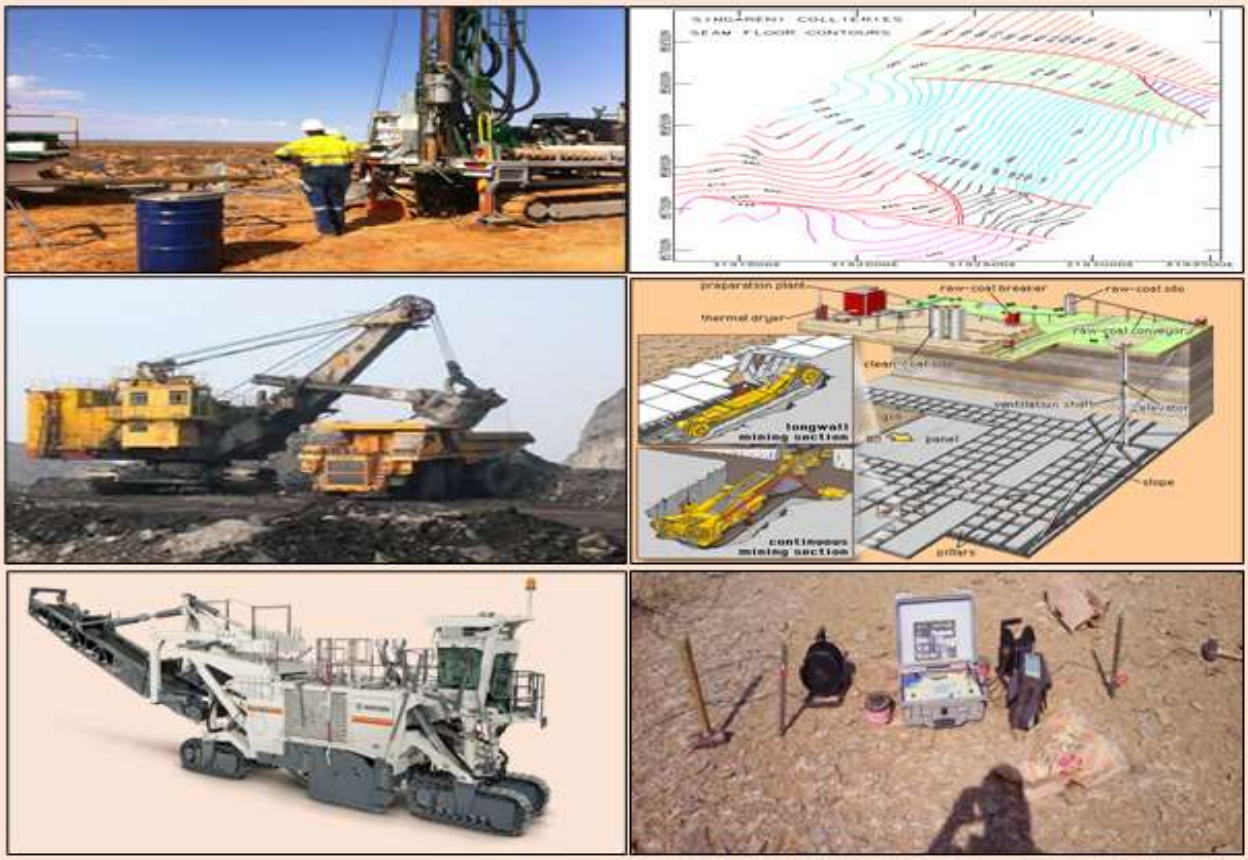
Accreditation Scheme
for
Prospecting/Exploration Agency (APA)
&
Mining Plan Preparing Agency (MPPA)



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Acknowledgement

This Scheme for Accreditation of Prospecting/ Exploration Agency (APA) and Mining Plan Preparation Agency/ organization (MPPA) has evolved from the Notification number G.S.R 331(E) dated 29.05.2020 of Ministry of Coal (MoC). The scheme is innovatively designed and being launched purposefully in accordance with the national initiative. Minerals are valuable natural resources that are finite and non-renewable which constitute the vital raw materials for many basic industries and are a major resource for development. The wide availability of minerals in the form of abundant rich reserves and the eco-geological conditions make it very conducive for the growth and development of the mining sector in India. As a major resource for development the extraction and management of minerals has to be integrated into the overall strategy of the country's economic development.

In order to achieve resource efficiency, the Indian mining sector is already looking forward to adopt advanced mine surveying and Prospecting technologies (like geophysics applications using 2D and 3D seismic surveys) along with the usage of latest software solutions (like Micromine, Gemcom Minex, Surpac, CAE Mining Datamine and Vulcan) in the mine planning and design stage.

The journey of this scheme started with its conceptualization in 2019 to its implementation now has been an exciting and enriching experience for Quality Council of India (QCI) and its constituent board the National Accreditation Board for Education and Training (NABET).

This venture would not have been so successful without the able guidance received from the each of the successive Secretaries and their teams in the Ministry of Coal, Ministry of mines, Govt. of India, all through from the formative discussion of the scheme to the presently matured form that the scheme has acquired. The scheme additionally benefitted from the professional support provided by the experts in the field of Prospecting and Mining and the valuable inputs provided by the consultant organizations, representatives from industries, academia and research institutions. The unfailing and constant support by the NABET Board, and the Technical and Accreditation Committees of NABET provided the much-needed vitality and buoyancy for the successful launch of this national initiative. The constant encouragement and support of the Secretary General, QCI and the Chief Executive Officer, QCI-NABET have been a tremendous source of inspiration.

QCI - NABET acknowledge with sincere gratitude, the support and cooperation received from all its peers, well-wishers and partners in the implementation of this Scheme.

Abbreviations	
AC	Accreditation Committee
ACO	Accredited Consultant Organization
AICTE	All India Council for Technical Education
AO	Applicant Organization
APA	Accreditation of Prospecting Agency
ASSOCHAM	Associated Chambers of Commerce and Industry
B. Sc	Bachelor of Science
B. Tech	Bachelor of Technology
CA	Co-Assessor
CAD	Computer-Aided Design
CAE	Computer-aided engineering
CEM	Civil, Electrical & Mechanical
CEO	Chief Executive Officer
CII	Confederation of Indian Industry
CSIR	Council of Scientific and Industrial Research
CV	Curriculum vitae
DPR	Detailed Project Report
DRILL	Drilling
DTH	Down-the-Hole
EAC	Expert Appraisal Committee
ECS	Electronic Clearing System
EHS	Environment, Health & Safety
Emp	Empanelled
FAE	Functional Area Expert
FICCI	Federation of Indian Chambers of Commerce and Industry
GEO	Geology
GIS	Geographic Information System
GL	Geological
GP	Geophysics
GPS	Global Positioning System
GR	Geological Report
GSI	Geological Survey of India
GST	Goods and Services Tax
GT	Geotechnical
HEMM	Heavy Earth Moving Machinery Equipments
HG	Hydrogeology
HGL	Hydrogeological
HRSS	High Resolution Shallow Seismic
HW	Hardware

HW	Hardware
IA	Initial Accreditation
ICWA	Institute of Cost and Works Accountants
IH	In-house
IIT	Indian Institute of Technology
IPCCC	In-Pit Crushing and Conveying System
ISO	International Organization for Standardization
ISP	Indian Standards Procedure
JORC	Joint Ore Reserves Committee
LAB	Laboratory
M&F	Marketing & Finance
M.Tech	Master of Technology
MBA	Master of Business Administration
ME	Mining Engineering
MECL	Mineral Exploration Corporation Limited
MGEO	Mining Geology
MMDR	Mines and Minerals (Regulation and Development)
MoC	Ministry of Coal
MoU	Memorandum of Understanding
MPPA	Mining Plan Preparing Agency
MPR	Mining Plan Report
MSc	Master of Science
NABCB	National Accreditation Board for Certification Bodies
NABET	National Accreditation Board for Education and Training
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NABL	National Accreditation Board for Testing and Calibration Laboratories
NC	Non-Conformances
NGO	Non-Governmental Organization
NOC	No Objection Certificate
Obs	Observations
PA	Principal Assessor
PC	Project Coordinator
QA	Quality assurance
QCI	Quality Council of India
QMS	Quality Management System
RA	Re-accreditation
RQD	Rock Quality Designation
RS	Remote Sensing
SA	Surveillance Assessment
SAMREC	South African Mineral Reporting Codes

SCM	Senior Consultant Mining
SE	Socio Economics
SEAC	State Level Expert Appraisal Committee
SOP	Safe Operating Procedure
SUR	Surveying
SW	Software
TAE	Technical Area Expert
TC	Technical committee
TDS	Tax Deduction at Source
TM	Team Members
TOR	Terms of Reference
UGC	University Grants Commission
UNFC	United Nations Framework Classification for Resources
XLRI	Xavier Institute of Management

1.0 AN OUTLINE OF THE SCHEME

1.1 BACKGROUND

India has a total geographical area of about 328 million hectares. It has considerable domestic reserves of many minerals and require prudent Prospecting/ Exploration and development in order to ensure sustainable and safe mining.

Minerals are valuable natural resources that are finite and non-renewable. They constitute the vital raw materials for many basic industries and are a major resource for development. The wide availability of minerals in the form of abundant rich reserves and the eco-geological conditions make it very conducive for the growth and development of the mining sector in India. As a major resource for development, the extraction and management of minerals has to be integrated into the overall strategy of the country's economic development.

For keeping the pace with the developmental activities and to boost the Indian economy Government of India has allowed commercial mining and now private companies can participate in bidding for explored/ partially explored blocks. In view of this Ministry of Coal in exercise of the powers conferred by section 13 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) has come out with the amendment in the Mineral Concession Rules 1960, called as Mineral Concession (Amendment) Rule 2020, vide notification number G.S.R 331(E) dated 29.05.2020.

Accordingly, QCI – NABET has developed the Scheme of Accreditation for Prospecting/ Exploration Agency (APA) and Mining Plan Preparation Agency/ organization (MPPA). The QCI – NABET shall grant accreditation to Prospecting/ Exploration Agency(ies) for undertaking exploration and preparations of Geological Report (GR) in accordance with the Indian Standard Procedures for Coal resource estimation issued by Central Geological Programming Board of GSI or any other standard procedure specified by Central Government. The QCI – NABET shall also grant the accreditation to Mining Plan Preparing Agency (MPPA) for preparation of Mining Plan. The Mining operations to be done in accordance with the Mining Plan prepared by accredited MPPA. The details regarding the QCI – NABET accreditation procedure is defined under schedule VI in the Mineral Concession (Amendment) Rule 2020, vide notification number G.S.R 331(E) dated 29.05.2020.

In order to achieve resource efficiency, the Indian mining sector is already looking forward to adopt advanced mine surveying and Prospecting technologies (like geophysics applications using 2D and 3D seismic surveys) along with the usage of latest software solutions (like Micromine, Gemcom Minex, Surpac, CAE Mining Datamine and Vulcan) in the mine planning and design stage.

Mineral extraction and mineral transport operations have adverse impact on ecology & biodiversity, water resource, geology, land use land cover and on climate. There are also socio-economic, cultural and even political consequences associated with these activities. It is important that such probable

effects of the activities are done with the aim of sustainable development and to comply with applicable laws.

1.2 NEED OF THE SCHEME

In view of the above and due to the increasing demand of coal and other minerals, Government of India has allowed commercial mining and now private companies can participate in bidding for explored/ partially explored blocks. Generally, the Exploration and Mine Planning are being carried out by Central and State Government Agencies only. On allocation of potentially commercial coal blocks and mining leases there will be need of more Private Exploration and Mining Consultants in the country. The Prospecting and Mining activities are quite complex, site specific and multidisciplinary activity for the Mining projects. Hence, any individual consultant cannot cater to all required competencies for development / preparation of Geological Report (GR) and Mining plan. Keeping in view of the above, QCI-NABET has developed the credible Accreditation mechanism specifying the requirements for:

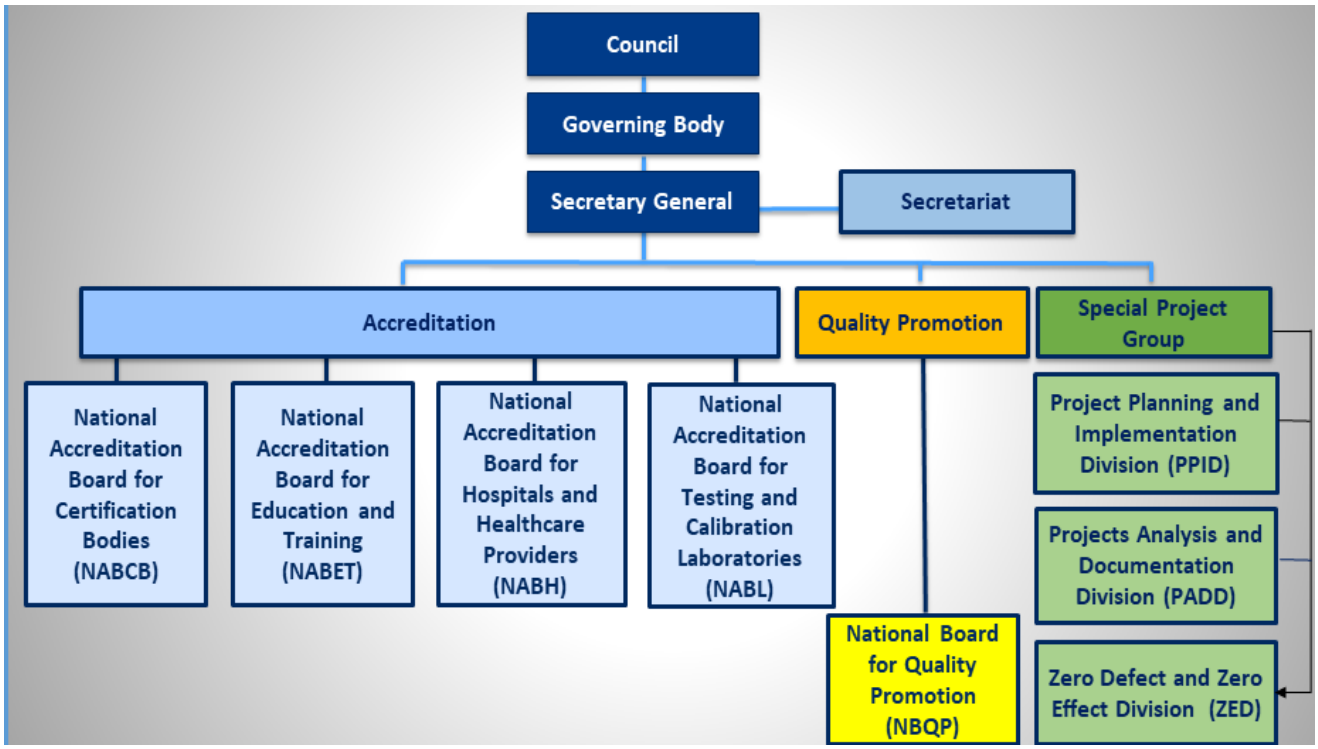
1. **Scheme for Accreditation of Prospecting/ Exploration Agency (APA)**
2. **Scheme for Mining Plan Preparing Agency (MPPA**)

The Prospecting/ Exploration Agency and Mining Plan Preparing Agency shall be accredited under the scheme on fulfilling the requirements of standards like; competent human resource, infrastructure, adequate instrumentation with cutting edge technology, system-oriented approach and ethical working. This scheme is developed and operated by QCI-NABET in consultation with concerned stakeholders and concerned ministry(s).

The scheme is dynamic in nature, hence, modifications and updates will take place from time to time, as it ought to be for continually improving the delivery and effectiveness of the Agency.

2.0 ABOUT QCI AND NABET

In pursuance of the cabinet decision of Feb 1996, Quality Council of India (QCI) was set up jointly by the Government of India and the Indian Industry represented by the three apex industry associations namely Associated Chambers of Commerce and Industry of India (ASSOCHAM), Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce & Industry (FICCI) to establish and operate national accreditation structure and promote quality through National Quality Campaign. QCI is registered as a non-profit society with its own Memorandum of Association. QCI is governed by a Council of 38 members with equal representations of Government, Industry and Consumers. The Chairman of QCI is appointed by the honourable Prime Minister on the recommendation of the Industry to the Government. It functions through the Executive Boards in the specific areas i.e. Accreditation for **(a) Conformity Assessment Bodies, (b) Healthcare Establishments (c) Education & Vocational Training Providers. In addition, it has an exclusive Board for promotion of Quality.**



Each Board works independently and is headed by a Chairman, identified from the prominent people related to industry in India. National Accreditation Board for Education and Training (NABET) is one of the constituent Boards of QCI as per structure shown.

NABET is managed by seventeen honorary members including the Chairman with fair representation from the stakeholders ensuring that no particular interest predominates. The Chairman of the Board is an eminent person and an ex-officio member of the Quality Council of India. The Chairman of QCI nominates the Chairman of the Board from the proposed names received from the council members. The Board is supported by the NABET secretariat. The policies and procedures for Accreditation by the Board are non-discriminatory and are implemented uniformly to all applicants. A uniform and reasonable fee is charged from all applicants in lieu of the services offered.

3.0 ACCREDITATION

Accreditation is a process of verification of competency of an organization in delivering good quality service/product in the chosen field. Accreditation is awarded, after carrying out structured assessment of compliance to the accreditation guidelines. It helps organizations to adopt a holistic approach for preparing Geological Reports/ Mining Plan and to build in system to achieve continual improvement through a transparent and credible mechanism.

FIG. 3: BENEFITS OF ACCREDITATION

3.1 BENEFITS OF ACCREDITATION

a. For consultant organizations

i. Recognition of competence and capability
ii. Growth in business through reputational benefits
iii. Competitive edge
iv. Periodic assessment by QCI-NABET for continual improvement
v. Publicity through QCI-NABET & MoC websites and publication
vi. Use of QCI- NABET logo - a mark of quality

b. For project proponents and other stakeholders

i. Availability of a list of capability verified agency(ies).
ii. Reduced risks on investments by project proponents.
iii. Checks on performance of the consultants through QCI-NABET website.
iv. Enhanced acceptability of developmental projects by all stakeholders.

4.0 SCHEME FOR ACCREDITATION OF PROSPECTING/EXPLORATION AND MINING PLAN PREPARATION AGENCIES

NABET, a constituent Board of the QCI, developed Accreditation Scheme for Prospecting/ Exploration Agencies and Mining Plan Preparation Agencies/ Organizations (hereinafter called 'The Scheme') with the inputs from various stakeholders including; experts in the field, regulatory agencies and consultants.

This document describes the scheme's requirements in term of human resources, quality management systems, the assessment process, the accreditation criteria and other related to the scheme. The various aspects of the scheme are-

a) Eligibility (who can get accredited) and coverage of the scheme
b) Human resource – qualification and experience requirement
c) Scope of accreditation
d) Quality Management system (QMS)
e) Assessment and accreditation process
f) Closure/suspension/delisting/on hold etc. Of applications

For the implementation of the Scheme, NABET is guided by a group of eminent professionals in the field of Prospecting and Mining and allied subjects and structured Secretariat.

Five groups as follows:

1. **Technical committee (TC)** comprises 6-8 experienced professionals with proven track record. This committee guides NABET in developing the Scheme as well as the assessment process taking into consideration the feedback received from stakeholders/Accreditation Committee/ Assessors *et al.*
2. **Accreditation committee (AC)** – comprises 6-8 eminent persons with vast experience in the field. Apart from approving accreditation, this committee provides clarifications to some aspects of the Scheme as necessary from time to time. AC reserves the right to take decisions with respect to moderations in recommendations made by the Assessors and recording the rationale for the same.
3. **NABET assessors** – they are a group of eminent professionals with long standing experience in relevant field for, carrying out technical assessment of the applications as well as for conducting office assessment/interaction with experts. Assessment reports made by the Assessors help the Accreditation Committee to take an appropriate decision on accreditation.
4. **NABET secretariat** – comprises a mix of senior professionals and young energetic technical staff which coordinates the entire process of assessment and accreditation

Specialists – NABET also seeks guidance of specialists in the field to strengthen the scheme, as and when required.

