (IS 770: 1977, SECOND REVISION AND FURTHER REVISION THEREOF.

On the Company's Letter Head

ANNEXURE - I

GRADE/QUALITY CERTIFICATE

(Name of Coal/Lignite Company)

(Name of seam of Colliery/Siding /CHP etc,)

Serial No. of
Grade/Quality Certificate _____ dated _____

In pursuance of provisions of sub-rule (2) of rule 4 of Colliery Control (Amendment) Rules, 2021, I being the competent authority of the company, hereby declare the Grade/Quality of coal Seam (No./Name) _____
Section _____ in _____ (colliery) as

_____ (Grade/Quality with GCV analyzed in a Bomb calorimeter in case of non-coking coal)
to be effective from _____ (date) in

supersession of all previous declarations, if any.

(Signature of the Nominated Owner)

Name & Designation with seal

ANNEXURE - II

DATA REQUIRED FOR GRADE/QUALITY PROPOSALS FOR ANNUAL/PROVISIONAL GRADE/QUALITY OF COAL SEAMS OF MINES

1. Name of Colliery:
2. Name of Seam:
3. Thickness of Seam:
4. Height of Working Section:
5. Vertical Section of Seam Showing all bands indicating Nature and Thickness (working Section should be indicated by Arrow). This Section should be given for each mine in a Standard Paper of 29 cm. x 23 cm Size:
6. Analysis of seam samples (Equilibrated basis)

Ash% Moist% VM% GCV by Bomb

Calorimeter in K.Cal/kg on air dry basis, i.e., samples equilibrated at 40 degrees C and 60% Relative Humidity.

- a. Including all bands
Site No. 1
Site No. 2
Site No. 3
- b. Excluding pickable bands (of 10 cm & above)
Site No. 1
Site No. 2
Site No. 3

7. Additional Analysis results for coking properties

Sample Details	Mean Random Reflectance per cent (Ro)	LTGK	CS N	GCV (done by Bomb calorimeter) in Kcal/Kg on dmf basis	Volatile Matter % on dmf basis	Carbon %(dmf)	Hydrogen %(dmf)	Moisture % (60% R.H.) parts/100-parts unit coal

8. Grade proposed for the -----seam for the year:

(Signature of the Nominated Owner with office seal)

ANNEXURE - II A

DATA REQUIRED FOR GRADE/QUALITY PROPOSALS FOR ANNUAL / PROVISIONAL GRADE /
QUALITY OF LIGNITE SEAMS OF MINES.

1. Name of Lignite mine:
2. Name of Seam:
3. Thickness of Seam:
4. Height of Working Section:
5. Vertical Section of Seam showing all bands indicating Nature and Thickness (working Section should be indicated by Arrow). This Section should be given for each mine in a Standard Paper of 29 cm. x 23 cm Size:
6. Analysis of seam samples

	Ash%	Moist%	VM%	GCV
a. Including all bands (ARB-As on received basis)				
Site No. 1				
Site No. 2				
Site No. 3				
b. Excluding pickable bands (of 10cm & above)				
Site No. 1				
Site No. 2				
Site No. 3				

7. Grade proposed for -----seam for the year:

(Signature of the Nominated Owner with office seal)

ANNEXURE -III

GOVERNMENT OF INDIA
MINISTRY OF COAL
OFFICE OF THE COAL CONTROLLER

PROCEDURE FOR LODGING STATUTORY COMPLAINTS BY CONSUMERS IN RESPECT OF GRADES/QUALITY OF COAL

In terms of sub-rule 5 of rule 4 of the Colliery Control (Amendment) Rules, 2021, disputes arising out of declaration of grade of coal by the Coal Companies may be referred to the Coal Controller, Government of India, Ministry of Coal, Scope Minar Core II 5th floor Delhi for final decision.

Any consumer who wishes to prefer a complaint to the Coal Controller regarding the grade of coal received by him may do so in the proforma appended below. A separate complaint should be made in respect of each grade of coal of each colliery which should be accompanied by a fee of Rs.2500/- in the form of an A/C Payee Bank Draft in favour of **“Pay and Account Officer (Secretariat) Ministry of Coal”** for each grade of each colliery against which complaint is being raised.

Disputes only in respect of declaration of grade shall be admitted if consumers lodge statutory complaints against the variation of grade for period upto 6 months from the date of application and any dispute in respect of any financial transaction shall not be entertained.