One complete cycle of Accreditation covering 3-Years period comprising Initial Accreditation (IA), Surveillance Assessment (SA) and Re-accreditation (RA) process. All the three processes involve assessment in 3 stages:

Stage I– Checking completeness of the application by NABET secretariat

Stage II - Technical review of documents by assessor(s)

Stage III - Office assessment by assessors

4.1 ELIGIBILITY FOR ACCREDITATION

Only agency meeting the eligibility criteria of this Scheme are considered for accreditation. These consultant organizations can include government bodies, public sectors undertakings and private organizations which could be proprietorship firms, partnership firms or companies (Pvt. & Public Limited), bodies registered under Society Acts, under Section 25 of Companies Act, Research Institutes and the like. All requirements of the Scheme as mentioned in this document are to be complied with for an organization to get accredited. A sole proprietorship owned by an individual or in personal name can also apply if it fulfils the requirements of the Scheme.

4.2 SCOPE OF THE SCHEME

The Scheme covers the scopes for Prospecting/ Exploration and Mining Plan Preparation Agency who will prepare Geological Report (GR) and Mining Plan entrusted by project proponent. Hence the scheme is divided into two sections describing guidelines for accreditation of scope viz.

1. **Scheme for Accreditation of Prospecting/Exploration Agency (APA)**
2. **Scheme for Mining Plan Preparing Agency (MPPA)**

4.2.1 Scheme for Accreditation of Prospecting/Exploration Agency (APA)

Any Prospecting/ Exploration Agency (Applicant Agency/Organization) must have expertise & coverage in all the fields as specified in this document or can have MoU with the agency(ies) in the field/aspect(s) as mentioned below, if they are short of any specific area(s)/aspect(s) for preparation of comprehensive geological report, as per the standard as specified by Government/concerned agency(ies). The Accredited Prospecting/ Exploration/ Agency (APA) can provide their services for prospecting/ exploration required for Geological Report (GR) preparation. APA should cover following aspects –

i. Drilling (Coring & Non-coring)
ii. Topographical Survey
iii. Geo-physical survey (borehole & surface)
iv. In-seam Seismic survey, HRSS, Seismic Refraction
v. Interpretation of Stratigraphy & structure
vi. Coal Quality assessment

vii. Geo-technical studies
viii. Geo-chemical testing
ix. Hydro geological studies
x. Geological Modelling
xi. Coal / Mineral Resource Evaluation
xii. facility for preserving drilling cores, with self/ drilling partner

4.2.2 Scheme for Mining Plan Preparing Agency (MPPA)

The Mining Plan Preparing Agency (MPPA) shall prepare Mining Plan in accordance with the standard and procedures approved by Central Government. An applicant agency organisation shall have expertise in the relevant fields or can have MoU with the agency(ies) having accreditation in the field/aspect(s) as mentioned below, if they are short of any specific area for preparation of comprehensive Mining Plan. The Accredited Mining Plan Preparing Agency (MPPA) can provide consultancy for services required for Mining Plan and Pre-feasibility/ Feasibility report preparation. MPPA should cover following aspects –

a. Mining Plan for underground and open cast mines
b. Pre-Feasibility/ Feasibility studies of open cast and underground mines
c. Detailed design of open cast and underground mines
d. Operational plans for open cast and underground mines
e. Techno-economic appraisal of mining projects
f. Technical audit of working mines
g. Introduction and adaptation of new technology for UG/OC mines
h. Preparation of manuals and special reports

4.3 Coverage of the Scheme

This comprehensive document describes the scheme's requirements of human resource, Quality Management Systems and procedures to be followed, integrity of data, the assessment process, the accreditation criteria and other relevant requirements of the Scheme.

Specific details related to this Scheme have been included in ***Appendices (A to H)*** and those related to Application form in ***Annexure (1 to 14)***.

4.4 Updation of the Scheme

The accreditation Scheme is dynamic in nature. Modifications and updation will take place from time to time with the consultation and intimation to the Ministry. It ought to be for continually improving the delivery and effectiveness of the consultancy.

QCI/NABET reserves all rights to amend its accreditation scheme, procedures and fees etc., as it may deem fit. Applicant(s) agency/ organisation are requested to refer to the updated scheme on the

QCI/NABET website (http://nabet.qci.org.in/) before applying for their accreditation/surveillance/re-accreditation/expansion or modification of scope.

5.0 REQUIREMENTS FOR ACCREDITATION

The accreditation requirements have been developed with a view to have system-based approach. The scheme specifies the following six essential requirements for accreditation:

i. Human resource
ii. Field investigation and laboratory arrangement
iii. Suitable infrastructure, Plant & Machinery (P&M) and relevant Hardware & Software
iv. Quality Management System (QMS)
v. Coverage and Quality of Prospecting Reports (GR), Mining Plan and Pre-feasibility/feasibility Reports
vi. Organizational commitment
vii. Compliance to accreditation condition

5.1 HUMAN RESOURCE

Preparation of a Prospecting/ exploration report and Mining Plan and Mine Design is essentially a multi-disciplinary activity where inputs are required from experts having knowledge of the prospecting/ exploration, and mine plan preparation.

5.1.1 PROJECT COORDINATOR (PC)

The Project coordinator should have broad knowledge about the mining project. The role of the PC includes, but not be limited to, studying and understanding the project, setting-up the team, visiting the site with the team, evolving work schedule and ensuring that data are appropriately utilized for generating the comprehensive report, correct interpretation and correlation of the data, and maintenance of necessary records.

The essential requisites for PC include the following –

- Conceptual understanding of project requirements, process and outcome.
- Knowledge of the applicable Acts, Rules and Regulations governing the project.
- Domain knowledge
- Leadership quality in planning, selecting and guiding the team

Thus, for Project Coordinator emphasis is given on experience and maturity.

For educational qualification, minimum experience and expected functions of Project Coordinators (**PC)** for different schemes please refer to below mentioned respective appendices.

1. **Project Coordinator Prospecting/ exploration – *Appendix – A***
2. **Project Coordinator Mining Plan - *Appendix -B***

5.1.2 TECHNICAL AREA EXPERT (TAE)

TAEs are expected to identify and assess in their respective areas of expertise for adequate input for the report input and provide their expert inputs to the PC. TAEs should have -

- an in-depth knowledge in their respective areas of specialization
- understanding of the legislations and rules/regulations with respect to the technical areas
- the capability of identifying the need of the project,

For educational qualification, minimum experience and expected functions of Technical Area Experts (**TAE)** for different schemes please refer to below mentioned respective appendices.

1. **Technical Area Experts for Prospecting Agency:**

   The following **areas of expertise** have been identified which are required for carrying out prospecting/ exploration studies-

i.	Geology	GEO
ii.	Geophysics	GP
iii.	Remote Sensing & GIS	RS
iv.	Surveying	SUR
v.	Hydrogeology	HG

   For educational qualification, minimum experience and expected functions of Technical Area Experts (**TAE)** Prospecting please refer to ***Appendix-A***

   Technical Area Expert Mining Plan Agency:

   The following **areas of expertise** have been identified which are required for carrying out mining plan preparation -

i.	Mining Engineering	ME
ii.	Mining Geology	MGEO
iii.	Remote Sensing & GIS	RS
iv.	Civil, Electrical & Mechanical	CEM
v.	Marketing & Finance	M & F
vi.	Socio Economics	SE
vii.	Environment, Health & Safety	EHS
viii.	Geotechnical (optional)	GT

   For educational qualification, minimum experience and expected functions of Technical Area Experts (**TAE)** Mining Plan please refer to ***Appendix-B***

5.1.3 TEAM MEMBERS (TM)

A provision of 'Team Member' has been introduced to:

- Encourage induction of new professionals experienced in their respective technical areas but lack direct related experience.
- Give opportunity to professionals in the field to build their competencies for handling different technical areas under the Scheme. This provision is available for in-house employees only.

NABET must be informed about involving professional as team member **prior to actually engaging** her/him for the job. A prescribed methodology has to be adopted for this (vide ***Appendix A*** for details).

5.1.4 REQUIREMENTS OF EXPERTS/ NUMBER OF EXPERTS REQUIRED:

Number of experts required for respective agencies is as below:

A. Prospecting/ Exploration Agency (APA):

1. Project Coordinator(s) must be in-house (full time employee).
2. Expert(s) involved in preparing Geological reports must be in-house (full time employee).
3. Any organization to be accredited must have minimum one approved in-house PROJECT COORDINATOR (GEO), and one in-house TAE (GEO).
4. The other TAE(s) may be in-house (IH) or empanelled (Emp). The organisation must cover remaining TAEs.
5. Inhouse Technical Area Expert (TAE) can be associated with maximum of two technical areas if S/he fulfils the qualification and experience criteria as per the scheme.
6. Empanelled expert(s) shall have MoU or written declaration with the organization as mentioned in ***Annexure _12*.**

B. Mining Plan Preparing Agency (MPPA)

1. Project Coordinator(s) must be in-house (full time employee).
2. Expert(s) involved in preparing Mining Plan must be in-house (full time employee).
3. Any agency/ organization to be accredited must have minimum one approved in-house Project Coordinator (Mining), one in-house TAE (Mining).
4. The other TAE(s) may be in-house or empanelled. The organisation must cover remaining TAs.
5. Inhouse Technical Area Expert (TAE) can be associated with maximum of two technical areas if S/he fulfils the qualification and experience criteria as per the scheme.
6. Empanelled expert shall have written declaration with the organization as mentioned in ***Annexure _12.***

5.1.5 GENERAL CONDITIONS FOR EXPERTS

a. Experts involved in preparing reports, namely PCs and TAEs, can be both, in-house (full time employee) or empanelled as per requirement of the scheme.

b. **In-house (IH) expert**- is a full-time employee working on the pay rolls of the applicant agency/ organization AO/ ACO on regular basis (not on 'time to time basis or on 'as an when required' basis) and gets appropriately paid as per her/his qualification and experience. All payments to an in-house expert are to be made through bank and are subject to TDS, as applicable.

c. **Empanelled expert**–an AO/ ACO may also have 'empanelled' experts. An empanelled expert may be a 'freelancer' (not a full-time employee of any organization) or may be working with an NGO or Research organization Academic institute. In the latter case, a No Objection Certificate (NOC) is to be obtained from the Registrar for a University, the Principal for a college and the head of organization for an NGO or a Research organization, as the case may be. The AO/ACO must have an MOU/written agreement with such expert(s). Details to be included in NOC and MOU/Agreement are mentioned in Section E 7.2 of ***Appendix E***.

d. A full time Director in a Private/Public Limited company is considered as a full-time employee of the organization/firm and is not eligible to opt as an empanelled expert under the Scheme. However, if a person is an Independent Director in a company, s/he is eligible to be an empanelled expert with a maximum of 3 - AO/ACO. In such cases, relevant documentary evidence has to be furnished of his/her being an Independent Director in the company.

e. Partners in partnership firms may be accepted as empanelled experts. This will be subject to submission of written consent / no objection agreement from all other partners in respect of the said partner working for other ACOs as an empanelled expert. The written consent / no objection agreement needs to be submitted by the AO/ACO with its application. Such a person can be empanelled with maximum 3 AOs/ACOs.

f. An expert employed with an NGO or a Research/Academic institute may seek empanelment with a maximum 3 AO/ACO. (subject to condition 5.1.5 i given below)

g. All empanelled candidate(s)/expert(s) are required to furnish a Declaration of Association in the format given at **Annexure 12** signed by the candidate/expert and countersigned by the authorized signatory of the AO/ACO. There should also be a MOU or Agreement between the empanelled candidate/expert stating the tenure and scope of association duly signed by both the parties.

h. Empanelled expert(s) shall contribute to the project as and when the work is assigned to them and their expected functions are same as those for IH experts.

i. PCs, TAEs and TMs must maintain field log books of their visits to the site giving the observations, work done etc., for the stated activity.

j. Submission of any false or misleading information in any of the above aspects, shall lead to the cancellation of approval of such experts and/or application/ accreditation of the organization.

5.2 FIELD INVESTIGATION AND LABORATORY ARRANGEMENT

Collection of quality data is of crucial importance for preparing Geological report and Mining Plan. A good understanding of the project based on visit to the project site by approved PCs and TAEs is of utmost importance for developing the scope of study and for data collection.

The field investigation would include as per the Prospecting plan to cover following aspects:

I. Exploration coverage
II. Borehole Density following ISP (Indian Standard Procedure) norms
III. Coring and Non-Coring Drilling data
IV. Geophysical logging
V. Borehole core sampling – analytical parameter coverage
VI. RQD and Physico-Mechanical sampling and testing
VII. Topographical and borehole Survey Data
VIII. Remote Sensing and GIS data
IX. Hydrogeological Data

5.2.1 LABORATORY ARRANGEMENT FOR ANALYSIS AND RECORDS OF RESULTS The AO/ACO may have an in-house laboratory or agreement/MOU with one or more external laboratories for work related to collecting data. If it engages more than one laboratory to cover its requirements of Prospecting work being carried out in different parts of the country, it should have a clear internal guideline of assigning the work to a particular laboratory and maintaining the necessary record of the same.

Laboratories engaged for the Coal core analysis / assay of mineral and ore should be carried out by Government recognised/NABL accredited / CSIR-CIMFR lab/Institution lab/university lab. The scope of accreditation/ recognition/certification should cover relevant parameters ***Appendix E***

Wherever such data generation includes collection of samples at the site by the AO/ACO followed by analysis of the same at the laboratory, a detailed written down procedure should be available with the AO/APA in the QMS, including methodologies for collection, preservation and transportation of such samples to the laboratory (vide ***Appendix C*** for details). The procedure should specifically address as to who are to be involved in selecting sampling locations, parameters to be analysed for, collection, preservation/transportation etc. of samples.

5.2.2 ANALYTICAL PARAMETERS: REFER *APPENDIX_H.* for further details please refer to latest guidelines issued by concerned authority.

5.3 QUALITY MANAGEMENT SYSTEM (QMS) –

One of the long-term objectives of this Scheme is to encourage the agency / organization(s) to adopt system-oriented approach for report preparation. Ideally, all Prospecting and Mining Plan Preparation Agency/ organizations should have their own report preparation manual as well which they may enrich from their learnings' over the years.

To facilitate the above, the applicant organization must maintain a Quality Management Systems (QMS) for the organizations. The QMS should be based on the current version of ISO 9001 standards. Although it is not mandatory that the organization should be ISO 9001 certified, the QMS must address the requirements of ISO 9001 and the specific requirements of the Scheme.

Prospecting Consultants are advised to establish and maintain a Quality Management System (QMS) for their organization as the same offers the following benefits;

i. Creates a culture of doing things right, the very first time.
ii. Inculcates the culture of "saying, what we do and doing, what we say"
iii. Increases system orientation and reduces person specific dependence.
iv. Encourages uniform knowledge sharing and develops skilled work force.
v. Helps develop team spirit
vi. Reduces duplicate work and minimizes wastages.
vii. Improves quality of work and brand image.

QMS should be based on ISO 9001 while addressing specific requirements of NABET Scheme. Please note that if an organization is already ISO 9001 certified, guidelines C1 to C4 and C11 are normally addressed (which may please be checked). It is then required to develop procedures for the NABET specific items i.e., C5 to C10 and integrate them with the system meaning that these should also come under the ambit of auditing, document control, management review etc.

If an organization has not been initiated into the system-oriented approach of working which is documented, audited and reviewed, it needs to acquaint itself of ISO 9001 requirements. Such organizations may initially take the help of a consultant but MUST NOT OUTSOURCE THE WORK OF ESTABLISHING THE QMS to him to meet the requirements of the NABET Scheme. Such an approach will be counterproductive as the system so developed is less likely to be owned by the working team and would remain a standalone document. THE BEST WAY IS TO GET THE GUIDANCE OF A CONSULTANT BUT LET THE WORKING TEAM ESTABLISH THE SYSTEM.

A QMS is supported by a 3-tier documentation system:

i. The Quality Management System manual.
ii. Procedures
iii. Work instructions/forms/formats/checklists to implement the procedures

Details are given in ***Appendix C.***

5.4 COVERAGE AND QUALITY OF GEOLOGICAL REPORT (GR) AND MINING PLAN REPORTS:

In order to ensure quality and compliance the Accredited Prospecting Agency shall ensure that preparations of Geological Report (GR) is in accordance with the Indian Standard Procedures for Coal resource estimation issued by Central Geological Programming Board of GSI or any other standard procedure specified by Central Government. The Geological Report (GR) are prepared as

per the latest guidelines issued time to time by the competent authority covering following aspects -

a. Project description with location, accessibility, photographs, layout maps.
b. Aerial **reconnaissance:** Remote sensing, airborne geophysical survey, etc.
c. **Geological Mapping** - Geology of area and project, linking of maps with topo grids, Assessment of detailed stratigraphy, lithology, structure, surface mineralization, analysis of old history of mining,
d. **Surveying -** Preparation of detailed topographical map including all surface geological features, extent of deposit, structure, location of boreholes, assay plan and sections of exploratory mine development and borehole data.
e. **Drilling** – Close spaced detailed drilling as per exploration program following grid pattern depending on the necessity. Core drilling or non-core drilling, Core recovery in coal and non-coal portion of the borehole Core recovery in coal and non-coal portion of the borehole should be > 90 % and >80 % respectively, except weathered zone, fault zone or structurally disturbed area.
f. **Sampling and Analysis** - Detailed core sampling, Chemical Analysis, bulk sampling and for testing of processing technology, beneficiation studies to be carried out depending upon coal qualities. Physico-Mechanical studies
g. **Geochemical survey:** (for all metallic mineral exploration) - Grab/chip sampling of rocks or weathered profiles, Recording of broad geomorphology, drainage etc., Grid geochemical sampling
h. **Geophysical survey:** Detailed ground geophysical work, Bore-hole geophysical logging (m), Surface Geophysical (No. of VES), HRSS (L.km), Profiling (L.km), Gravity Surveys (Number of Stations), Magnetic (Number of Stations), Seismic Refraction, borehole deviation studies in boreholes for >600 m depth, Resistivity Survey to decipher coal seam incrops.
i. **Petrographic & Mineralogical studies**: Petrographic study of rocks of the deposit and its surroundings, Mineralogical studies, identification of zones of oxidation and primary zones, grain size distribution, overall characteristics of useful deposit.
j. **Geostatistical analysis -** borehole data, thickness of ore: waste encountered in holes, assay values of samples and Iso-grade maps
k. **Hydrogeological Studies -** Ground water &surface waters studies
l. **Data Interpretation and Reserve Estimation –**
    a. Delineation of Coal Seam/Section, correlation of coal seams,
    b. Dirt bands, parting, Floor and Roof contour plan (I30 thickness and quality for underground reserves and I100 thickness and quality for open cast reserves).
    c. Grade estimation for non-coking and coking coals,
    d. Categorization of Reserves of each seam,
    e. Ratio-wise (Coal: OB) reserves for Opencast Property and sector wise overburden volume,
    f. Description of Reserves

m. **Ore body Modelling** – Reliable geological models are generally based upon a combination of sound surface mapping (local and regional scale), consistent well-

thought out drill hole logging and well-constructed 2-D interpretive sections, Geophysical data, coal and non-coal quality data, lithology and structural data to correlate and interpret the deposit. These inputs should be used to create a 3D model that is interrogated and tested by further drilling, including the possibility of alternative interpretations which could impact the Mineral Resource

a. A user configurable borehole database,
b. Effective and efficient data validation and auditing
c. Fast and accurate Multi-Seam, Multi-Variable Modelling builds entire models, including seam floor, thickness, quality and other surfaces in minutes
d. On-screen deposit correlation
e. Missing data interpolation to maximize your data value across the entire deposit
f. Seam splitting and merging, washouts and shallow hole modelling
g. Complex model operations to determine strip or economic ratios for open pits Contouring, sectioning, 3-D borehole, statistics and histogram displays to maximize resource presentation to managers, mining engineers or investors
h. Generate sections, plans and reports on modeled attributes (e.g. ash or GCV, thickness and depth).
i. Detailed resource reporting, including editable run-time mathematical operations
j. Resource reporting to meet UNFC codes, JORC, SAMREC or other stock exchange requirement

The accredited Mining Plan Preparing Agency (MPPA) shall ensure that the Mining Plan is prepared following the latest guidelines issued by the concerned Ministry. The Mining Plan shall cover prescription for different phases of life of the mine as stage plan. The stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life).

a. **Geology:** Geology of area and detailed Prospecting data
b. **Samples: geotechnical and ground & surface waters studies.**
c. **Mining - Methods of mining, mining plan, detail of manpower**
d. **Mining report/ mining plan/working mines/Mine Closure plan**
e. **Details of equipment required - equipment list**
f. **Infrastructure, construction, etc: Full details**
g. **Processing - Proven, pilot plant/industrial scale level investigations, plant layout,**

h. **Specific end-use grades of reserves (above economic cut-off grade)**
i. **Costing - Capital costs with break up and operating costs, working capital**
j. **Marketing - An overview, industry structure and specific market studies**
k. **Socio- economic aspects:** impact, rehabilitation of project affected persons
l. **Environmental considerations** - details of waste disposal/reclamation, detailed land use data, disposal of placer material/handling plan, effluent treatment etc.
m. **Economic viability** - Cash flow forecasts, inflation effects and sensitivity studies
n. **Other factors**- Statutory provisions relating to labour, land, mining, taxation etc.

5.5 Organizational commitment

The objective of the Scheme is to identify credible Prospecting/ exploration and Mining Plan preparing Agencies/ Organizations who should prepare standard quality Geological Report (GR), Mining plan and Pre-feasibility/ Feasibility report in the country. This will be possible when there is a commitment from the accredited agencies towards comprehensive report. This has been factored in the Scheme and for Re-accreditation assessment compliance to the accreditation condition by the accredited agency/ organization since receiving accreditation is also taken into account.

Details of assessment criteria for the above requirements are given in respective ***Appendix E.***

6.0 ACCREDITATION CYCLE

Accreditation Cycle in this Scheme is for 3 years and comprises 3 types of assessments:

Initial accreditation (IA): In the IA, the potential of the applicant organization is assessed and based on that accreditation is granted. On successful completion of the initial assessment, an applicant organization is given accreditation for 3 years, subject to a surveillance assessment after 18 months. Details of IA are furnished in ***Appendix E.***

Surveillance assessment (SA): This is to assess performance after IA/ RA. The basic objective is to judge to what extent the performance along with compliance to the conditions of accreditation has been met. SA falls due 18 months after IA/ RA. Details of SA are furnished in respective ***Appendix E*.**

Re-accreditation (RA): Following the principle of 'consistency', in RA the emphasis is laid on the consistent quality achieved by the ACO during the period of accreditation.

On completion of three years from initial accreditation, the organization is re-assessed with emphasis on improvements achieved. Details of RA are furnished in respective ***Appendix E.***

7.0 ACCREDITATION PROCESS

The accreditation procedure for IA, SA and RA includes three processes:

A. Application assessment process

B. Office assessment process
C. Decision making process

7.1 APPLICATION ASSESSMENT PROCESS

There are separate application forms for IA, SA, RA, expansion of scope and supplementary assessment for replacing approved experts who may have left the organization. These can be downloaded from the NABET website www.http://nabet.qci.org.in/ .

Detailed information on documents required to be submitted with the application for IA, SA, RA is provided in ***Annexure 1, Annexure 2, Annexure 3 respectively***.

Applicants are advised to go through the accreditation scheme carefully prior to preparing/submitting their application. They must complete the Self-assessment Format given at ***Annexure 11*** to know if the applications are ready for submission and whether they are ready for NABET assessment. This would greatly reduce processing time benefiting both, the AO/ACO and NABET. Applications are to be submitted online on the NABET website. In case, NABET requires hard/soft copy of any document, the same is intimated to the AO/ACO.

Application for SA must be submitted three months prior to when SA is due i.e. on completion of 15 months after date of office assessment for IA/RA, as applicable. Similarly, RA application should be submitted three months prior to expiry of accreditation period i.e., on completion of 33 months after date of office assessment for IA/RA, as applicable.

NABET application process is on-line and procedure to be adopted for applying on-line will be posted on the QCI/NABET website.

Assessment of the applications is carried out in 3 stages -

Stage I– Checking completeness of the application by NABET secretariat

Applications submitted by an AO/ACO must be complete in all respects and is inclusive of all supporting documents mentioned in the checklist of Application Form (for IA, SA, RA) of this Scheme.

NABET secretariat checks if the
(a) Application is complete in all respects,
(b) Information submitted is in relevant formats and
(c) Application is accompanied by the requisite fee.

In case an application is grossly incomplete in respect of candidates/experts, laboratory arrangement etc., NABET secretariat informs the AO/ACO of the inadequacies. Such applications are processed further once the inadequacies are addressed. For other applications, the NABET secretariat forwards the application to the principal assessor (see below) for technical scrutiny. The AO/ACO is advised to carefully study the requirements mentioned in ***Appendix E,*** before filling in the application.

Stage II - Technical review of documents

Assessor with vast experience in the relevant fields conduct technical review of documents of the applications submitted to NABET. For each application two assessors are assigned. The Principal Assessor (PA) carries out the Stage II assessment supported by the NABET staff. The PA is joined by a Co-Assessor (CA) for the office assessment (see below). Allocation of assessor (CA) will be based on the number of expert(s) to expedite the process. After Stage II assessment the PA may raise Non-Conformances (NCs) and/or Observations (Obs.) pointing out the areas where the application does not meet the requirements of the Scheme. After the NCs and Obs. are successfully closed by the AO/ACO, further processing of the application i.e. the office assessment is taken up.

Stage III - Office assessment

It involves assessment of an application in the following aspects:

a. Quality and performance of personnel
b. Infrastructure, P & M, adequate Software (SW) and Hardware (HW)
c. Field investigations and laboratory systems to ensure data integrity
d. Quality Management System
e. Quality of Prospecting Work, Mining Plan and Pre-feasibility/ Feasibility report data
f. Organizational evaluation/commitment
g. Compliance to condition of accreditation/ improvements achieved (for SA and RA)

Marks allocated for the above aspects in the Office Assessment are mentioned in below tables:

TABLE 1: WEIGHTAGE OF MARKS FOR PROSPECTING AGENCIES

Sl. No.	Aspects	Marks Allotted			Focus in assessment
		IA	SA	RA	
1	**Quality and performance of personnel**	**30**	**30**	**30**	IA – Potential of the AO
1a	Project Coordinator (PC)	10	10	10	
1b	Technical Area Expert (TAE)	20	20	20	
2	**Infrastructure, P & M, adequate Software (SW) and Hardware (HW)**	**20**	**20**	**20**	
3	**Field investigations and laboratory systems to ensure data integrity**	**20**	**10**	**10**	

4	**Coverage and Quality of Geological Report (GR)/ Exploration Assignments**	**15**	**20**	**20**	SA – Compliance & Performance of ACO
5	**Quality Management System (QMS)**	**15**	**15**	**15**	
6	**Compliance to condition of accreditation/ Organizational Commitment**	**0**	**5**	**5**	RA – Performance & Improvement of ACO
	Total	**100**	**100**	**100**	

TABLE 2: WEIGHTAGE OF MARKS FOR MINING PLAN AGENCIES

Sl. No.	Aspects	Marks Allotted			Focus in assessment
		IA	SA	RA	
1	**Quality and performance of personnel**	**30**	**30**	**30**	
1a	Project Coordinator (PC)	10	10	10	
1b	Technical Area Expert (TAE)	20	20	20	IA – Potential of the AO
2	**Infrastructure, P & M, adequate Software (SW) and Hardware (HW)**	**30**	**30**	**30**	
3	**Coverage and Quality of Mining Plan / Mining Assignments**	**15**	**20**	**20**	SA – Compliance & Performance of ACO
4	**Quality Management System (QMS)**	**25**	**15**	**15**	
5	**Compliance to condition of accreditation/ Organizational Commitment**	**0**	**5**	**5**	
	Total	**100**	**100**	**100**	RA – Performance & Improvement of ACO

The assessment process is primarily evidence based and objective in nature. Issues to be assessed for various aspects in office assessment are detailed in ***Appendix E***. After obtaining accreditation, an ACO is expected to strictly abide by the conditions of accreditation. Efforts towards capacity building and commitment to quality work are given due weightage.

Normally, 10 days prior notice is given to the AO/ACO for office assessment. However, NABET reserves the right to visit the office/site un-announced, if it is deemed necessary.

7.2 DECISION MAKING PROCESS

On completion of office assessment process, a joint report is prepared by the PA and CA (or CAs) and sent to the NABET secretariat for further processing. The PA is responsible for the final report. NABET secretariat after checking the completeness of the report, obtains clarifications/additional information, if required, from the AO/ACO/Assessors. The case is then put before the accreditation committee by the NABET secretariat for its consideration, review and decision on accreditation. The accreditation of an agency / organization will be effective from the last date of the office assessment. The final outcome is thereafter uploaded on QCI/NABET website.

7.3 TIME FRAME FOR APPLICATION AND ACCREDITATION PROCESSES

Completion of application, assessment and accreditation processes depends on the following:

a. Receipt of complete information at NABET for Stage I and II assessments along with necessary documents and closure action of NCs/Obs., as applicable, for IA, SA and RA applications.
b. Timely submissions of such information by AO/ACO within 15 days for SA and RA. For initial accreditation AOs are requested to submit the required details as early as possible.
c. Timely raising of queries by NABET within 15 days for Stage I and 1 month for Stage II.

Subject to the above, all efforts are made by NABET to complete the process of granting accreditation within 3 months of submission of complete information by AO/ACO.

7.4 ACCREDITATION PROCESS OUTCOME

The salient outcomes from accreditation process are as follows:

a. **Accredited** – in case the applicant organisation/agency clears the assessment and accreditation processes successfully, the result is posted on the QCI/NABET website and the AO/ACO is also informed separately, refer ***Appendix E*** for details.
b. **Not approved** – if the AO/ACO fails to obtain 40% marks in the office assessment or does not fulfil any other requirements of the Scheme, the application is not approved and accreditation is not granted, refer ***Appendix E*** for details.
c. **Cancellation** - in case an ACO does not fulfil conditions of accreditation or does not submit complete application for SA or RA in time, a reminder is given to do the same in the next 15 days. If complete application is not submitted even after 15 days, a final notice is served for responding giving another 15 days' time.
   In the event of non-compliance after the final notice as well, the accreditation granted to the ACO is cancelled and its' name is removed from the list of accredited consultants. In case it wishes to get considered again under the Scheme, it is required to submit a fresh application with requisite fee. Fresh assessment is then carried out as per IA norms
d. **Incomplete applications** – If an AO submits an incomplete application in which requisite details are not provided or it does not meet the requirements of the Scheme in respect of eligible candidates for Project Coordinator (PC) and Technical Area Expert (TAE), QMS,

Laboratory details etc., the same is put in the 'incomplete applications' list. NABET intimates the AO of the deficiencies in the application. If it is an application for IA, the same is processed further once all requirements are fulfilled.

7.5 CATEGORY OF ACCREDITED CONSULTANTS

Prospecting and Mining Plan Preparation Agency/ organizations are granted accreditation in categories 'A' or 'B'. Experts are also approved in categories A or B under this Scheme. Specific conditions applicable for categorization of organization and experts in IA, SA and RA are detailed in ***Appendix E.***

If an approved category A expert scores less than 50% marks in SA, s/he is issued an alert and her/his approval status may be changed to Cat. B. A category B expert is upgraded to category A if s/he scores 60% or more in SA/RA/Supplementary Assessment.

8.0 ACCREDITATION FEES

QCI/NABET does not get any financial assistance from any agency for operation of this Scheme. Hence, to offset the costs involved in the implementation of the Scheme by NABET, fees are charged for organizing the assessment and accreditation processes and annual fees for updating and maintaining the Scheme. Details are given in ***Appendix D*****.**

Applicable fee payment procedure and Terms & Conditions (T&C).

8.1 The AO/ ACO shall pay application fees for accreditation, re-accreditation; expenses towards travel, boarding & lodging for any kind of assessment including supplementary visit, surveillance, desktop surveillance, re-assessment and annual accreditation fees as determined by NABET.

8.2 All invoices will be generated online and payments to be made online through payment gateway on the web Portal of the scheme. In case any invoice raised by NABET manually, should be paid within one month of date of dispatch/mailing of the invoices. Timely payment of dues to NABET by the AO/ACO is crucial to the Scheme. Processes of IA, SA and RA can proceed to the next stage only if all pending bills to NABET are cleared by the AO/ACO. Failure to pay the applicable dues by the deadline given in invoices may result in delisting from the list of Accredited Consultant Organizations. This may be followed by cancellation of accreditation if the dues remain unpaid upto 6 months (180 days).

In case of delay in payment of applicable fees at any stage beyond one month from the date of issuance of NABET's invoice, penalty @1.5% per month of delay is applicable.

9.0 GRANT OF ACCREDITATION

Results of the accreditation committee meeting are uploaded on the QCI/NABET website within a month of the AC meeting in which the relevant case is discussed. A formal letter from NABET is

sent within one month from the date of approval by the accreditation committee mentioning the, experts approved with category, detailed conditions of accreditation and NCs & Obs., if any. NABET's certificate of accreditation is issued on successful closure of all NCs and Obs.

9.1 MAINTAINING ACCREDITATION

Accreditation of Prospecting and Mining Plan Preparation Agency is subject to compliance to the requirements of the QCI – NABET Scheme. These include, but are not limited to:

a. Implementation of systems/procedures documented in the QMS manual of the ACO including the corrective and preventive actions for the NCs and Obs. of IA, SA, RA, as applicable.

b. ACOs are encouraged to prepare their own 'Report preparation manual' detailing the procedures followed right from the time of placing quotes for the work to completion of the project.

c. Timely replacement of experts - in case any approved PC or TAE leaves the ACO, s/he needs to be replaced with in a specific time mentioned in *Section 9.2*.

d. Intimation of changes – in case of any change in the organization related to systems, procedures, laboratory and other facilities, the same is to be intimated to NABET in the within one month.

e. Payment of fees, as applicable, to NABET as per the terms of accreditation.

f. At the beginning of the reports prepared by the ACO a declaration is to be given by the ACO in the prescribed format as given in ***Annexure 8*** mentioning the names of the PC and TAEs involved. This form must be duly signed by them and countersigned by the CEO of the organization.

g. Familiarity with the project and its site conditions is -basic requirement- for the concerned PC and relevant TAEs.

h. All PCs and TAEs and team members involved in the project should maintain a field logbook with noting done at the site. NABET's assessors may verify these during the office assessment. It is worthwhile to maintain other documentations on the expert's site visits viz., expert's report, and authorization of tours, travel documents etc.

i. The ACO is to strictly avoid practices/actions mentioned in Section 9.3 to ensure that accreditation granted to it is not cancelled.

j. The ACO is to maintain the following records (in soft or hard format)

   i. A register of attendance of employees involved in project.

   ii. Names of the experts (both in-house and empanelled) involved in projects handled by the consultant organization.

   iii. Details of involvement of empanelled experts, in terms of time devoted to various projects.

iv. Updated declaration of empanelled experts indicating the number of organizations they are associated with.

v. All documents related to laboratory work and implementation of QMS

9.2 CHANGE AFTER ACCREDITATION

The change after accreditation can be done in one respect, i.e. Change in experts:

Since accreditation of a consultant organization is based on the experts approved, an ACO must inform NABET if an approved expert leaves the organization and propose a replacement in accordance of the Scheme's requirements within one month. Failing to propose a replacement on time is a non-conformance, viewed seriously and may also result in cancellation of accreditation.

A new candidate may be proposed as a PC or a TAE for assessment at any time. However, for a person already assessed and not approved may be proposed only after a gap of 3 months enabling her/him to address the shortfall.

Applications (as per ***Annexure 4***) proposing replacement or new candidates should accompany requisite application fee as per ***Appendix D*****.**

9.3 SUSPENSION/CANCELLATION/DEBARMENT OF ACCREDITATION

NABET may suspend or cancel an accreditation or even debar an organization on account of any or quality of report or more grounds during accreditation process or after, but not limited, to the following:

a. Non-compliance or violation of the NABET's requirements and conditions of accreditation and deviation from facts as stated in application and enclosures

b. In case an approved expert leaves the organization, the ACO is required to inform NABET of the same within one month and get a replacement approved within the next two months.

c. Submission of false or misleading information in the application or in subsequent submissions

d. Improper use of NABET's accreditation mark, letter of accreditation from NABET or the QCI/NABET logo

e. Carrying out changes in Project coordinators/experts without NABET's approval

f. Failure to report any major legal (mandatory compliance) changes and evident conflict of interest

g. Using fraudulent practices by the ACO in respect of its submission/interaction with NABET/authorities which include, but not limited to, deliberate concealment and/or submission of false or misleading information, suppression of information, falsification of records or data, unauthorized use of accreditation.

h. Non- payment of applicable fees.

i. Violation of the Code of Conduct for the consultant organizations (see Section 11.0)

j. Any other condition deemed appropriate by NABET.

The decision for the suspension/cancellation/debarment is taken by the NABET accreditation committee.

A clarification/explanation may be sought and show cause notice may be issued and put up to the accreditation committee for final decision on the matter.

9.4 ACTIONS FOR MISCONDUCT/FRAUDULENT ACTIVITIES

Submission of false or misleading information or use of fraudulent practices, an AO/ACO may be disqualified for up to one year and such organisation(s) name may be delisted from the NABET list of Accredited organizations with an information to the concern ministry, to be decided by the accreditation committee depending on the seriousness of the action. Such AO/ACO will be able to re-apply only after expiry of the disqualification period. The application is to be accompanied with an undertaking from the CEO of the organization that, if such practices are repeated, it will render the organization ineligible to participate in the NABET accreditation scheme any further. The same approach is applicable for individual experts (PCs and TAEs) as well.

9.5 CONFIDENTIALITY

All information, documents and reports submitted by an AO/ACO to NABET are utilized by the NABET, assessors, members of accreditation and technical committees for the purpose of assessment and accreditation. These may also be shared with the concerned Ministry, Government of India. However, the identity of the accredited consultant organizations would be masked for sensitive information related to business whenever it is called for/appropriate. In case an AO/ACO wants the information to be kept confidential, a communication must be sent to NABET citing reasons for the same. NABET reserves the right to take appropriate decision in this regard. NABET also reserves the right of taking appropriate action against an ACO for deliberate breach of confidentiality.

The ACO is required to have adequate arrangements consistent with applicable laws to safeguard confidentiality of all information provided by its clients. These arrangements are extended to include organizations or individuals acting on its behalf and as its representatives.

10.0 GRIEVANCE REDRESSAL MECHANISM

There are two methodologies available under the Scheme for addressing the grievances of AOs and ACOs–

a. Review of Decisions
b. Appeal

10.1 REVIEW OF DECISIONS

In case an AO/ACO wishes for review/reconsideration of any decision taken by NABET, they may send a request for same to NABET.

The following procedure is applicable:

a. Request received from AO/ACO by NABET is recorded in the same serial as date of receipt

b. Request must mention specific complaints (not generic in nature) and supported by documentary evidence.

c. Anonymous/ pseudonymous requests are not be entertained.

d. Each request must be accompanied with an ECS/ Demand Draft of Rs. 25,000/ plus Services Tax and other relevant cess as applicable, payable in favour of "Quality Council of India" to partially offset the cost of hearing of such requests.

e. Only substantial errors/mistakes on procedural matters or expert(s) approval issues or review of assessment or / accreditation cancellation or other related to the scheme are taken up for consideration. Re-assessment of any aspect of assessment or request for deviation from the Scheme cannot be considered.

f. Such 'Reviews' are taken up for consideration in a meeting of the relevant Accreditation Committee as early as possible.

g. Agenda of such meetings is intimated to the AO/ACO.

h. AOs/ACOs making the request may present their case in person to the AC, if they so desire.

i. Decision of the AC is intimated to the concerned organizations as well as posted on QCI website.

10.2 APPEAL

An AO/ ACO may apply for Appeal in case it is not satisfied with the 'Review' decision.

An 'Appeal' must include the specific issues on which the appellant is filing the appeal accompanied by supporting documents, fees for appeal. The following information is to be provided while submitting the appeal -

Sl. No	Specific issue/s submitted in Review	Supporting documents submitted in Review	Decision of Review Committee	Additional/ new issues submitted in Appeal now	New supporting documents added now
1	-	-	-	-	-

The following procedure is applicable:

i. Formation of 3-member Appeals Committee by NABET, chaired by a member of NABET Board and comprising one more member from NABET Board and one subject specialist.

ii. The Appeals Committee proposed is approved by the Chairman, NABET Board.

iii. The documents received from the appellant are submitted to the members of the Appeals committee by NABET Secretariat.

iv. Process of hearing by the committee - the committee fixes a date for the hearing which is intimated to the appellant by NABET secretariat. A reasonable notice period is given for the appellant to appear in the hearing. The committee gives due opportunity to the appellant and the NABET secretariat to present their cases. The committee gives its decision after hearing both the sides and based on deliberation within it.

v. The decision of the Appeals committee is intimated to the appellant by NABET Secretariat.

vi. Each request for appeal must be accompanied with an ECS/ Demand Draft of Rs. 25,000/ plus Services Tax and other relevant cess as applicable, payable in favour of "Quality Council of India" to partially offset the cost of hearing of such appeals vide ***Appendix D***.