P R O F O R M A

1. Name and address of the consumer.
2. Name of supplying Colliery and Seam/(Siding) from which Supplied.
3. Approved Grade of Coal
4. Quality/Grade of Coal actually received by the consumer ascertained by actual analysis on loading point/dispatch point only (Proximate analysis, ash%, moisture%, volatile matter% on equilibrated basis and GCV in Kcal/Kg analyzed in bomb calorimeter on equilibrated basis i.e., samples equilibrated at 40 degrees C and 60% Relative Humidity for non-coking coals
5. Detailed analysis report of TPSA if available. If not, what is the basis of the complaint?
Detailed analysis report of referee samples processed by TPSA as the base for the complaint?
6. Particulars of Wagons/Trucks and dates of loading
7. Particulars of accompanying Bank Draft.
8. Any other relevant information. Like a copy of FSA and TPSA executed by the consumer with the Coal Company should be enclosed to the application.

Date: (Signature of the authorized Signatory/ Nominated owner
for Consumer lodging the complaint with Official Seal)

Place:

ANNEXURE - IV

PROCEDURE FOR COLLECTION AND PREPARATION OF SAMPLES FROM SEAMS IN-SITU/LOADED WAGONS/LOADED TRUCKS/CONVEYOR BELTS FOR DETERMINATION OF GRADE/QUALITY TO BE FOLLOWED BY THE COAL COMPANIES & GOVERNMENT ORGANIZATIONS/ACADEMIC INSTITUTIONS

[Ref: Sub-rule 1 of rule 4 of the Colliery Control (Amendment) Rules, 2021]

For each colliery an adequate number of representatives should be authorized by the colliery management for the purpose of supervising the sampling operation. Attested signature of such authorized persons should be kept with the regional head of Coal Controller's Organization. Collection, preparation and storage of samples from seams/loaded wagons/loaded trucks/conveyor belts for determination of grade/quality shall be done in presence of representatives authorized by the colliery management.

COLLECTION OF SAMPLES

1. In case of sampling from seam in-situ the following procedure shall be followed:

- i) The section of seam to be sampled shall be exposed from the roof to floor.
- ii) The exposed surface shall be as smooth as possible so that a rectangular channel may be cut.
- iii) The seam sample shall be taken in a channel representing the entire cross-section of the seam having the dimensions of 30*10 cm, that is, 30cm in width and 10cm in depth. In case of underground development working, working thickness of the seam shall be considered for sampling and in case of depillaring & opencast mining, the total working thickness of the seam or seams involved should be considered for sampling.
- iv) For this purpose, two parallel lines, 30cm apart and at right angle to the bedding planes of the seam shall be marked by a chalked string on smooth, freshly exposed surface of the seam.
- v) Obvious dirt band exceeding 10cm in thickness shall be excluded.
- vi) The channel between the marked chalk lines in the seam shall be cut to a depth of 10 cm and the coal sample collected on clean strong cloth or tarpaulin placed immediately at the bottom so that the changes of pieces falling off during excavation of coal are minimized.
- vii) The total height of the channel shall be measured and noted.
- viii) The excluded dirt bands shall, if required, be separately collected and analyzed.
- ix) Preference shall be given for collection of samples by using mechanical means like machines, drilling, core drilling etc. so as to reduce manual intervention."

2. In case of sampling from static loaded wagons the following procedure shall be followed:

- 2.1. Whole Rake (fully or partially loaded) will be considered as one lot for the purpose of sampling. When a rake is loaded with more than one grade/source of coal, wagons loaded with one grade of a particular source shall constitute one lot.
- 2.2. 10%(Ten per cent) of wagons of each lot will be selected from the population of the loaded wagons for actual collection of samples as per random number table (Ref: IS 436 Part I, Sec I of 1964 of Bureau of Indian Standards).
- 2.3. One point on the surface of the loaded wagons will be decided for collection of sample before getting on to the top of the wagon. From the prefixed point the entire quantity of coal will be collected from a pit of about 30 cm diameter and dug up to a depth as far as practicable.
- 2.4. The top of the selected spot for collection of sample shall be leveled before digging a pit of about 30 cm diameter will be dug to a depth as practicable taking precaution to prevent side spillage of coal getting mixed with the sample. However, the minimum quantity thus collected from each pit shall not be less than 30 Kg.