11.0 CODE OF CONDUCT

All ACOs are obliged to improve the standing of the consultancy profession by rigorously observing the Code of Conduct. Failure to do so may result in the suspension or cancellation of accreditation.

11.1 USE OF QCI AND NABET LOGO

a. The QCI and NABET accreditation logo is the property of NABET and its use is controlled. Compliance to the guidelines and conditions is required for using this.

i. Whenever a Prospecting and Mining Plan Preparing Agency is accredited, NABET shall inform the relevant entity about the conditions of the use of accreditation mark.

ii. Accreditation mark can be used by NABET accredited consultant organizations only.

b. Guidelines and conditions of use of accreditation mark

i. Accreditation mark as appears on NABET Accreditation certificates can be printed as coloured image or black and white

ii. Accreditation mark shall not be used to suggest any approval or sponsorship of NABET other than the organization accredited.

iii. Accreditation mark shall not be used in any way that misleads the reader about the accreditation status of the consultant organization

iv. Accreditation mark is not transferable and is to be used only by the accredited consultant organization as described in its application.

v. Accredited consultant organization upon suspension or withdrawal or expiry of its accreditation (however determined), shall discontinue the use of NABET accreditation mark on all media of communications by the organization including promotional material, letter head, newsletters, brochures, annual reports, business cards, websites and advertisements etc.

vi. NABET reserves the right to change the conditions as and when considered necessary and the same shall be communicated to consultant organization.

vii. Use of accreditation mark is applicable for consultant organizations only and not for individual expert/s.

c. Verification

a. NABET may, at its discretion, carry out verification of proper use of the accreditation Mark.

b. If any misuse of the accreditation is noticed, NABET initiates actions as per procedure for suspension and/or cancellation of its accreditation.

11.2 UNDERTAKING BY CONSULTANT ORGANIZATION

The consultant organization undertakes to:

a. Act professionally, accurately and in an unbiased manner.

b. Be truthful, accurate and fair to the assigned work, without any fear or favour.

c. Judiciously use the information provided by or acquired from the client in carrying out the project and to maintain the confidentiality of information received or acquired in connection with the assignment.

d. Use the expertise of only approved experts of relevant category in the preparation of Mining Plan/ Geological Reports.

e. Avoid and/or declare any conflict of interest that may affect the work to be carried out.

f. Not accept any favour from the clients, or their representatives.

g. Not act in a manner detrimental to the reputation of any of the stakeholders including NABET and the client.

h. Co-operate fully in any formal enquiry procedure of NABET.

Prior to accreditation, the AO signs the “Code of Conduct for Prospecting and Mining Plan Preparing Agency” and sends it to the NABET secretariat.

APPENDICES

Appendix A

A. QUALIFICATION, EXPERIENCE AND FUNCTIONS OF EXPERTS: (Prospecting Agency)

Experts involved in the Geological Reports preparation comprise Project Coordinator (Prospecting) and Technical Area Experts (TAE). They may be helped by team members. The qualification and experience requirements of the experts and roles envisaged for them are detailed below-

A 1. Project coordinator (Prospecting):

A 1.1 Minimum educational qualifications

a. Master's (post-graduate) degree/ M. Tech in either subject- Geology/ Applied Geology/Geophysics/Hydrogeology/Remote Sensing & GIS/ from a UGC/AICTE recognized University/ Institution or equivalent.

b. Desirable – Relevant trainings/ courses of 6 months duration and above.

A 1.2 Experience of Project Coordinator

a. Minimum 15 years overall work experience after the completion of above-mentioned qualifying degrees.

b. Officers retired/served for minimum 15 years in Central/ State Government/ Research Institutes/ universities/ Colleges as Geologist will be considered to fulfil the minimum experience.

c. Proficient in MS office, CAD, ArcGIS, Modelling Software, Data Processing Tools, Geological Modelling Tools.

A 1.3 Specific Experience in Prospecting:

a. Project Coordinator (PC) must have Specific experience related to planning and managing the advanced Prospecting projects

b. Designing and implementing QAQC protocols

c. Geological modelling and Geostatistical analysis,

d. Resource Estimation and Resource classification in accordance with UNFC, NI 43-101, JORC and SAMREC reporting codes.

e. Prepared at least 3 Geological Report.

f. Monitoring of 3 Geological Report (auditing, performance evaluation etc.),

g. A total of three in combination of (e) and (f)

A 1.4 Expected functions of Project coordinators (Prospecting):

The Project coordinator should be thoroughly aware of Prospecting methodology, requirements and be familiar with the guidelines of report preparation, MMDR Act, Prospecting rules and all relevant regulations and its Amendments. S/he must have a clear

concept and thorough knowledge of prospecting and Prospecting requirements. S/he should share this information with other team members.

The expected functions of Project Coordinator are as follows:

a) Complete understanding about the project specification, develop broad scoping of the project taking into consideration site specific requirements

b) Meeting with project Director/Owner, framing the methodology for Prospecting program.

c) In depth understanding in respect of topography, hydrology streams, Geology, Hydrogeology, land use etc.,

d) Visiting the site for appropriate duration for the selection of sampling locations and deciding the type of samples in consultation with the TAEs.

e) Collating and reviewing the reports of the TAEs which must include analysis and interpretation of data.

f) Developing the draft Geological Report and circulating the same amongst team members for final feedback and ensuring completeness of the report.

g) Discussing the draft Geological Report with the project directors/owners for their comments.

A 2.0 Technical Area Expert (Prospecting):

A 2.1 Minimum educational qualifications

a. Master's (post-graduate) degree/ M. Tech - (Geology, Applied Geology, Geophysics, Hydrogeology, and Remote Sensing & GIS) from a UGC/AICTE recognized University/ Institution.

OR

b. Bachelor's degree/diploma or equivalent in technical subjects such as Mechanical (Drilling), Geotechnical and Earth Resource Engineering and equivalent from a UGC /AICTE recognized University/ Institution.

c. Desirable – Relevant trainings/ courses of 6 months duration and above.

A 2.2 Minimum Experience for Technical Area Expert (TAE)

a. An expert should have a minimum 5 years overall experience in the concerned technical area(s) knowledge in preparing Prospecting/ Geological report(s).

b. Officers retired/served for minimum 5 years in Central/ State Mining Departments/Organization/ Research Institutes/ universities/ Colleges as Geologist, Geophysicist, Remote Sensing & GIS expert and Hydrogeologist will be considered if worked in the respective areas.

c. Proficient in MS office, CAD, ArcGIS, Modelling Software, Data Processing Tools, Geological Modelling Tools.

A 2.3 Specific Educational Qualification and Experience for each TAE

A 2.3.1 Technical Area Expert - Geology (GEO):

a. Educational qualifications specific to functional area

i. Master's (post-graduate) degree/ M. Tech in either subject- Geology/ Applied Geology from a UGC/AICTE recognized University/ Institution or equivalent.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Hands-on experience in geological Prospecting, mapping, and data interpretation

ii. Knowledge of geological principles, basin modelling and mineral reserves

iii. Preparation of ore body model using SW like Minex, Datamine, Geosoft, Minesoft, Surpac, AutoCAD, etc.

iv. Familiarity with Prospecting geology concepts and survey processes

v. Ability to interpret 2D/3D seismic data and create geologic maps and models

vi. Ability to identify natural resources and determine their economic value

vii. High level of analytical skills to interpret Prospecting data pertaining to mineral prospects.

viii. Experience in Coal/ Metal mining model preparation is preferred

c. Role and Responsibilities

a. Performs scouting of Prospecting activities in the region, preparation of Prospecting activity plans and budget

b. Execution of drilling operations at prospective locations, Collection, evaluation and reporting on field samples and prepare activity logs.

c. Created and presented accurate geology-based maps, cross sections, and geological models.

d. Directed, supervised and managed all work performed by field crews and drillers.

e. Entered and maintained sample information and Prospecting data in relevant database.

f. Interpreted and complied with all applicable governmental regulations and laws.

g. Evaluation of geological & mineable resources of proposals received from national & international prospects.

h. Research on the feasibility of developing these mineral prospects by analysing, reviewing, and forecasting data for operational and business planning and preparation of the feasibility study report.

i. Study of available GSI, MECL and other Prospecting reports, compilation and correlation for assessing the likely potentiality of the mineral prospect.

A 2.3.2 Technical Area Expert - Geophysics (GP):

a. Educational qualifications specific to functional area

i. Master's (post-graduate) degree/ M. Tech in either subject- Geophysics/ Applied Geophysics from a UGC/AICTE recognized University/ Institution or equivalent.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Planning and execution of Geophysical Surveys including special studies using suitable geophysical technique and equipment.

ii. Geophysical methods comprise of measurement of signals from natural or induced phenomena of physical properties of sub surface formation.

iii. Various physical properties that are made use of in different geophysical techniques are electrical conductivity, magnetic susceptibility, density, elasticity & radioactivity etc.

c. Role and Responsibilities

i. Prospectively evaluation and Prepare concepts/ plays/ leads/ prospects inventory

ii. 2D & 3D seismic interpretation incorporated with all wells data, Well seismic calibration

iii. Evaluate post- drill well findings based on interpretation and integration of data.

iv. Observe the reaction of recording equipment to detect irregularities

v. Use computers for data management, quality control and communication between the office and field locations

vi. Carry out Vertical electrical sounding, Magnetic / EM profiling and Borehole logging.

vii. Interpretation of the date, synthesis of results and preparation of reports

viii. Maintenance and updating of Geophysical records

ix. Proper transportation and maintenance of equipment's.

x. Must be acquainted with state and national policies.

A 2.3.3 Technical Area Expert – Remote Sensing & GIS (RS):

a. Educational qualifications specific to functional area

i. Master's (post-graduate) degree in Science/Technology or equivalent in Geology/ Applied Geology/ Geo-informatics from a UGC/AICTE recognized University/ Institution or equivalent".

OR

ii. BE / BTech in GIS/ Remote Sensing / Spatial Sciences/ Geomatics / Geoinformatics and any other relevant fields

iii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Sound knowledge of GPS, GIS and Remote Sensing software's like ArcGIS 10, QGIS, Erdas imaging, Digital photogrammetry

ii. Experience on ArcGIS extensions like Spatial Analyst, Data Management tool, Overlay Analysis.

iii. Experience in GIS database management.

c. Role and Responsibilities

i. GIS layer analysis, feature extraction using satellite data.

ii. Coordinates and assigns GIS personnel to projects.

iii. Provides team lead oversight on projects including quality assurance, data analysis, map production and report production.

iv. Selects from multiple procedures and methods to accomplish tasks.

v. Excavation measurement to slope stability.

A 2.3.4 Technical Area Expert - Surveying (SUR):

a. Educational qualifications specific to functional area

i. Full time Degree/Diploma in Surveying from a Govt. recognized institute and possessing valid Mines Surveyor's certificate of Competency from DGMS and having one-year post qualification experience in relevant field

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Having post qualification experience in Topographical Survey, Borehole survey and relevant experience.

ii. Familiarity with Prospecting geology concepts and survey processes

iii. Verify the accuracy of survey data including measurements and calculations conducted at survey sites.

iv. Calculate heights, depths, relative positions, and other characteristics of

terrain.

v. Experience in Coal/ Metal mining.

c. Role and Responsibilities

i. Search legal records, survey records, and land titles to obtain information about boundaries in areas to be surveyed.

ii. Prepare and maintain sketches, maps, reports, and legal descriptions of surveys to describe, certify, and assume liability for work performed

iii. Prepare or supervise preparation of all data, charts, plots, maps, records, and documents related to surveys.

iv. Determine longitudes and latitudes of important features and boundaries in survey areas using theodolites, transits, levels, and satellite-based global positioning systems (GPS).

v. Coordinate findings with the work of engineering and architectural personnel, clients, and others concerned with projects.

vi. Plan and conduct ground surveys designed to establish baselines, elevations, and other geodetic measurements.

vii. Conducting Topographic survey, leveling etc.

viii. Locate and mark sites selected for geophysical prospecting activities such as efforts to locate petroleum or other mineral products.

A 2.3.5 Technical Area Expert - Hydrogeology (HG):

a. Educational qualifications specific to functional area

i. Master's (post-graduate) degree in Hydrogeology/Hydrology/Water Resources Management from a UGC/AICTE recognized University/ Institution or equivalent.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Analysis of surface hydrogeological data pertaining to ground water, flow fluctuation, estimation of flows; setting up and interpretation of gauging station readings, designing of ground water table measurement and monitoring network, computation of ground water recharge, flow rate and direction.

ii. Plotting of ground water contours.

iii. Analysis and description of aquifer characteristics e.g. Permeability, transmissivity, storage coefficient etc., estimation of groundwater potential and recharge phenomenon, determination of impact of withdrawal of groundwater.

iv. Geology and Geo morphological analysis/description/ Stratigraphy/Lithology.

v. Developing Geo-hydrological maps.

vi. Must be acquainted with state and national policies.

vii. Understanding of policies, guidelines and the legislation related to ground water

c. Role and Responsibilities

i. Collecting basic mine production data, such as annual output, drainage quantity, water inflow,

ii. The water inflow (including static-storage and recharge rate) of mine was predicted and calculated by horizontal catchment channel method, big well method and replenishment quantity method, respectively.

iii. Hydrogeological condition changes of open-pit coal mine in grass area during production process

A 3.0 Team Member (TM)

A provision of 'Team Member' has been included in the Scheme to provide opportunity to

a. experienced professionals in their own fields but lacking experience to enter the profession
b. Existing experts to expand the field of association
c. Persons who have obtained eligibility qualification but do not meet the experience requirements of TAE or PC
d. This provision is available only for in-house experts

A 3.1 Procedure to be followed to work as TM

a. As the concept of TM has been introduced to enable experts to gain necessary experience, NABET should be informed after joining the agency / organisation /ACO/ AO.

b. The person to be proposed as a TM should meet the educational requirements of the Scheme for PC or TAE, as applicable.

c. The TM has to get involved in the various functions of the PC and or TAE for obtaining the relevant experience.

d. TM may be attached with an PC and/or a TAE. The name of the TM(s) must appear in the list of experts associated in the report.

e. Information for associating a TM is to be submitted to NABET in a prescribed Format *vide* ***Annexure 14*** with following details:

   i. Declaration by the CEO/ authorized signatory of the AO/ ACO confirming the involvement of the team member in the project giving name of approved PC/ TAE with whom s/he is attached and the duration of involvement.

   ii. Specific nature of work in which the TM will be involved with the PC or TAE.

f. List of the persons being used as TM must accompany the application giving the name of the PC/TAE with whom the TM is attached.

A 3.2 Expected functions of team member

The team member (TM) is expected to be involved both in field work as well as in the discussions amongst the PC and the TAEs. Since s/he is expected to be knowledgeable in area of expertise, emphasis should be given to acquaint her/him on aspects, developing Geological Report/ Mining Plan preparation.

Appendix B

B. QUALIFICATION, EXPERIENCE & FUNCTION OF EXPERTS (Mining Plan Preparing Agency)

Experts involved in the Mining Plan preparation comprise Project Coordinator (Mining) and Technical Area Experts (TAE). They may be helped by team members. The qualification and experience requirements of the experts and roles envisaged for them are detailed below-

B 1. Project coordinator (Mining Plan)

B 1.1 Minimum educational qualifications

a. A BE/ B. Tech/ M. Tech Degree in Mining Engineering/ Opencast Mining/ Mining Machinery or equivalent granted by a university established or incorporated by or under a Central Act, A Provincial Act or a State Act including any institutions recognized by the University Grants Commission under Section 4 of the University Grants Commission Act, 1956 (3 of 1956) or any equivalent qualification granted by any university or institute outside India and recognized by Government of India.

b. Desirable – Relevant trainings/ courses of 6 months duration and above

B 1.2 Experience of Project Coordinator

a. Professional experience 15 years overall work experience after the completion of above-mentioned qualifying degrees. Modification to a mining plan shall be carried out by a person qualified to prepare a mining plan.

b. Officers retired/served for minimum 15 years in Central/ State Government/ Research Institutes/ universities/ Colleges will be considered to fulfil the minimum experience.

c. Proficient in MS office, CAD, ArcGIS, Modelling Software, Data Processing Tools, Geological Modelling Tools.

B 1.3 Mining Plan Preparation Specific experience:

Project Coordinator (PC) must have Mining Plan Preparation/ Project Report Specific experience as follows:

a. Prepared at least 3 Mining Plans/ Project Reports.

b. Monitoring of 3 Mining Plan (Pre-feasibility/ Feasibility report, auditing, performance evaluation etc.),

c. A total of three in combination of (a) and (b)

B 1.4 Expected functions of Project coordinators (Mining Plan):

The Project Co-ordinator (Mining plan) shall prepare Mining Plan in accordance with guidelines issued by Central government as per the approved standards and procedures and shall be responsible for correctness of the data furnished. Mining engineers design the future mine layouts capable of achieving production and mine development objectives, taking into account the geological characteristics and structure of the mineral

resource. They prepare production and development schedules and monitor progress against these. The Project coordinator should be thoroughly aware of Mining Plan requirements and be familiar with the guidelines of report preparation, MMDR Act, rules and all relevant regulations and its Amendments. S/he must have a clear concept and thorough knowledge of Mining Plan requirements. S/he should share this information with other team members.

Understanding of preparing mining plan including the following activities-

i. Detailed topography, mine geology, mineral deposit & existence, details of Prospecting, indicating geological and recoverable reserve, sections calculations, slice plan/level plan method, its layout phases, mechanization, operations, mine life, overburden, reservoir, mineral estimation etc and other.

ii. Blasting parameters, types of explosive, powder factor, storage of explosive.

iii. Mine drainage, stacking of mineral rejections, use of mineral & its processing and waste disposal.

iv. Environmental management plan describing the impact of mining and beneficiation on environment on the following over the next five years giving brief information about water regime, biodiversity, quality of air, noise level, climatic conditions, socio-economic, regional aspects and others along with time bound action.

v. Year wise proposal of reclamation of land.

vi. Monitoring schedules for different environmental components after the commencement of mining and other related activities.

vii. Mine closure plan and Rehabilitation & Resettlement plan.

viii. Leadership quality in planning, selecting and guiding the team

ix. Activities related to Safety Planning and accident analysis.

The Mining expert is the key person for preparing Mining reports and plans.

B 2.0 Technical area experts for Mining Plan and Design

B 2.1 Technical Area Experts (TAEs)

Mining Plan and Design is also multi-disciplinary activity where the central figure is the Mining Expert (ME) who should have broad knowledge and practical experience of preparing Mining Plan. S/he should have-

a) Clarity in the concept of the mining, knowledge of the applicable standards, Acts, Rules and regulations.

b) Domain knowledge and understanding of the organization, industry.

B 2.2 Minimum Educational Qualification for TAEs

a. A BE/ B. Tech/ M. Tech Degree in Mining Engineering/ Opencast Mining/ Mining Machinery or equivalent granted by a university established or incorporated by or under a Central Act, A Provincial Act or a State Act including any institutions recognized by the University Grants Commission under Section 4 of the University Grants Commission Act, 1956 (3 of 1956) or any equivalent qualification granted by any university or institute outside India and recognized by Government of India.

b. Professional experience of three (3) years of working in a supervisory capacity in the field of mining after obtaining the degree.

c. Desirable – Relevant trainings/ courses of 6 months duration and above.

B 2.3 Minimum Experience for TAEs

a. An expert should have a minimum 5 years overall experience in the concerned technical area(s) knowledge in preparing Mining Plan.

b. Officers retired/served for minimum 5 years in Central/ State Mining Departments/Organization/ Research Institutes/ universities/ Colleges will be considered if work in the respective areas.

c. Proficient in MS office, CAD, ArcGIS, Modelling Software, Data Processing Tools, Geological Modelling Tools.

B 2.4 Specific Educational Qualification and Experience for Each TAE

B 2.4.1 Technical Area Expert – Mining Engineer (ME):

a. Educational qualifications specific to functional area

i. A BE/ B. Tech/ B. Sc Engg. / AMIE / M. Tech Degree in Mining Engineering/ Opencast Mining/ Mining Machinery or equivalent granted by a university established or incorporated by or under a Central Act, A Provincial Act or a State Act including any institutions recognized by the University Grants Commission under Section 4 of the University Grants Commission Act, 1956 (3 of 1956) or any equivalent qualification granted by any university or institute outside India and recognized by Government of India

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Mining Plan/ Pre- Feasibility/ Feasibility Project Report preparation.

ii. Design of Mining Methods for OC/UG Coal, Metal/ Non-Metal Mines.

iii. Knowledge in broad range current and new UG/OC mining operations

iv. Emerging mining technologies and concepts.

v. Techno- Economic Feasibility for Coal, Metal and Non- Metal Minerals.

vi. Selection of Mining Equipment's and Machineries.

vii. Practical experience in risk management in Mine Design.

viii. Design and scheduling best practice tools and methodologies.

ix. Knowledge of Geology, GIS, Drill & Blast, mining principals and other related mining support services.

c. **Role and Responsibilities**

i. Prepare surface and underground plans and blueprints of a mining plans, use of survey data and risk assessment of mine.

ii. Prepare Mining Plan/ Pre- Feasibility/ Feasibility Project that describe results and processes of mining,

iii. Reconciliation of Prospecting data from economical mine plan, production plans reports.

iv. Use of mine planning software - Use specialized software to plan, design and model for mining operations

v. Planning equipment for mineral treatment; communicate and collaborate with engineering experts

vi. Generate weekly, monthly, quarterly or annual production plan.

B 2.4.2 Technical Area Expert – Mining Geologist (MGEO):

a. Educational qualifications specific to functional area

i. Master's (post-graduate) degree/ M. Tech in either subject- Geology/ Applied Geology from a UGC/AICTE recognized University/ Institution or equivalent.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Preparation of ore body modelling using Geological Prospecting data, its interpretation, mapping using SW like Minex, Datamine, Geosoft, Minesoft, Surpac, AutoCAD, etc.

ii. Ability to interpret 2D/3D seismic data and create geologic maps and models.

iii. Knowledge and experience of the technologies currently implemented for mining plan, GIS, Drilling, mining principals.

c. Role and Responsibilities

a. Performs scouting of Prospecting activities in the region, preparation of Prospecting activity plans and budget

b. Execution of drilling operations at prospective locations, Collection, evaluation and reporting on field samples and prepare activity logs.

c. Create accurate geology-based maps, lithologs, cross sections and geological models.

d. Directed, supervised and managed all work performed by field crews and drillers.

e. Entered and maintained sample information and Prospecting data in relevant database.

f. Interpreted and complied with all applicable governmental regulations and laws.

g. Evaluation of geological & mineable resources from national & international prospects.

h. Research on the feasibility of developing these mineral prospects by analysing, reviewing, and forecasting data for operational and business planning and preparation of the feasibility study report.

i. Study of available GSI, MECL and other Prospecting reports, compilation and correlation for assessing the likely potentiality of the mineral prospect.

B 2.4.3 Technical Area Expert – Remote Sensing & GIS (RS):

a. Educational qualifications specific to functional area

i. Master's (post-graduate) degree in Science/Technology or equivalent in either subject- Geology/ Applied Geology/ Geo-informatics from a UGC/AICTE recognized University/ Institution or equivalent.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Sound knowledge of GIS and Remote Sensing software's like ArcGIS, QGIS, Erdas etc.

ii. Experience on ArcGIS extensions like Spatial Analyst, Data Management tool, Overlay Analysis.

iii. Experience in GIS database management.

c. Role and Responsibilities

i. Remote Sensing, GIS, GPS.

ii. Digital photogrammetry.

iii. Excavation measurement to slope stability.

B 2.4.4 Technical Area Expert – Civil, Electrical & Mechanical (CEM):

a. Educational qualifications specific to functional area

i. BE/B. Tech/B.Sc. Engg. /AMIE/M Tech in Mechanical/Electrical/Civil Engineering from recognized University or Institute approved by AICTE

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Design of various structures for both open-pit and underground mines.

ii. Plan and design hydraulic systems and transportation structures and systems.

iii. Manage the construction, operation and maintenance of the work.

iv. Test soils and various other material to determine the requirement needed for the building of foundations and structures.

v. Assist in the design and drawing of complex electrical systems.

vi. Work extensively with electrical equipment such as circuits and transformers.

vii. Experience in planning and optimising of Plant and Machinery for mining plan.

c. Role and Responsibilities

i. Design and Layout of Civil Infrastructure Design (Township, Water Works Distribution, Domestic Effluent Plant).

ii. Coal Preparation and coal Handling Units (CHP) Design.

iii. Heavy Earth Moving Machinery Equipments (HEMM) Workshop Design.

iv. Mine Shafts Units, Mine Ventilation by Simulation Modelling.

v. Washery Design and Implementation of Modern Washability Methods.

vi. In-Pit Crushing and Conveying System (IPCCC) and ROPECON Technology Application.

vii. High Angle Belt Conveying System in both O/C & U/G Mines.

viii. Energy Efficiency Study (Electrical & Diesel Equipments) of Mines and International Bench Marking of the Mining Activities.

ix. Consultancy on “Energy Sensitive Organizational Structure".

x. All mine specific software development and IT enabled services.

xi. GPS enabled monitoring mechanism.

B 2.4.5 Technical Area Expert – Marketing & Finance (M&F):

a. Educational qualifications specific to functional area

i. CA/ ICWA or B. Tech with MBA.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Experience in establishing commercial viability of the project, Budgeting and financing.

ii. Identifies the existence of markets or long-term, contracts for the product; and decides whether or not the mine should be developed.

iii. Stripping costs where removal of overburden occurs for production, calculation of stripping adjustments.

iv. Determination of impairment charges.

c. Role and Responsibilities

i. Detailed Project Costing & Financial Structuring.

ii. Risk Analysis Study.

iii. Macro and Micro Analysis of Project Viability.

iv. Equipment's Depreciation and amortization.

v. Profitability Index Study.

B 2.4.6 Technical Area Expert – Socio-Economics (SE):

a. Educational qualifications specific to functional area

i. Master's (post graduate) degree in Social Welfare / Sociology/ Political Science/ Psychology/ Geography/ Anthropology/ Economics/Environmental Economics/Urban Planning/Regional Planning/Environmental Planning, Developmental Sciences

OR

Rural Development and Management – rural economics/ Economic Sociology/ Demographic Studies

OR

ii. MBA (Rural Management)

OR

iii. Any other social science related subject

or

iv. 2 years Post Graduate Diploma in Sociology from recognized Institution like Tata Institute of Social Sciences, Xavier Institute of Social Sciences, Ranchi/Xavier Institute of Management, Bhubaneswar/XLRI, Jamshedpur and other reputed institutes.

v. Desirable – Relevant trainings/ courses of 6 months duration and above.

vi. Experience specific to functional area must include

i. Conducting baseline socio-economic surveys through interviews/ questionnaire/focused group discussions/participatory rural appraisal (PRA)/rapid rural appraisal (RRA)

ii. Methodologies on extrapolation of census data to project an up-to-date status including selected ground validation of the same

iii. Conduct social needs assessment studies

iv. Evaluation of socio-economic status of both tribal and non-tribal areas

v. Demonstrated capacity to interact and develop rapport at community level will be an added advantage

vi. Conduct Rehabilitation and Resettlement (R & R) studies for people displaced due to developmental projects and development for R & R plan

vii. Assessment of social changes arising out of development projects

The following are the additional expectation from the expert:

- Understanding of policies, guidelines and the legislation related to R & R issues
- Social Impact Assessment of development projects in Rural/ Urban areas

B 2.4.7 Technical Area Expert – Environment, Health & Safety (EHS):

a. Educational qualifications specific to functional area

i. B. Tech/B. E/ M. Tech in Environmental Engineering, Civil, Geotechnical engineering or Engineering Geology or equivalent.

ii. Desirable – Diploma in (Industrial Safety) from premier institutions (like CLI, RLIs, NITIE, NITs, P. G. Diploma recognized by State Board of Technical Education).

b. Experience specific to functional area must include

i. Outstanding knowledge of EHS management systems and related software.

ii. Familiarity with OHSAS standards and regulations.

iii. Planning of Long-term Sustainability initiatives (Natural capital, Human capital).

iv. Specifications for Specific Dust emission, water consumption, energy consumption, Solid waste utilization and Green belt development.

v. Facilitate Engineering & Project department by implementing various environment improvement projects.

vi. Should have experience as Safety Officer preferably in Mining Industry.

c. Role and Responsibilities

i. Prepares and assist in compliance's, general risk assessments and other safety assessments to support Health, Safety and Environmental management

ii. Responsible for Industrial Hygiene, Occupational Health, Waste Management and business process enhancements

iii. Maintain EHS configurations and Maintain operational procedures around supported environments

iv. Write, implement, and manage HSE Programs, Policies and Procedures

v. Develop Safe Operating Procedure (SOP's) and Job Hazard Analysis

B 2.4.8 Technical Area Expert - Geotechnical (GT):

a. Educational qualifications specific to functional area

i. B. Tech/B. E/ M. Tech in Civil, Rock/ Soil Mechanics and Geotechnical engineering or Engineering Geology or equivalent.

ii. Desirable – Relevant trainings/ courses of 6 months duration and above.

b. Experience specific to functional area must include

i. Rock strength tests like Triaxial test, compressive strength test, Unified compressive strength etc.

ii. Rock-quality designation (RQD) measured as a percentage of the drill core in lengths of 10 cm or more.

iii. Investigation, analysis and modelling of geotechnical issues.

iv. Geotechnical characterization of borehole core and domain modelling

v. Impact testing, Scratch testing etc.

vi. Work closely with the Geology department to optimize safe, timely drill-hole results.

c. Role and Responsibilities

i. Slope design for open pits.

ii. Headings, roadways and drifts for underground operations.

iii. Panel and longwall design.

iv. Tailing dam design.

v. Special constructions.

vi. Geological Structure using precision measuring and testing instruments.

B 3.0 Team Member (TM)

A provision of 'Team Member' has been included in the Scheme to provide opportunity to

a. Experienced professionals in their own fields but lacking experience to enter the profession.
b. Existing experts to expand the field of association.
c. Persons who have completed 5 years after obtaining eligibility qualification but do not meet the experience requirements of TAE or PC.

d. This provision is available only for in-house experts.

B 3.1 Procedure to be followed to work as TM

As the concept of TM has been introduced to enable experts to gain necessary experience, NABET should be informed after joining the agency / organisation /ACO/ AO.

a. The person to be proposed as a TM should meet the educational requirements of the Scheme for PC or TAE, as applicable.
b. The TM has to get involved in the various functions of the PC and or TAE for obtaining the relevant experience.
c. TM may be attached with an PC and/or a TAE. The name of the TM(s) must appear in the list of experts associated in the report.
d. Information for associating a TM is to be submitted to NABET in a prescribed Format *vide* ***Annexure 14*** with following details:
    i. Declaration by the CEO/ authorized signatory of the AO/ ACO confirming the involvement of the team member in the project giving name of approved PC/ TAE with whom s/he is attached and the duration of involvement.
    ii. Specific nature of work in which the TM will be involved with the PC or TAE.
e. List of the persons being used as TM must accompany the application giving the name of the PC/TAE with whom the TM is attached.

B 3.2 Expected functions of team member

The team member (TM) is expected to be involved both in field work as well as in the discussions amongst the PC and the TAEs. Since s/he is expected to be knowledgeable in area of expertise, emphasis should be given to acquaint her/him on aspects, developing the management plans and finally in report writing for her/his part of association in the study.

Appendix C

QUALITY MANAGEMENT SYSTEM

Prospecting/ Exploration Agency and Mining Plan Preparing Agencies are advised to establish and maintain a Quality Management System (QMS) for their organization as the same offers the following benefits;

- Creates a culture of doing things right, the very first time.
- Inculcates the culture of "**saying, what we do and doing, what we say**"
- Increases system orientation and reduces person specific dependence.
- Encourages uniform knowledge sharing and develops skilled work force.
- Helps develop team spirit
- Reduces duplicate work and minimizes wastages.
- Improves quality of work and brand image.

QMS should be based on ISO 9001 while addressing specific requirements of NABET Scheme. Please note that if an organization is already ISO 9001 certified, guidelines B1 to B4 and B10 are normally addressed (which may please be checked). It is then required to develop procedures for the NABET specific items i.e., B4 to B9 and integrate them with the system meaning that these should also come under the ambit of auditing, document control, management review etc.

If an organization has not been initiated into the system-oriented approach of working which is documented, audited and reviewed, it needs to acquaint itself of ISO 9001 requirements. Such organizations may initially take the help of a consultant but MUST NOT OUTSOURCE THE WORK OF ESTABLISHING THE QMS to him to meet the requirements of the NABET Scheme. Such an approach will be counterproductive as the system so developed is less likely to be owned by the working team and would remain a standalone document. THE BEST WAY IS TO GET THE GUIDANCE OF A CONSULTANT BUT LET THE WORKING TEAM ESTABLISH THE SYSTEM.

A QMS is supported by a 3-tier documentation system

- The Quality Management System manual
- Procedures
- Work instructions/forms/formats/checklists to implement the procedures

Some organizations have included 'Reference materials' to their documentation system. Further explanation is given in B 2 below.

Guidelines given in ***Appendix C*** for various elements of the QMS and the explanation thereof are given below –

Guidelines for developing the QMS –

C1. QUALITY POLICY shall be defined to address at least following:

a. Be appropriate to the Organization's purpose & context, and support its strategic direction
b. Includes commitment for, continual improvement and satisfy applicable requirements
c. Provide a framework for setting objectives and a review mechanism
d. Be communicated and understood within the Organization
e. Focus on customer satisfaction

C2. CONTROL OF DOCUMENTED INFORMATION SHALL GIVE PROCEDURES FOR:

a. Uniquely identifying documents and records
b. Approving documents prior to issue
c. Distribution, access, retrieval and use
d. Control of changes
e. Reviewing and updating of documents, as required
f. Retention and Disposition
g. Ensuring quick availability of relevant revision of the document
h. Storage, protection and retrieval of documented information and handling of outdated/superseded documents

C3. PERFORMANCE EVALUATION AND REVIEW SHALL GIVE PROCEDURES FOR:

a. Fixing Key Performance Indicators (KPI) of experts involved and annual appraisal of the same
b. Assessing / ensuring the quality of respective Geological Report/ Mining plan / GR & Mining Plan review reports prepared
c. Periodic and systematic audit, both internal and external and follow up action for closure of Non-conformances (NCs)/ observations.
d. Management review giving periodicity and issues to be taken up including feedback from project proponent on quality of respective Geological/ Mining plan / GR & Mining Plan review reports prepared and necessary follow up action.

C4. ACTIONS TAKEN TO ADDRESS NON- CONFORMANCES– SHALL GIVE PROCEDURES FOR:

a. Analysing the NCs of internal audits as well as external audits including NABET to identify the causes and the actions to be taken,
b. Identifying resources and other inputs required for such actions,
c. Fixing the time frame and the responsibility for the actions,
d. Ensuring the completion of the actions to be taken,
e. Review the effectiveness of corrective actions taken
f. Review risks, opportunities and overall QMS if required

C5. LEADERSHIP AND PLANNING SUPPORT & OPERATION- SHALL GIVE PROCEDURES FOR PLANNING, OPERATIONS & SUPPORT FOR DEFINED QMS INCLUDING ROLE AND ACCOUNTABILITY OF TOP MANAGEMENT.

a. Accountability for Effective design and implementation of QMS is defined
b. Use of process approach and risk-based thinking is evident
c. System for effective communication is defined and implemented
d. Risk Management process is established, that is linked to organizations context
e. Interested parties for organization's QMS are identified and their inputs are captured to improve QMS
f. System for change management is defined and implemented
g. Shall determine, provide and maintain the infrastructure necessary for its operation and processes.
h. Shall plan implement and control the processes needed to meet the requirements as per defined QMS

C6. COMPETENCE MANAGEMENT OF STAFF, EXPERTS AND OTHER PERSONS RELATED TO SCOPE OF QMS– SHALL GIVE PROCEDURES FOR:

a. Define and provide the necessary persons needed for effective implementation of QMS
b. Define the necessary competence (Education, experience and skills) for staff, experts and other persons whether in house or contractual, impacting the QMS of the organization,
c. Assessing the work done by the prospective experts prior to their retention
d. Framing the "terms of reference" for retention of the expert, including preparation of the report for her/his portion of the work,
e. Assessing performance of the work done by the experts for the organization,
f. Wherever applicable, take appropriate actions to acquire necessary competence and evaluate the effectiveness of actions taken
g. Maintain appropriate documented information as evidence of competence.

C7. COLLECTION AND MEASUREMENT OF PRIMARY DATA -

'Primary' data will cover all forms of data collected through the field work, for assessing the project area. The procedures for collecting primary data should include:

a. Site visits by the respective Geological Report/ Mining Plan Preparing team to familiarize about site conditions to plan for the respective Geological Report/ Mining Plan selecting the number and location of monitoring stations and the type of sampling and parameters to be monitored
b. Interpretation of data including statistical analysis to arrive at meaningful information
c. Specifying as appropriate for the scope of Geological Report/ Mining Plan methodologies to be followed and interpretation of the same.

C8. COLLATION, SYNTHESIS AND INTERPRETATION OF SECONDARY DATA -

Authenticity, credibility, appropriateness and relevance of the secondary data are the cornerstones of a good Geological Report/ Mining Plan. Secondary data shall be used to supplement the primary data and under no circumstances this shall be used as a replacement of primary data. This procedure should include information on:

a. When secondary data would be resorted to
b. Relevant secondary data to be collected as appropriate for study requirements
c. Sources of secondary data ensuring their reliability and age
d. Validation of important secondary data by cross verification at the site or from other sources
e. Ensuring the brevity of the data (eliminating irrelevant information)

It is a good practice to give reference to the source when secondary data is used.

C9. CONTROL OF EXTERNALLY PROVIDED PROCESS, PRODUCTS AND SERVICES

Organization shall give procedure to apply necessary controls for the externally provided processes, products and services.

The manual should mention procedures for:

a. Defining the conditions when outsourcing would be resorted to
b. Assessing the capability of the agency to take up the work to be outsourced
c. Drawing up the terms of reference for the outsourced work
d. Identifying steps to be taken to ensure the quality of the outsourced work
e. Timely review, monitor and control on outsourced services as per defined QMS

C10. LABORATORY WORK FOR GEOLOGICAL REPORT/ MINING PLAN DATA -SHOULD GIVE PROCEDURES FOR:

a. Assessing a laboratory for its capability to analyze the parameters required for collection of surface and sub surface Mine Planning data and studies
b. Identifying the scope of work to be assigned to the lab and those to be done by the Geological Report/ Mining Plan Consultant Organization.
c. Collection, preservation and transportation of samples from site to the laboratory
d. Quality assurance by the team of the primary data collection work including supervision at site
e. Type of records to be maintained by the laboratory and the team on the baseline data collection work

C11. CUSTOMER SATISFACTION & COMPLAINTS– SHALL GIVE PROCEDURES FOR

a. Monitor customers perceptions of the degree to which their needs and expectations are fulfilled.
b. Informing the clients about the provision of complaints
c. Accepting complaints

d. Handling and disposal (including authority and responsibility) of the same within reasonable time
e. Maintaining records of complaints
f. Ensuring implementation of correction and corrective actions

APPENDIX -D

Fees Structure

S.No.	Aspect	Fees
1	Application Fee	Not exceeding 10 proposed candidates[1] –Rs. 30,000/ Not exceeding 15 proposed candidates – Rs. 40,000/ Not exceeding 25 proposed candidates – Rs. 50,000/ More than 25 proposed candidates – Rs. 60,000
2	Stage II (technical review of documents) by assessors	Up to 10 candidates[2] – 2 person days 11 to 30 candidates – 3 person days 31 to 45 candidates – 4 person days 46 and above candidates – 5 person days
3	Stage III (office assessment)	IA Up to 10 candidates[3] – 2x2 person days 11 to 30 candidates – 2x3 person days 31 to 45 above – 2x4 person days 46 and above – As appropriate SA may be done 1x2 days for any number of candidates RA would have 1x2 additional person days to check compliance to conditions of accreditation & QMS
4	Analysis of office assessment and preparation of the final assessment report by assessor	Up to 30 candidates[3] – 1x1.5 person days More than 30 candidates – 2x1.5 person days
5	**Annual fee includes accreditation and administrative costs.**	
	Annual fee	Rs. 100,000/
6	Supplementary assessment for TAEs and expansion of scope	QCI/NABET – (up to 6 candidates) • *Document assessment – ½ person day up to 6 candidates • Interaction and report making – 2 x ½ person days up to 6 candidates At AO/ACO's premises – (7 -12 candidates) • *Doc. assessment :7 – 12 candidates – 1-person day 13 - 25 candidates – 2 person days • Interaction and report making – 2 x 1 person days 7 to 12 candidates * applicable for cases of expansion of scope
7	QMS implementation assessment	2 x ½ person days
8	Request for review of decision/ appeal by AO/ACO to NABET	25,000/-
Travel and stay of assessors – at actual		

Note:

1. Applicable tax/GST payable by the organization
2. Per Person per day charges are Rs. 18,000/- at the present. Numbers of days for assessment are estimated based on the number of candidates to be interviewed, size of the organization, documents/laboratory to be seen etc. QCI/NABET reserves the right to revise the person day rate, if deemed necessary.
3. Fees charged towards accreditation for section (5 above) partially cover the costs of operating the Scheme.
4. 'Candidates' mean personnel proposed/assessed as Project Coordinator (PC), TAEs and team members
    - Candidate[1] - refers to all candidates proposed as Project Coordinator (PC), TAEs and team members in application
    - Candidate[2] - refers to all candidates as a part of application in Stage I & II
    - Candidate[3] - refers to all candidates assessed during office assessment
5. Economy class air fare/organization's guesthouse or Hotel (boarding and lodging, equivalent to 3-star facility), local travel by AC car/ taxis are paid at actuals by the applicant to NABET. The consultant organization may also make the ticketing & other arrangements as per the requirements.
6. The annual fee for the first year is to be sent only after the receipt of confirmation from NABET of the applicant having been approved for accreditation. Certificate is sent after receipt of full fees and expenses at NABET.
7. Continuation of accreditation after SA and re-accreditation are given only on payment of all dues to NABET.
8. Accrediting Agency (QCI- NABET) may enhance the fee by 7% depending upon the market scenario.
9. The fees paid are not refundable.