- 2.5. In case of any big piece of coal/stone encountered during the process of digging in the above manner, all the material at the top of the big piece shall be taken in sample.
- 2.6. After collection from one wagon, the gunny bag containing the sample shall be carried to the site of next selected wagon and the same process is continued up to the last wagon selected for collection of sample. Alternatively, the gunny bags containing sample may be kept at a central place under reliable guard or placed in the locked sampling room wherever available. The gunny bag will be loosely tied.
3. **In case of sampling from loaded trucks, following procedure shall be followed:**
 - 3.1. Trucks shall be chosen at random which shall be the first truck for sampling & after that 2nd and 3rd truck may be randomly selected.
 - 3.2. Procedure prescribed from 2.3 to 2.6 shall be adopted for collection of samples from selected loaded trucks.
4. **In case of sampling from conveyor belts, following procedure shall be followed:**
 - 4.1. For the purpose of sampling, a lot, while it is being discharged over a conveyor, shall be divided into a number of sub-lots of approximately equal weight. Two gross samples shall be collected from a quantity upto 500 tonnes, three gross samples for a quantity ranging from 501 tonnes to 1000 tonnes, four gross samples for a quantity ranging from 1001 tonnes to 2000 tonnes, 5 gross samples for a quantity ranging from 2001 to 3000 tonnes and 6 gross samples for a quantity of over 3000 tonnes.
 - 4.2. Weight of one gross sample shall be 350 kg in case of ROM/Cr. ROM coal, 175 kg in case of Steam coal and 75 kg in case of Slack coal.
 - 4.3. Weight of one increment shall be 5 kg for all coal sizes.
 - 4.4. In case of ROM/Cr. ROM coal, for 1 gross sample, the number of increments shall be 70 (@ 5 kg per increment, equivalent to 350 kg), in case of Steam coal, for 1 gross sample, the number of increments shall be 35 (@ 5 kg per increment, equivalent to 175 kg) and in case of Slack coal, for 1 gross sample, the number of increments shall be 15 (@ 5 kg per increment, equivalent to 75 kg).
 - 4.5. The increments shall preferably be taken from the full cross-section and thickness of the stream in one operation. While drawing the increments, the scoop should sweep the bottom of the conveyor.
 - 4.6. Samples may be collected either from the moving belt or after stopping the belt periodically.
 - 4.7. Before collecting the increments, the speed of the conveyor and the quantity of material passing a certain point in a given time shall be ascertained so that an appropriate spacing of the increments may be arranged over the whole of the lot.
5. **PREPARATION OF SAMPLE:**
 - 5.1. The total material thus collected from trucks without exclusion of anything other than foreign materials viz. Metallic pieces, wood, bricks, concrete chips etc., shall constitute the gross sample for the lot.
 - 5.2. The gross sample shall be crushed to 50 mm preferably by mechanical means, mixed thoroughly, coned and quartered. Two opposite quarters shall be retained and rest rejected. The retained material shall be further mixed together and same procedure of coning and quartering and rejection shall be followed till one quarter of the gross sample is retained. The material so obtained shall be crushed to 12.5 mm preferably by mechanical means and finally crushed to 3 mm size, preferably by mechanical means following coning and quartering till approx. 2(two) kg of sample is obtained. 2(two) kg sample is to be reduced to 72 mesh in a pulveriser and shall be kept for analysis.
6. This pulverized sample of approximately 2.0 kg shall be divided into 4 equal parts in segments of 90 degree each and by taking each segment, four equal parts of 500 gm(approx.) of the sample be collected in suitable air-tight bags. One part shall be handed over to the mine management. The second and third part shall be sealed with a slip inside the bag as well as tagged outside with information viz. (i) date of sampling, (ii) name of colliery, (iii) place of sampling and shall be sent for analysis by Regional Head of CCO to two different labs of any Govt. Institution/NABL Accredited laboratory. The fourth part shall be a referee sample and shall be sent for analysis by Regional Head of CCO to lab of any Govt. Institution/NABL Accredited laboratory

identified by the Coal Controller simultaneously along with above part. While sending the referee samples specific instruction shall be given by the Regional CCO to the lab for sending the result of referee in “sealed cover only” to CCO, Delhi. Identified/Designated lab shall submit the result of referee sample in a sealed cover to Coal Controller’s Organisation Delhi.

7. CONING AND QUARTERING: For reduction of sample – the following procedure shall be followed.

7.1. Heap the material into the shape of a cone by pouring one scoopful of the material one after another on the apex of the cone by allowing the material to fall down only under the influence of gravity.