Appendix E

Process for Initial Accreditation, Surveillance Assessment and Re-Accreditation

E 1.0 ACCREDITATION CYCLE

In a 3 years cycle of accreditation 3 types of assessments are carried out. These are:

Initial Accreditation (IA): In the IA, the potential of the applicant organization is assessed and based on that accreditation is granted. On successful completion of the initial assessment, an applicant organization is given accreditation for 3 years, subject to a surveillance assessment after 18 months. Details of IA are furnished below.

Surveillance Assessment (SA): SA is to assess performance after IA for continuation of accreditation. The objective is to judge to what extent the potential has been fulfilled i.e. its performance along with compliance to the conditions of accreditation. SA falls due 18 months after IA. Details of SA are furnished below.

Re-accreditation (RA): Following the principle of 'continual improvement', in RA the stress is on improvement achieved by the ACO during the period of accreditation. Since, the ultimate objective of the Scheme is to prepare credible Reports, RA accords progressively higher weightage to the same. RA comes 18 months after SA i.e., on completion of 3 years after IA. Details of RA are furnished below.

E 2.0 ASSESSMENT PROCESS

All the 3 types of accreditation mentioned above have the following 3 stages;

i. **Stage I assessment**: scrutiny for completeness of applications and supporting documents by NABET secretariat
ii. **Stage II assessment**: technical review of the documents is done by NABET assessor called the principal assessor (PA).
iii. **Stage III assessment**: the office assessment is jointly conducted by PA and a co-assessor (CA) at the premises of the applicant.

These are explained in detail in following sections:

E 2.1 STAGE I ASSESSMENT: SCRUTINY FOR COMPLETENESS OF APPLICATIONS AND SUPPORT DOCUMENTS BY NABET SECRETARIAT

Applications submitted by an Applicant Organization (AO) must be complete in all respects including the support documents as mentioned in the checklist in ***Annexure 11*** of the Scheme. The main points to be kept in mind by the AO/ACOs are -

a. Ensure that proposed candidates meet the requirements of the Scheme both in respect of qualification and experience for all Project Coordinator, TAEs, TMs.

b. An expert may be proposed both as a Project Coordinator and TAE, provided s/he meets this Scheme's requirements.
c. Any organization to be accredited must have one approved in-house PROJECT COORDINATOR, one in-house TAE as per the APA & MPPA scheme requirement. The other TAE may be inhouse or empanelled. The organisation must cover remaining Technical Areas (TAs).
d. CVs of experts must be submitted in Formats given in ***Annexure 5***, as applicable. AOs/ACO are advised to provide specific experience separately for each functional/ technical area. An incomplete CV can delay the processing of the application or may also result in non-approval of candidate.
e. Empanelled candidates must submit MoU, Declaration **(*Annexure 12*)**, and NOC, where applicable, as per requirements of the Scheme
f. Application must include proposal for eligible candidates to cover functional/ technical areas as per requirements of the Scheme.
g. The QMS should address the procedures mentioned in ***Appendix C*** of this Scheme. The application must be accompanied by the QMS Manual of the organization.
h. The consultant organization must have an arrangement with a Government recognised/NABL accredited/ CSIR lab/ Institution lab/University lab for the Coal core analysis/ assay of mineral and ore. It can be an in-house or external laboratory. For NABL accredited laboratories, the certificate and scope of accreditation and for other laboratories submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.
i. In case of applications from Universities and Research Institutes, their in-house laboratory may be considered. Such laboratories should be equipped with necessary equipment and instruments to carry out analyses of parameters required and have proper systems and staff for the same. These are visited by NABET assessors and based on their report a decision is taken by the accreditation committee.
j. For external laboratory, a copy of the MoU between the AO/ACO and the laboratory must be submitted with the application for accreditation indicating clearly the duration and scope along with other relevant details (see section E 7.0 of ***Appendix E***).
k. Candidates seeking approval as Project Coordinator, TAE and TM based on her/his experience must submit relevant documents in support as specified in Scheme.
l. Check lists of documents to be submitted with the application are given in ***Annexure 1, 2*** *and* ***3*** for IA, SA and RA respectively and ***Annexure - 11****.*

E 2.2 Stage II – Technical review of documents by NABET assessor

Once the application is checked for its completeness by the NABET secretariat, the technical contents of the documents are assessed by the principal assessor for conformity with the Scheme. After the evaluation, NABET informs the AO of the non- conformances (NC) and/or observations, if any, in the specific format. The closure actions submitted by the AO/ACO are assessed for completeness by the principal assessor. Candidates not fulfilling the requirements of Scheme in Stage II in terms of qualification and experience are not eligible for Stage III assessment.

For NABET to proceed further to stage III assessment, the following must necessarily be available in the application:

a. Eligible in-house and empanelled Project coordinator (PC).
b. Proposed TAEs must meet the qualification and experience requirements the Scheme.
c. Experience details of all proposed candidates as per prescribed formats.
d. Completed QMS manual and laboratory details as per requirements of Scheme

Note:

An assessment fee is charged for the documentation review, as per details in ***Appendix D.*** In case the verification of the closure action proposed/submitted needs assessment of more than two proposed TAEs or one proposed Project Coordinator, additional fee is applicable.

E 2.3 Office assessment by NABET assessors

a. After the successful closure of NCs and observations as mentioned above by the AO, NABET undertakes at least one full office assessment by a team of two or more Assessors. This includes interactions with the experts, verification of compliance to systems and procedures submitted with the application, field investigation practices, records, laboratory and office/support structure and the reports prepared by the AO
b. Members of AC, TC, new assessors and NABET secretariat may also visit AO/ACO premises as observers, at NABET's cost, in case need arises.
c. During the Stage III assessment all in-house and empanelled Project coordinator, TAEs and team members proposed and fulfilling the requirements of the Scheme, interact with NABET assessors. Interaction may also become necessary with laboratory staff and personnel associated with QMS.
d. NABET informs the AO/ACO, at least 10 days in advance, the date of the office assessment. Sometimes, office assessment may have to be conducted with a notice of less than 10 days, if it is feasible for AO/ACO.
e. To keep the schedule of assessments, it is not possible to accept any postponement of assessment dates unless it clashes with public hearing or some extra-ordinary situation at the applicants' end which cannot be avoided.
f. If any candidate proposed for Project Coordinator and/or TAE is not available during the office assessment without formal intimation to NABET, his/her name respectively are not considered for approval. If leave of absence is sought from NABET in advance, such candidates may appear for interaction at a later date to be communicated by NABET.
g. During the interaction with experts, relevant documentary evidences of educational qualifications and experience are examined by the assessors. Hence, such documents should be kept readily available. The work experience may not be considered, if the candidates are unable to produce documentary evidence in support of their claim of experience.

h. In case the organization has offices at multiple locations, it must be clearly mentioned in the application giving address, location, services, staff etc. A partial assessment of a few selected locations may be conducted by NABET. The choice of locations is at the discretion of the NABET assessment team.
i. A NABET assessors may inspect the laboratory or an on-going base line data collection work, if required.
j. During the office assessment many documentary evidences are put up by the applicant in original. Also, certain clarifications/additional information are sought by the assessors from the applicant. All such documents in soft format (scanned copies, if applicable) must be submitted to NABET by the applicant within one week of the stage III assessment.
k. Non-conformance and observations may be raised by the assessors after the assessment or later, which are communicated to the AO/ACO by NABET. Closure actions on such NCs/Obs. must be sent to NABET by the AO within two weeks of the communication.
On receipt of closure of NCs/Obs. from the AO and clarifications/additional information from the assessors, if any, the case is put up to the accreditation committee for its review and decision.

E 3.0 Assessment process - Initial Accreditation (IA)

This is the first step of approval in the accreditation cycle. There are five key requirements for accreditation. The assessment criteria for these are elaborated in section C 3.1 to 3.5.

E 3.1. Human Resource

The candidates meeting the qualification and experience requirements specified in the Scheme are assessed by the principal and co-assessors broadly on following aspects -

a. Project Coordinators (Prospecting & Mining Plan)– must have
i. Conceptual understanding of project requirements, process and outcome.
ii. Knowledge of the applicable Acts, Rules and Regulations governing the project.
iii. Domain knowledge
iv. Understanding of the legislations and rules/regulations with respect

b. Technical area experts (Prospecting & Mining Plan)– must have:
i. Knowledge of the functional/ technical area/s as applicable
ii. Ability to identify and quantify impacts, where applicable
iii. Ability to suggest/vet mitigation measures and clarity of role as TAE.
iv. The capability of identifying the need of the project
v. Understanding of the legislations and rules/regulations with respect to the technical areas.

c. Team members
They are met by the assessors during office assessment to assess their suitability for the role proposed, but not given any marks.

Note: *Documentary evidences in support of work experience claimed would help assessment process.*

E 3.2 Field investigations and laboratory systems

To ensure data integrity, this section covers assessment of the following:

a. Collection, quality assurance and interpretation of prospecting.
b. Collation, synthesis and interpretation of secondary data if any.

E 3.2.1 Field investigation

Assessment for this section covers the following for quality assurance:

i. Methodology for collection of data and involvement of PCs and TAEs in selection of sampling locations, type of samples, parameters to be tested quality assurance of data collected, preservation and transportation of samples and interpretation of the data for use in Geological Report/ Mining Plan preparation.

E 3.2.2 Collation, synthesis and interpretation of secondary data:

i. Methodology for identification of sources,
ii. Ground validation and
iii. Interpretation of data

E 3.3 QUALITY MANAGEMENT SYSTEM (QMS)

Since the use of QMS in developing Geological Reports/ Mining Plan report is a comparatively recent approach, the emphasis is on the content and coverage of the systems and procedures developed and understanding of the same in the organization.

Assessment includes verifying whether all the requirements of ***Appendix C*** of the Scheme have been covered by documented procedures backed by forms/ formats/ check lists for implementation of the same; the quality of the content of the procedures developed; understanding of the system including organizational awareness of the QMS and action plan/status of implementation.

E 3.4 COVERAGE AND QUALITY OF GEOLOGICAL REPORTS: - ***(Applicable for Prospecting Agencies only)–***

The Geological Reports are examined for coverage and quality of data generated in the reports prepared by an applicant organization prior to getting accredited.

The foundation of any good resource estimate is based on reliable data, whether in the form of 3D points that will form a topographic survey, down hole surveys, collar data, sampling and analytical

data, geological and geophysical logging data coverage in the Geological Report (GR). The assessment, interalia, covers all the aspects involved in preparation.

i. Quality assurance (QA) protocols should be followed for all data types, not just sampling and analytical data.
ii. Duly signed declaration of experts' involvement in Geological Reports (GR) preparation

For a fresh applicant organization which has not carried out any Geological Reports preparation, this section may not be applicable. For details guideline ***refer Appendix-F***

E 3.4.1 COVERAGE AND QUALITY OF MINING PLAN AND MINE CLOSURE PLAN: – ***(For Mining Plan Agency only)***

The Mining Plans are examined for assessment of the quality of Mining Plan prepared by an applicant organization prior to getting accredited as a baseline reference.

The mining plan becomes vital in that it must enable optimal mining aspects covered regarding the project. The Mining Plan shall cover prescription for different phases of life of the mine as stage plan. The stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life), Environmental management system and practices followed. A quality mining plan must follow the format prescribed in the guideline.

For a fresh applicant organization which has not carried out any Mining Plan preparation, this section may not be applicable. For details guideline refer ***Appendix G.***

E 3.5 ORGANIZATIONAL COMMITMENT –

The following requirements aim to ensure the commitment from the accredited consultants towards continual improvement

a. Capacity building

i. System of assessing performance of experts,
ii. Identification of training needs and
iii. Providing necessary training for enhancement of skill and competence to deliver quality reports.

b. Commitments towards quality of Reports

i. Preparation of clear activity chart (with milestones) from start to completion for the projects;
ii. Meeting/s with project proponent and feasibility report/detailed project report (FR/DPR) consultants to ensure better coordination for execution of the project and recording the same;
iii. System of learning from the comments of the meetings to improve the quality of reports.

c. Facilities –

i. Use of appropriate tools and software for impact assessment
ii. Provision of computing and internet and video conferencing facilities,
iii. Library, documentation centre

E 3.6 Weightage of Marks

For weightage of marks for various aspects of assessment, please refer to:

a) **Prospecting/ Exploration Agencies (APA):** Table1 of section 7.1

b) **Mining Plan Preparing Agencies (MPPA)**: Table 2 of section 7.1

NOTE:

- An AO must score a minimum of 40% in each aspect of assessment (S. No 1 to 6 of the table) for being considered for accreditation.
- For a candidate to get approved as PC & TAE, s/he must score minimum of 40%.
- For team member only approval will be granted.

E 3.7 Category of accreditation for organization and approval of experts

Accreditation for organizations and approval of experts is granted under the following two categories of the Scheme:

Project coordinators (PC) and Technical area experts (TAE) for Prospecting/ Mining Agency	
Category A Those scoring 60% or above overall in stage III assessment	**Category B** Those scoring 40% & above but less than 60% overall in stage III assessment

E 3.8 Conditions to be fulfilled for initial accreditation

a. In case the short fall concerns the QMS the AO is given 15 days' time to improve the QMS to meet the requirements of the Scheme
b. NABET conducts one a day assessment at the premises of the AO within 3 months to find out level of understanding of the QMS in the organization and the action plan for implementation.

E 3.9 Submission of complete application

An AO is required to submit a complete application meeting requirement of the Scheme. In case the application is incomplete, the AO is informed by NABET of the aspects in which the same is incomplete. The AO is required to submit all details to make the application complete as early as possible for further processing of application. If the application remains incomplete even after six months from the date of initial application, it is treated as closed and the AO needs to submit a fresh application with requisite fees, should it wish to be considered for accreditation under the Scheme.

E 3.10 Self-assessment checklist

It is important that the application submitted by an applicant organization is complete in all respects, which would facilitate quick processing of the same. Also, it helps the organization in facing office assessment by NABET assessors if it is well prepared for the same. To help the consultant organizations on the above, self-assessment formats have been developed both for completeness of application and for preparedness for assessment by NABET for IA, SA and RA and are given in ***Annexure 11*.**

E 4.0 Assessment process - surveillance assessment

Surveillance assessment (SA) falls due after 18 months of initial accreditation (which is effective from the date of office assessment for initial accreditation). Application for SA in prescribed format, accessible from QCI/NABET website, is required to be submitted to NABET at least 3 months before the due date i.e. 15 months after IA. The application must be complete with all relevant documents which include a list of Reports prepared after IA, list of experts involved in the Report's preparation, copy of the QMS manual, details about laboratory arrangements, etc. A checklist of the documents to be submitted is given at ***Annexure 2***.

SA cannot proceed in the following cases:

i. Non-submission of satisfactory response to NC/ Obs. of IA/ RA
ii. Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University labs have not been used.
iii. Non-compliance to conditions of accreditation and non-payment of pending dues
iv. Non-fulfilment of requirements of technical areas
v. Non-fulfilment of requirements of PC and TAEs

Note:

i. In the event, an approved expert has left the ACO three months prior to the date of application for SA, an ACO can put up a proposal for approval of an alternative eligible In-house/emp.
ii. In event of resignation of any of the approved PC/TAE, earlier than 3 months prior to the date of application of SA, replacement to be proposed by the ACO within defined timeline.

There are five key requirements in SA for continuation of accreditation. These are detailed in C 4.1 to C 4.5.

E 4.1 Performance of approved experts

The PC and TAEs experts approved in the SA are assessed by the principal and co-assessors on the following aspects -

a. Project Coordinators (Prospecting & Mining Plan) must have**:**

i. Site familiarity through visit to the site to plan for Geological Reports/ Mining plan, as applicable.

ii. Completeness of impact assessment covering all aspects in respect of physical, ecological, social and risk related issues.
iii. Completeness of EMP addressing all impacts along with budgetary projections and monitoring plan

b. Technical area experts (Prospecting & Mining Plan) must have**:**

i. Visited the site for familiarization and involvement in selection of sampling locations, collection and supervision of sampling for primary data
ii. Identified and quantified impacts, where applicable
iii. Made contribution to respective Reports preparation.

Note:

a. Documentary evidences in support of work carried out during period under SA must be available for PC/ TAEs
b. In case an approved expert was not involved in any Report preparation for the period after IA and up to SA, s/he may be allowed to 'continue by default' for functional/ technical area as per recommendation of Assessors.

E 4.2 FIELD INVESTIGATIONS AND LABORATORY SYSTEMS

Collection of quality data is of crucial importance for preparing Geological Reports/ Mining Plan. Primary data are collected for:

Geological Reports	Mining Plan
• Prospecting coverage • Geological Mapping and Surveying data • Remote sensing, airborne geophysical survey • Geochemical Survey • Drilling data - Borehole density, Coring/non-coring drilling. • Geophysical logging. • Sampling - Borehole core sampling, Analysis of coal core or Lignite • Petrographic & Mineralogical studies • RQD & Physico-Mechanical Test. • Geostatistical analysis • Hydrogeological Studies • Data Interpretation and Reserve Estimation	• Prospecting coverage • Geology: Geology of area; detailed/general Prospecting • Geotechnical and ground & surface waters studies. • Methods of mining, mining plan, detail of manpower • Mining working plans and Mine Closure plan • Details of equipment list • Details about Infrastructure, construction, etc • Processing - industrial scale level investigations • Specific end-use grades of reserves • Costing - Capital costs with break up • Marketing and Financial analysis • Socio- economic aspects • Environmental considerations -

• Geological Modelling	

A good understanding of the project based on visit to the project site by approved PC/TAE is of utmost importance for developing the scope of study and for primary data collection.

E 4.3 Quality management system

This includes compliance to the various procedures developed during the initial accreditation process in the Quality manual of the ACO.

Address various elements of QMS as required under The NABET Scheme ***Appendix C*.**

The ACO is also expected to demonstrate corrective action and preventive action taken for deficiencies pointed out in QMS during initial accreditation with relevant documents, if applicable.

E 4.4 Coverage and Quality of Geological Report (GR) prepared by the ACO (APA) – ***(Applicable for Prospecting Agencies only)***

In the SA assessment Geological Reports (GR) are examined for coverage and quality of data generated in the reports prepared by an applicant organization prior to getting accredited.

The foundation of any good resource estimate is based on reliable data, whether in the form of 3D points that will form a topographic survey, down hole surveys, collar data, sampling and analytical data, geological and geophysical logging data coverage in the Geological Report (GR). The assessment, inter-alia, covers all the aspects involved in preparation.

a. Quality assurance (QA) protocols should be followed for all data types, not just sampling and analytical data.
b. Duly signed declaration of experts' involvement in Geological Reports (GR) preparation

For details guideline ***refer Appendix-F***

E 4.4.1 Coverage and Quality of Mining Plan prepared by ACO (MPPA): – ***(For Mining Plan Agency only)***

In SA assessment the Mining Plans are examined for assessment of the quality of Mining Plan prepared by an applicant organization prior to getting accredited as a baseline reference.

The mining plan becomes vital in that it must enable optimal mining aspects covered regarding the project. The Mining Plan shall cover prescription for different phases of life of the mine as stage plan. The stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life), Environmental management system and practices followed. A quality mining plan must follow the format prescribed in the guideline. *For details guideline* ***refer Appendix G***

E 4.5 ORGANIZATIONAL COMMITMENT

Assessment criteria for this are similar to that in IA namely capacity building for PC / TAEs/ TMs, commitments towards quality of Reports and facilities provided, with stress on implementation since being accredited.

E 4.6 COMPLIANCE TO CONDITIONS OF ACCREDITATION (SURVEILLANCE ASSESSMENT OR SA)

Assessment to cover the conditions of accreditation mentioned in the NABET's letter of IA. It broadly includes timely information and replacement by the ACO of approved experts leaving the organization; utilizing only approved experts of appropriate area for preparing Geological Reports; providing statement countersigned by PC and TAEs involved in preparation of Geological Reports in prescribed Format at the beginning of the Geological Reports and after timely payment of all dues to NABET.

For weightage of marks for various aspects of assessment, please refer to:

a. **Prospecting/ Exploration Agencies (APA):** Table1 of section 7.1
b. **Mining Plan Preparing Agencies (MPPA):** Table 2 of section 7.1

Note:

a. An ACO must score minimum 40% in each of the 6 aspects as mentioned above for continuation of the accreditation/approval status (for experts) in the same category.
b. In case the ACO scores less than 40% marks in any aspect it may be given an opportunity of personal hearing by the AC to explain its case. The accreditation may or may not be continued as per decision of AC.
c. If an ACO scores less than 40% marks in any of the above aspect/s, the accreditation cannot be continued.
d. In case of shortfalls of marks i.e. below 40%, the following provisions apply –
    - considering that QMS is a new concept in Geological reports profession, if the ACO scores less than 40% in QMS, it is given 15 days' time to address the shortfalls and submit the revised QMS to NABET meeting the requirements of the Scheme. Awareness of the revised QMS and implementation status is assessed by NABET assessors at the premises of the ACO. The ACO needs to score 40% or more in this assessment to retain the accreditation granted to it.
    - if the ACO scores less than 40% marks in any aspect other than QMS, it may be given an opportunity of personal hearing by the AC to explain its case before the final decision on the case.

E 4.7 Conditions to be fulfilled for continuation of accreditation -

a. In case a major non-compliance/discrepancy/mis-representation of facts is observed in Geological Reports prepared by ACO during period under surveillance, the accreditation may not be continued. However, the ACO may be given an opportunity of personal hearing before final decision is taken by accreditation committee.
b. The ACO is informed of the scores of Stage III assessment for the organization as well as individuals with comments on areas of improvements, if any. In case an ACO is not approved and wishes to re-apply or upgrade from category B to category A, it may do so after a gap of 3 months and on ensuring that the shortcomings mentioned have been adequately addressed. The organization is subsequently assessed as per SA norms. Fees as per SA are applicable.

E 4.8 Category of accreditation of organization and approval of experts

Accreditation for organizations and approval of experts is granted in following two categories under the Scheme:

Project coordinators (PC) and Technical area experts (TAE) for Prospecting/ Mining Agency	
Category A	**Category B**
Those having category A in initial accreditation and scoring 50% or above overall, in stage III assessment Those having category B in initial accreditation and scoring 60% or above overall in stage III assessment	Those having category B in Initial accreditation and scoring less than 60% overall in stage III assessment

E 4.9 Scoring requirements for experts/candidates -

i. If a candidate/expert assessed for PC or TAE score less than 40% in stage III assessment, s/he will not be approved under the Scheme.
ii. If an approved expert assessed in SA scores 40% and above but less than 50%, s/he will be issued an 'Alert'. If s/he was approved for category A in IA, her/his approval category may be revised to category B, depending on the seriousness in shortfall in performance.
iii. If an approved expert assessed in SA gets 50% or more, her/his approval gets continued in the same category as in IA. If s/he scores 60% or more and was earlier approved as cat B, s/he is up-graded to cat A.
iv. An expert approved in category B seeking up-gradation to category A may be proposed by the ACO for the same either in the next assessment (RA) or after a gap of 3 months from the

date of last assessment provided s/he meets the qualifications and experience requirements for cat. A for an PC/TAE, as applicable.

v. To meet the requirements to upgrade from category B to A, the expert may work as team member under an approved expert of category A. Necessary documents on additional experience for up-gradation since last assessment are to be submitted along with the application. Such an expert needs to score 60% or above in assessment to be upgraded from category B to A.

E 4.10 Submission of application for SA

- An ACO is required to submit its application for surveillance assessment three months in advance from the date on which SA falls due. In case the application is not received till the date when SA falls due, the ACO is given a 15 days' notice followed by a reminder notice of another 15 days. In case the application is not received even after the reminder notice, accreditation may be called off.

- If the ACO does not submit the complete application for SA even on expiry of 3 months after the SA falls due, the case is treated as closed and the name of the organization removed from the ACO list. The ACO needs to apply afresh with requisite application fees if it wishes to be considered for accreditation under the Scheme and is assessed as per IA norms.

- In case an ACO submits the application in time but the same is incomplete in terms of details to be submitted, the ACO is given a 15 days' notice followed by a 2nd notice of 15 days. In case the application is not complete even after the 2nd notice, same procedure as in a) and b) above applies.

- In case recruitment of expert/s is needed for completeness of the requirement of the Scheme, the ACO is given 3 months' time for recruitment of new expert. If the application remains incomplete after 3 months, same procedure as in a) and b) above applies.

- For an ACO falling under a), b) and c) above, irrespective of when the complete SA application is submitted the next assessment namely re-accreditation falls due as scheduled i.e. 36 months after IA.

E 4.11 Self-assessment checklist

Self-assessment checklist for completeness of application and for preparedness of the ACO for assessment by NABET for SA is given at ***Annexure 11*****.**

E 5.0 Assessment process: Re- accreditation

Accreditation cycle under the Scheme is 3 years and re-accreditation (RA) falls due after 3 years of initial accreditation. Application for RA in prescribed format, posted on QCI/NABET website, is required to be submitted to NABET three months before the due date i.e. 18+15=33 months after IA. The application must be complete with all relevant documents which include a list of Geological Reports prepared since SA, list of experts involved, copy of the QMS manual, details about laboratory arrangements, etc. A checklist of the documents to be submitted is given at ***Annexure 3***.

For becoming eligible for RA, an ACO must meet the following requirements –

i. All NCs/Obs. issued in SA have been closed satisfactorily
ii. Only Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab been used after SA.
iii. The ACO has at requisite number of PC and TAEs
iv. The ACO has made all the payments due to NABET

Note

i. Considering a situation that an approved expert may have left the ACO in recent past (3 months prior to the date of application) and it did not have enough time to get an alternate candidate approved, if an ACO puts up in its application eligible in-house/emp. candidates for the applicable core and significant FAs, it may be accepted.

ii. In event of resignation of any of the approved PC/ TAE more than 3 months prior to the date of application, replacement is to be proposed by the ACO within defined timelines
Re-assessment broadly follows the criteria of initial assessment with emphasis in improvements achieved. This includes performance of approved experts, implementation of QMS, integrity of field investigation and laboratory work, quality of Geological Reports completed since accreditation and organizational commitment towards developing quality Geological Reports.

There are six key requirements in RA assessment for re-accreditation. These are detailed in C 5.1 to C 5.5.

E 5.1 Performance of approved experts

i. **Project Coordinators (Prospecting & Mining Plan)** Updation in knowledge about regulations & development in respective field
ii. Site familiarity to plan for respective Reports
iii. Completeness of impact assessment (including for ecological, social, risk related) and quantification, where applicable
iv. Completeness of EMP addressing all impacts with budget & monitoring plan

a. Technical area experts (Prospecting & Mining Plan)

i. Updation about regulations & on latest developments in the concerned area
ii. Site familiarity and role in collection/ supervision of primary data
iii. Identification of all impacts and quantification, where applicable
iv. EMP addressing all impacts and monitoring plan.

Note:

Documentary evidences in support of work carried out during period under RA must be available for PC/TAEs.

E 5.2 Quality management system

This includes implementation and compliance to the updated QMS including NC/Obs. issued in SA, if any. The stress is on assessing improvements in implementation of QMS across the organization and whether all requirements of ***Appendix C*** of the Scheme are addressed.

E 5.3 Field investigations and laboratory systems to ensure data integrity

Collection of quality data is of crucial importance for preparing Geological reports. Primary data are collected for

Geological Reports	Mining Plan
• Prospecting coverage • Geological Mapping and Surveying data • Remote sensing, airborne geophysical survey • Geochemical Survey • Drilling data - Borehole density, Coring/non-coring drilling. • Geophysical logging. • Sampling - Borehole core sampling, Analysis of coal core or Lignite • Petrographic & Mineralogical studies • RQD & Physico-Mechanical Test. • Geostatistical analysis • Hydrogeological Studies • Data Interpretation and Reserve Estimation • Geological Modelling	• Prospecting coverage • Geology: Geology of area; detailed/general Prospecting • Geotechnical and ground & surface waters studies. • Methods of mining, mining plan, detail of manpower • Mining working plans and Mine Closure plan • Details of equipment list • Details about Infrastructure, construction, etc • Processing - industrial scale level investigations • Specific end-use grades of reserves • Costing - Capital costs with break up • Marketing and Financial analysis • Socio- economic aspects • Environmental considerations -

A good understanding of the project based on visit to the project site by approved PC/TAE is of utmost importance for developing the scope of study and for primary data collection.

E 5.4 Coverage and Quality of Geological Report (GR) prepared by the ACO (APA): –

Assessment criteria for this are similar to that in IA. In addition, in the RA assessment Geological Reports (GR) are examined for coverage and quality of data generated in the reports prepared by an applicant organization prior to getting accredited.

The foundation of any good resource estimate is based on reliable data, whether in the form of 3D points that will form a topographic survey, down hole surveys, collar data, sampling and analytical data, geological and geophysical logging data coverage in the Geological Report (GR). The assessment, inter-alia, covers all the aspects involved in preparation.

a. Quality assurance (QA) protocols should be followed for all data types, not just sampling and analytical data.
b. Duly signed declaration of experts' involvement in Geological Reports (GR) preparation

*For details guideline **refer Appendix-F***

E 5.4.1 Coverage and Quality of Mining Plan Report Prepared by ACO (MPPA): –

Assessment criteria for this are similar to that in IA. In addition, in RA assessment the Mining Plans are examined for assessment of the quality of Mining Plan prepared by an applicant organization prior to getting accredited as a baseline reference.

The mining plan becomes vital in that it must enable optimal mining aspects covered regarding the project. The Mining Plan shall cover prescription for different phases of life of the mine as stage plan. The stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life), Environmental management system and practices followed. A quality mining plan must follow the format prescribed in the guideline. *For details guideline **refer Appendix-G***

E 5.5 Organizational commitment –

Assessment criteria are similar to that for SA. Stress is on how effective is the implementation of the systems adopted and improvements achieved since SA.

E 5.6 Improvements achieved –

Assessment would include improvements made since IA in the areas of

i. Performance of approved experts
ii. Quality of baseline data
iii. Enabling factors including facilities provided
iv. Quality of Geological Reports

E 5.7 COMPLIANCE TO CONDITIONS OF SA

During stage II and stage III assessments, compliance to the conditions given after SA for continuation of SA is seen for the ACO to be eligible for RA but no marks are given.

E 5.8 WEIGHTAGE OF MARKS:

c. **Prospecting/ Exploration Agencies (APA):** Table1 of section 7.1
d. **Mining Plan Preparing Agencies (MPPA):** Table 2 of section 7.1

E 5.9 CONDITIONS TO BE FULFILLED FOR RE-ACCREDITATION

i. An ACO needs to score 40% or more in each aspect of assessment as mentioned above for being considered for re-accreditation.
ii. In case the ACO scores less than 40% marks in any aspect it may be given an opportunity of personal hearing by the AC to explain its case.
iii. Requirements for laboratory arrangement, minimum IH employees and experts to cover the functional/ technical areas shall be same as those mentioned for IA and SA above.
iv. In case a major non-compliance/discrepancy/mis-representation of facts is observed in Reports prepared by ACO during period under assessment, renewal of the accreditation may not be considered. However, the ACO may be given an opportunity of personal hearing before final decision is taken by Accreditation Committee
v. Above conditions are in addition to requirements of initial accreditation, which are also applicable.

E 5.10 CATEGORY OF ACCREDITATION/APPROVAL -

Accreditation for organizations and approval for experts are given in two categories as in IA and mentioned in Section 3.7 above.

E 5.11 ADDITIONAL POINTS FOR RE-ACCREDITATION

Additional points for Project coordinators and Technical area experts: category A and B

a. If a candidate/expert assessed for an PC or TAE score less than 40% in stage III assessment, s/he is not approved under the Scheme.
b. Up-gradation of PCs and TAEs from cat. B to cat. A – an expert approved in category B and seeking to be upgraded to category A may be considered with the SA or RA application provided s/he meets the qualifications and experience requirements for Cat. A PC/ TAE, as applicable. Such an expert needs to score 60% or above overall in Stage III to be upgraded from category B to A. To meet the requirements of a cat. An expert to upgrade from B to A, a candidate may work as team member under an approved expert as per TM provision of the Scheme. Necessary documents on additional experience since last assessment are to be submitted along with the application.
c. The AO/ACO is informed of the scores of stage III assessment for the organization as well as individuals with comments on areas of improvements, if any. In case an AO/ACO is not approved and wishes to re-apply, it may do the same after a gap of 3 months ensuring the shortcomings mentioned have been adequately addressed. The same applies for

individuals as well. A similar approach is followed if a consultant organization accredited in category B wishes to upgrade itself to category A. Assessment is carried out as per RA/SA/IA norms, as applicable.

E 5.12 TIMELY SUBMISSION OF APPLICATION

Similar approach as in SA is followed in case the application from an ACO for RA is not received 3 months prior to the date when the RA falls due.

E 5.13 SELF-ASSESSMENT CHECKLIST

Self-assessment checklist for completeness of application and for preparedness of the ACO for assessment by NABET for RA is given at ***Annexure 11*****.**

E 6.0 Assessment of candidates for different organizations

Organizations are accredited mainly on the basis of quality of their personnel, apart from other facilities/ capabilities available. An individual's contribution in the Geological Reports preparation is assessed in the context of overall capability and resources of the organization. The conditions for approval of individual in-house and empanelled experts are explained below:

a. **For in-house experts –**Approval of in-house experts (PC or TAE) would be 'co-terminus' with her /his leaving the parent consultant organization, where the expert is assessed i.e. approval status of any 'approved' expert leaving the parent organization ceases. However, such an expert may be proposed as a fresh candidate by a new AO/ ACO and would undergo assessment as per the Scheme
b. **For empanelled experts –**The number of AO/ACOs that an empanelled expert may be associated with is explained at section *5.1.5* of Scheme above. In case an empanelled expert applies on behalf of a fresh AO/ACO, s/he would undergo assessment accordingly. The new AO/ACO proposing her/his candidature need to enclose the current empanelment status of the expert and also prior history of empanelment, if any, duly signed by both, the expert concerned and the CEO/ authorized signatory of the AO/ ACO.

   Assessment of a candidate for an organization is carried out in context of the scheme, the documentary evidence submitted in support of the experience, performance/ quality of work carried out for other AO/ACOs with whom the expert is/was associated, and how s/he fares in the interaction with the NABET assessors during stage III assessment. It is, therefore, not guaranteed that if one is approved for certain technical area with an ACO, automatically gets approved for such technical areas for another AO/ACO.

   The candidates (in-house or empanelled) who were approved earlier and have shifted organization, can be utilized in Geological Reports preparation process by the new organization wherein they have joined, only after following the defined approval process.

E 7.0 MOU/AGREEMENT /NOC

E 7.1 BETWEEN AO/ ACO AND EXTERNAL LABORATORY

In case an AO/ACO utilizes an external Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab there must be an MOU/ Agreement between them addressing the following –

a. Name of the ACO & Labs
b. Scope of services covered by accreditation or relevant Notification/ Document
c. Name of parameters covered by the agreement
d. Duration of association
e. Name of project/s (preferably)
f. Financial terms including rates for specific items of work (all payments to the laboratory for services rendered to be made through Bank)
g. Signature of CEO/ Head of ACO & authorized signatory of lab

E 7.2 BETWEEN AO/ACO AND EMPANELLED EXPERT –

In case an AO/ACO utilizes an empanelled expert, there must be an MOU/Agreement between them addressing the following to be submitted with the application–

a. Name of the expert & AO/ ACO
b. Name of technical areas for which services are provided
c. Scope of services covered
d. Duration of association
e. Specific roles & responsibilities of empanelled expert
f. Signature of empanelled expert & CEO/ Head of ACO
g. All payments to the empanelled experts for services rendered to be made through Bank.

E 7.3 CONTENTS OF NOC

All empanelled experts associated with an NGO or a Research/Academic institute need to furnish a No Objection Certificate (NOC) from the Registrar of the university, Principal of the college or the Head of the NGO/Research/Academic institute, respectively. The NOCs must address -

a. Name of the expert
b. Name of the Project and Reports for which the NOC is granted
c. Validity of the NOC

E 8.0 Further classification of consultants

It is proposed to further classify the consultants in more detail to afford the project proponents to select the right consultant with right degree of expertise, experience, systems and facilities. The accredited consultants are, therefore, advised to keep the QCI – NABET informed of the projects carried out by them, the number of Geological Reports/ NOC approved by the Govt., improvements in their organization and other relevant information, on yearly basis.

E 9.0 Cases of re-application/up-gradation from Cat B to Cat A

i. **For individuals –** the cases of individual candidates who fail to get approved in category A or in any category, may be applied by the ACO after 3 months of earlier results being put up on QCI-NABET website, making sure that the shortcomings of the assessment have been addressed. Details of experts as per requirements of IA/SA/RA norms are to be submitted by the ACO, as applicable and they undergo assessment accordingly, either at ACOs premises or at NABET office. Requisite application fees are applicable.

Appendix-F

CHECKLIST FOR

PREPERATION OF GEOLOGICAL REPORTS

ON COAL EXPLORATION

Front Page

GEOLOGICAL REPORT ON COAL EXPLORATION

----------Block----------Coalfield. District----------(--------State)

CONTENTS

TEXT

Bibliography and list of references

TEXT FIGURES

SL.NO.	FIGURE NO.	SUBJECT	FACING PAGE NO.

ANNEXURE

SL.NO	ANNEXURE NO.	PARTICULARS	PAGE

PLATES

SL.NO.	PLATE NO	TITLE RF	DRAWING NO

SALIENT FEATURES

Salient features/abstract is a very brief version of the report. It is all some reader will ever see (of read) and should therefore, be as informative as possible. Data should be presented in the same order as in the report or as nearly so as possible. The reader who is interested only in a part of the report can then so quickly and easily refer form abstract to table of contents to text.

Each major section of report should be summarized in at least sentence, and if the report is long each major section should be summarized in a paragraph.

Name of block:

Area of Block: ……..Sq. Km..

Location: Latitude Longitude

Topo sheet No,:

Aerial Photograph/numbers:

Block Boundaries to be defined:

Communication:

Objective: To be stated

Status of Exploration:

- Period of investigation
- Geological mapping
- Topographical survey
- No. of boreholes drilled : Agency wise details
- Total meterage : Agency wise
- Chemical analysis parameters and total samples analysed for each parameter
- Main features of Geophysical investigation
- Main features of Hydrogeological investigation if any
- Main features of physico-mechanical studies if any

Geology:

- Rock formations in the block (Geological sequence)
- Structure : Strike and dip/gradient
- Total No of faults, throw range of faults
- General trend of faults.

- Sequence of coal seam with parting

Coal Seams Particulars:

Sl.No.	Seam Name	Thickness range(m)	Parting range(m)	Depth range(m)	No of intersection	Remarks

-

Quality:

- Seam Wise-Range of all quality parameters dealt in the text.
  Petrographic Analysis

RESERVES:

Total net geological reserve (with breakup of proved, indicated and inferred reserves) in million tones.