7.2. Flatten the cone evenly so that it forms a low circular pile.

7.3. Cut the pile into 4 quarters along two diameters which intersect at right angles. Retain one pair of opposite quarters and reject the other pair. Repeat till the size of the retained sample is reduced to the required weight.

8. GENERAL PRECAUTIONS: The place selected for preparation of sample shall be enclosed, properly roofed, well lighted and free from draught. Where this is not possible, precautions shall be taken against loss of (a) fine wind-borne sample (b) contamination with moisture (c) contamination with foreign matter.

8.1. No part of the sample shall be removed during the process of preparation & reduction.

8.2. Hard clean surface, free from cracks shall be selected for mixing, coning and quartering of the sample.

8.3. The sampling bags for samples collected by Regional Head of CCO or his representative should be identical and shall be similarly sealed and carefully deposited.

8.4. Before accepting the coal samples from their authorised representative, Regional Head of CCO or his authorised representative of CCO should examine the sample bags and sampling report.

9. SAMPLING REPORT as prescribed in the **Annexure - V** shall be prepared in triplicate with the signature of the representatives of the colliery as well as that of the Coal Controller.

10. HANDLING THE SAMPLES AND ANALYSIS REPORT:

The Regional Head of CCO should send his part of sample to laboratory after codification by removing the slip inside/outside in groups. The code number will be given by Regional Head of CCO and confidentially recorded in a bound paged register. All the samples sent in one lot will be in exactly similar bags and after sealing again. The code number would be given both on the tag and inside the bag.

10.1. When the analytical results are obtained from the accredited laboratory, same should be decoded and recorded in the register. The results shall be communicated to Coal Company along with all relevant information, viz. colliery, seam, size fraction, declared grade/quality, place and date of sampling, the name of the consumer etc.

10.2. The owner of the colliery may challenge the declared result supported by analysis result from NABL lab for the sample kept with him within a period of 60 days from the date of intimation of result by Coal Controller.

10.3. The referee sample part should be sent to a laboratory for analysis in a lot of at least 6 (six) samples with code number (which would not of course be made known to colliery representatives) under sealed condition. The referee sample results received from lab in sealed cover shall be opened, if the owner of the colliery challenges the declared grade of seams/sections by the Coal Controller or any other official authorized by him.

10.4. In case of unusual variation of analysis result of the referee part from the earlier result of the same sample, the reason for such variation may be analysed.

10.5. System of rejecting suspicious test result shall be as per IS: 436 (Part I /Sec I) 1964 of BIS.

- 10.6. For such cases, at least one sample in a quarter shall be collected under the supervision of Regional Head of CCO himself, so that the seasonal variation as also the work of the subordinate officers can be checked.
- 10.7. In order to ensure proper analysis, the Regional Head of CCO should analyze periodically in more than one Govt. Accredited laboratory simultaneously and compare the results.

ANNEXURE - V

GOVERNMENT OF INDIA
MINISTRY OF COAL
OFFICE OF THE COAL CONTROLLER

SAMPLING REPORT

1. Sample No.:
2. Date of Sampling:
3. Name of Colliery:
4. Name of Owner/Company:
5. Pit/Incline/Quarry:
6. Place of Sampling:
7. Truck No if any:
8. Consignee & destination
9. Name of Seam:
 - a. Including all bands
Site No. 1
Site No. 2
Site No. 3
 - b. Excluding pickable bands (of 10cm & above)
Site No. 1
Site No. 2
Site No. 3
10. Declared Grade
11. Size fraction if any:
12. Method of loading:
13. Method of drawl of samples:
14. Name and Designation of the Company representative:

This is to certify that the samples were taken as per the procedure of sampling laid down by Coal Controller in our presence.

**Signature of the representative of
Nominated Owner of Colliery the
with date & seal**

**Signature of representative of Nominated
CCO wherever applicable
with date & seal**

ANNEXURE-VI

(on company's letter head)

CERTIFICATE

1. Name of the Mine/Colliery
2. Name of the Area
3. Name of the Nominated Owner & Company
4. Name of the Agent/Manager
5. Name of the seam
6. Name of the working section
7. Thickness of the working section
8. Thickness of the band

Certified that the above band/bands of the coal seam cannot be separated due to method of mining in vogue.
This is also to certify that there will be no percentage (%) deduction from the production of coal on account of the shale/bands

Signature of the Area General Manager
With date and seal

Signature of the Agent
with date and seal