- Reserves out side barriers
- Reserves within barriers.
  Seam-wise. Thickness wise and Grade-wise Reserves (Million Tonnes)

Seam	Thickness(m)	Sub-Total	Grade

Details of overburden in case of opencast prospect

Details of stripping ratio for different cut off line/depth line

STATUS OF MINING

RECOMMENDATIONS

CHAPTER-I

INTRODUCTION

1. GENERAL
   i) Give in brief why and how the investigation was undertaken. Reference letter for allotment.
   ii) Objective of the investigation (To meet the demand of any specific project consumer, to solve the problem of structure of the area, variation in thickness, to generate additional quality data etc.)
   iii) Size of the property.
   iv) A brief description of the block with respect to the coalfield.
   v) Brief write up about proposal, its discussion.
   vi) Reference of the Notification of the block for exploration under coal bearing act.
   vii) Reference of Forest clearance in any
   viii) Data of commencement and completion of the investigation.

2. LOCATION

   i. Name of country, province, district in which the block/area is located.
   ii. Coordinates (longitude and latitude) of the area.
   iii. Topo sheet number in which the area is covered.
   iv. Location of the area in relation to a town or natural feature.
   v. An index-map (both as plate and text figure) showing the location of the area block, important localities rail road.

3. ACCESS/COMMUNICATION

   i) Road types and their condition: located in the block or near by
   ii) Road log from nearest town.
   iii) Highway, rail-head aerodrome and port nearest to block.

4. PHYSIOGRAPHY

   i) Geographic region
   ii) Quantitative data about the topographic relief of the area with their description (minimum and maximum relief above mean-sea level, plain, rolling or hilly topography) Slope direction in the area.
   iii) Prominent physiographic features land mark/features of archaeological and cultural interest.

5. Drainage:

   i. Name of river and nala controlling the drainage of the area.
   ii. About perennial and seasonal nature of river and Nala
      a) High-flood level (H.F.L) of the river and major nala,
      b) Area underlying H.F.L to be described
   iii. Situation of villages built in area, agricultural land and forest.
   iv. Flora and Fauna in the area.
   v. Climate:
      a) Describe the minimum and maximum temperature rainfall and humidity and wind direction as recorded in nearby meteoritic station. The available rainfall temperature and humidity data for past years to be included as annexure.

b) Comments on seasonal aspect of exploration.

6. PREVIOUS WORK

i) A brief review of the work carried out by earlier investigators indicating extent of the work including borehole details and meterage drilled and result achieved
ii) Mining and exploration activity in the district and property.
iii) Source/reference of the above-mentioned information.

7. PRESENT INVESTIGATIONS

A. GEOLOGICAL MAPPING

i) Area covered by mapping.
ii) Scale of geological mapping
iii) Method of geological mapping and equipment used.

B. SURVEY

i) Equipment used for survey and their accuracy
ii) Details of base pillars. Bench mark
iii) Triangulation stations their coordinates, data to be included in annexure.
iv) RL and coordinates of borehole. Data to be included as annexure.
v) Surface contouring (Generally for opencast prospect at interval of 2m, and for underground prospect at 3m interval covering additional 600m width all a around the block.
vi) Surface features : To be surveyed are outcrop of coal seam and rocks, railway line, railway siding, railway station, roads, power transmission lines, telephone lines, level, existing quarries, overburden dumps, village, built up area township, water tank forest boundaries, revenue pillars, river, nalla and high flood level.

C. SAMPLING:

Method of collecting coal samples (core from drill holes, sludge from drill holes. Pits. Trenches.

- Name of laboratory where coal samples have been analysed.
- Nature of analysis carried out and their number.
- Total number of boreholes from which samples have been analysed. If any borehole coal core samples not analysed the reason should be mentioned.
- Define bcs I_{30} & I_{100} samples.

D. GEOPHYSICAL INVESTIGATION:

If geophysical investigations have been carried out, mention in brief the objectives name of methods used, processing and results obtained. The details of the geophysical investigation should be given in an independent chapter also.

E. HYDROGEOLOGICAL INVESTIGATION :

If hydrogeological investigations have been carried out, mention the brief the objective and the results obtained. The details of the investigation to be given in a separate chapter.

F. PHYSICO MECHANICAL PROPERTIES OF ROCK

Give the borehole number, the core of which have been used for determination of Physico-mechanical properties. The laboratory where these have been determined.

G. **EXPLORATORY DRILLING:**

The following should be elaborated

- Make of drill and capacity wire line/conventional drilling
- Core drilling or non-core drilling
- Single tube/double tube barrel used
- Size (diameter) of hole (NX/BX)
- Drilling fluid (water or mud, the specification of mud) and any additive to water or mud.
- Borehole spacing
- Core recovery in coal and non-coal portion of the borehole.
- Total number of borehole drilled
- Depth range of borehole and borehole density
- Agency-wise, financial year wise drilling
- Water level measurement the borehole (Table to be provided)
- Artesian condition observed in borehole No with depth at which artesian water condition observed (Table to be provided).
- Emission of gas the details of borehole No and depth to be mentioned.

H. **SCOPE AND LIMITATIONS**

The extent to which the objectives of exploration have been fulfilled.

- Plans of old borehole locations provided on the plan
- Which could not be surveyed as these are not traceable on the ground.
- Thickness and quality data of boreholes
- Additional drilling requirement for firm incrop sub-crop proving.
- limitation about delineation of minor fault (throw to be stated)
- Surface contouring and surveying in the forest area.
- In accessibility non availability of borehole site due to topography, mine working, mine dumps, built up area, forest etc.
- Non-availability of the quality data.

CHAPTER-II

REGIONAL GEOLOGY

Should cover the following aspect of the coalfield in which the block is located.

- Area of the basin and relative position of the block in the basin and the latitude/ and longitude of the basin.
- The extent and boundaries of the basin.
- The potential coal bearing formations & the stratigraphy.
- Tectonics of the basin, the main faults with lateral extent, hade and throw.
- Igneous rocks.
- Stratigraphic sequence should be tabulated under the following headings:

Group	System	Formation	Lithology & Thickness
Paleozoic	Late lower Permian	Barakar,	
	Middle lower Permian	Karharbari,	
	Early lower Permian	Talcher,	

CHAPTER-III

GEOLOGY OF ……. BLOCK

Detailed geology of the area -

- Local geological aspects on coal deposits
- Stratigraphic sequence including thickness of formation

The stratigraphic sequence in ……. Block …….. Coalfield

Group	System	Formation	Thickness	Lithology

- Rock formation exposed in the area to be described with reference to their location on the large-scale map.
- Characteristics of each rocks as observed in course of logging and their distribution in the block. The oldest rock to be described first followed by younger ore.
- Minor sedimentary structure and structural features such as fracture, minor slips, faults, slump, folds etc.

Structure

- Dip and strike of formation as observed on outcrops.
- Dip and strike of formation as per the floor contour plans.
- The major faults should be described and for the others a tabular statement should be given.

Fault No.	Extent of Fault	Trend	Throw			Evidence
			Direction	Amount	Extent	

Intrusive: Occurrence of intrusive, (dyke, sills) in the block

CHAPTER-IV

Description and Quality of Coal Seams.

GENERAL

The coal seams occurring in the block, as revealed by detailed exploration, in ascending order to be monitored.

- The rock formation in which the seams occur.
- The potential seas from the mining point view taking into consideration, thickness aerial development and quality.
- Clean and banded seams.

- Splitting of seams if any.
- Reference of floor contour plan, cross sections and seam folio plans which have been presented in the report.
- Reference of Annexure of lithology and analyses of coal seams.

DELINEATION OF COAL SEAM/SECTION:

- Seams have been delineated on the basis of analytical results of band by band/Seam overall samples.
- Define coal, shaly coal and Carb shale, obvious (non-combustible) dirt bands, combustible dirt bands, Ex band, bcs I30, I100, Ip samples (those considered in the report should be defined).

CORRELATION OF COAL SEAMS:

- Criteria adopted for the correlation of the seams
- Reference of correlation table and graphic correlation chart.
- Existing nomenclature of coal seams and nomenclature followed in the present investigation.

SEQUENCE OF COAL SEAM IN THE BLOCK

Coal Seam/ Parting	Thickness Range (m)		Generalized thickness Range (m)	No. of BH intersection	Remarks
	From	to			

COAL SEAM AFFECTED BY HEAT OR BURNT:

A brief detail about burnt or heat affected seams should be given followed by detail description under the description of the respective seams.

Description of Coal Seam:

The following points should be covered:

- Stratigraphic position of the seam
- The number of boreholes which have intersected full seam, incrop of seam, faulted thickness of the seam and the number of boreholes in which it has not developed.
- Out crop/ incrop/ sub crop of the seams with lateral extent and variation in width.

- No. of borehole in which seam has attained workable thickness and no. of boreholes in which it is of unworkable thickness.
- Depth range of occurrence of seam in the block.
- Development of seam in the block whether developed in the entire block or patchy or deteriorated in a part of the block.
- Thickness range of coal seam including bands.
- Thickness range of coal seam which have been considered for reserve estimation and average thickness.
- If variation in seam thickness is wide it should be described as observed in the different positions of the block.
- Thickness of seam arrived after geophysical logging vis-à-vis drilling.
- Area to be identified where hard cover over seam is less than 15m.
- If the seam is splitted, the portion of the block where it is combined and position where it is splitted.

DIRT BANDS

- Thickness range of combustible and non-combustible dirt bands (obvious dirt bands) with their numbers and cumulative thickness.
- Lithology of non-combustible dirt bands.
- In case of thick coal seams percentage of dirt bands thickness out of coal thickness should be mentioned.
- Reference to the annexure of the borehole wise details of bands.
- Variation of dirt band content in the different parts of the block if present should be described.

PARTING

- Parting thickness range with overlying and underlying coal seams.
- Lithology of the partings.
- Variation of partings in the different parts of the block.

ROOF AND FLOOR OF COAL SEAM

- Lithology of the immediate roof and floor rocks.
- Lithology of the 3m rock of roof and 1m floor rocks.
- If the roof rock is of clayey matter or weather strata, it should be delineated on plan.

COAL QUALITY

A. PROXIMATE ANALYSIS

- The number of boreholes for which band by band analysis have been carried out the total number of boreholes in which full seam thickness have been intersected.
- Reference to the band by band analysis annexure and seam structure plates.

- Total number of borehole samples for which seam overall determination have been carried out and total number of boreholes for which it has been equilibrated from band by band analysis, the reference to the annexure of seam-overall analysis.

  Tables for proximate analysis of Seam

Parameters	Range for		
	bcs samples	I_{30} Samples	I_{100} Samples
	(No. of determinations		
M% Ash% VM% (Dmmf) FC% Gross CV K Cal/Kg(Dmmf) GCV Kcal/Kg Grade			

Table: Statistical analysis thickness and quality parameters for Seam No……

Particulars	No. of	Thickness (m)	bcs Samples			I_{30} Samples		
			M%	Ash%	GCV	M%	Ash%	GCV
(No. of samples)								
Mean Standard Deviation								

- Variation of proximate analysis parameters and grades in the different parts of the block should be described.
- Percentage of the samples of the different grades.

B. **Ultimate Analysis**

- The total number of samples analysed.
- Reference to the annexure of ultimate analysis

Table: Ultimate analysis (Dmmf basis) of Seam …….

Parameters	Range	Number of Samples

	From	To	
C% H% N% S% O%			

- Sulphur distribution: Organic and inorganic sulphur.

C. **Ash Fusion Temperature (under mildly reducing atmosphere)**

- The number of determinations carried out

- Reference to the annexure

(Under mildly reducing atmosphere)

Parameter	Range		No. of determinations
	From	To	
IDT^{o}C HT^{o}C FT^{o}C			

- Based on ash fusion temperature prediction of behaviour of ash in furnace on burning.

D. **Ash Analysis**

- No. of determination carried out
- Reference to the annexure
- If any parameter shows abnormal high value, it should be highlighted and explanation given.

Table : Ash Analysis for Seam No……

Parameter	Range		No. of determinations
	From	To	

E. **HGI**

- No. of determinations
- Reference to annexure
- Grindability of coal based on H.G.I. values

Table: H.G.I. values for Seam No……..

F. Low Temperature carbonization studies data

G. Long Flame characteristics of coal

H. Petrographic Analysis

- No. of determinations carried for Seam No……

Maceral composition %	Range	
	From	To
Vitrinite Semi Vitrinite Exinite Inertinite Mineral matter Vitrinite itype Distribution% ROR		

Mean Random Reflectance of vitrinite

I. Caking Properties

Number of determinations should be mentioned for the following tests each seam with the range of their values.

- CI Range Index
- Grey King Coke type
- Swelling Index
- Gieslar plastometer test
  i. Maximum fluidity ddpm
  ii. Fluidity range

J. Washability Test Result

Crushed to size ……. at differ specific gravity cut

Raw Coal Ash%	Clean		Middlings		Rejects on 1.8 sp gr	
	Yield	Ash%	Yield	Ash%	Yield	Ash%

- The determination of coal quality pertaining to coking coals should be carried out for cleans.
- The determinations of coal quality pertaining to non-coking coals should be carried out for middlings.

K. Based on above described quality parameters state the rank of coal and its class and nature as per Indian Standard Procedure.

CHAPTER-V

RESERVES

A. General

- The seams established in the block.
- Persistent and impersistent seams.
- The potential seams of the block from thickness, area of development and quality points of view considered for reserves estimation.
- Seam is amenable to opencast or underground mining.

B. BASIS ASSUMPTION AND NORMS FOLLOWED

- The isochors, isograds and floor contours have been drawn on the basis of the principal of gradual change. It is assumed that the variation between any two points of observation is uniform and gradual.
- I30 thickness and quality for underground reserves and I100 thickness and quality for open cast reserves.
- Inclusion or exclusion of non-combustible dirt band in seam thickness for reserve calculation. (In same cases shale bands are included for reserve estimation)
- Minimum thickness considered for reserve estimation.
- The reserves should be estimated for 0.90m & above (superior coal), 1.20m to 1.50m(inferior coal) 1.50m-1.80m, 1.80m to 2.00m to 2.5m, 2.50m to 3.00m, 3.00m-3.50m, 3.50m-5.0m, 5m to 10m thickness ranges and above 10m.

- In areas where seams are not developed at all, the limits of the zone of non-development should be marked by taking half of the influence of boreholes with positive seam intersections.
- Basis for dlineation of Jhama/ heat affected/unaffected coal zones.
- Width of barrier, along river, nala, village, road, rain and power transmission lines should be mentioned.
- For HFL zone separate reserves should be computed.
- The area of heave zones of faults should be excluded from reserve estimation.
- Deduction of 10% from gross reserves to arrive at net-in-situ reserves to account for unforeseen datum gap, wash out zones, abrupt change in seam thickness.

C. Isochore method of Reserves Estimation: should be described.

D. Method for over burden estimation: should be described.

E. Calculation of specific gravity:

- The specific gravity should be calculated seam wise for each grad as follows:
- The mean of ash percentage for each grade of each seam should be obtained.
- Specific gravity = 1.28 + 0.01 x Ash% (mean value) (for high moisture coal)
- Specific gravity = 1.29 + 0.01 x Ash% (mean value) (for low moisture coal)
- The specific gravity so determined be tabulated.

F. Grade estimation for non-coking and coking coals

- Based on gross calorific value for non-coking coal.
- Based on ash% for coking coals.

G. Categorization of Reserves of each seam.

- Area considered for reserve estimation: should be described.
- Sectors for Reserves Estimation: should be defined.
- Depth wise Reserves: for underground mines from incrop subcrop to 300m depth, 300m to 600m depth and 600m to 1200m depth
- For opencast mines, incrop to 50m depth and further at 50m depth interval

H. Ratio-wise (coal-OB) reserves for Opencast Property

- <1:10 for opencast and >1:10 for Underground

I. Presentation of Reserves

- Seam-wise, isochore-wise, sector-wise, grade-wise reserves outside the barrier and within barriers, along with the area of sectors should be furnished in annexures.

- Summarised reserves table giving details of seam-wise, grade-wise, sector-wise reserves and category-wise for seam thickness ranges of 0.9m-1.20m, 1.20m-1.5m, 1.5m-1.8m, 1.8m-3.5m, 3.5m-5m, 5m-10m and above 10m should be included in the test. For opencast property depth wise reserves for incrop to 50m, and further at 50m interval should be given for the above-mentioned headings.
- For opencast property reserves for the cut off lines mentioned under K with value of overburden under above mentioned heads should be given with stripping ratio.

J. Presentation of overburden:

- Sector-wise volume of overburden.
- Depth wise volume of overburden.

K. Description of Reserves

- The total reserve of all the seam for thickness 0.9m-1.20m, 1.20m-1.8m and above 1.8m outside and within barrier with the range of grade and general grade should be mentioned.
- Reserves of each potential seam for under the above heads should also be mentioned.
- In case of opencast property, the reserves under above mentioned heads for different depth range and cut of lines with stripping ratio should be given.
- Taking into account reserves, area of development and grade the workability of each seam in the block should be described.

SUMMARY & RECOMMENDATION

The summary of the text should be given.

RECOMMENDATION

- In case any recommendation is made for further exploration or generation data proper justifications to be given on the following aspects.
- Programme of further work indicating the quantum of specific details involved such as precise proving of incrop and delineation of fault; proving of seam thickness by close drilling longwall mining and highly mechanized mine; boreholes to be drilled for incline alignment.
- In case further explorations are required prior to initiating exploration the same with the reasoning should be clearly indicated along with anticipated quantum of work and specific mention to provide adequate fund in project report.
- Any special study, if necessary.

Bibliography and list of references cited

A bibliography is list of references that includes all works pertaining to the subject of the report whether they are actually referred to in the report or not. A list of reference cited includes only the work referred to in the text of the report. The advantage of the bibliography is that it gives a complete picture of background material for the report.

The items of list of references cited or bibliography are arranged in alphabetical order of author name. Two or more works by one author are listed in Chronological order. Items by co-authors appear in order of the first co-author's name and after his single entries. These rules with punctuations are illustrated by the examples the follows:

1. ----------
2. ----------

Co-ordinates, Reduced Levels, closing depth and dates of commencement and closure of boreholes in ……. Block …….. Coalfield, district …….. State.

Sl.No.	Borehole No.	Latitude (m)	Departure (m)	R.L.	Closing depth (m)	Date of commencement	Date of closure

Boreholes drilled within the block

(a) G.S.I.
(b) NCDC
(c) I.B.M.
(d) CMPDI
(e) M.E.C

Boreholes considered for documentation located adjacent to the block

Agency

ANNEXURE-IB

Reduced Level and Co-ordinates of Triangulation stations of …… block, ……..
coalfield, district …… State ……

Sl.No.	Station No.	Co-ordinates		Reduced Level (m)
		Latitude (m)	Departure (m)	

ANNEXURE-IC

Co-ordinates of Revenue Pillars (R.P.) of ……. Block …… coalfield, district ……
State ……

Sl.No.	Revenue Pillar No.	Co-ordinates	
		Latitude (m)	Departure (m)

ANNEXURE-II

Run-wise/consolidated lithologs of boreholes drilled in …… Block, …….

Coalfields, district …… state ……

B.H. No.

Latitude …… Collar R.L. ……Date of commencement…….

Departure ……. Closing depth ……..

Date of

Closure ……..

Run			Total Recovery	Thickness		Floor depth	Description		
From (m)	To (m)	Length (m)		Recovered	Extra palated		Lithology	Colour	Strength feature

Roof ……m of the Seam 'A'

Floor ……. M of the Seam 'A'

ANNEXURE-III

Statement showing the thickness of soil, weather mantle and different formations intersected in boreholes drilled in …….. of the block, …….. district …… State ……..

Borehole No.	Thickness (m)				Total Depth
	Soil	Weathered mantle	Barakar	Karharbari	

ANNEXURE-IV

Statement showing borehole-wise coal seams correlation …… block …… coalfield……. District…….(State)

Borehole No.	CMAD-1	CMAD-2
RL		
Seam No.		
Depth		
FRL		
RRL		
Parting		

ANNEXURE-V

Statement showing band by band analysis on air-dried basis of coal seams encountered in boreholes drilled in …… block …….. coalfield, district …… State……..

From (m)	To (m)	Ext. (m)	Rec. (m)	Lithology	M%	Ash%	VM%	FC%	Wt. In gms	Seam plate no.

Borehole No. …….

Seam Name : Thickness (m) :

Starting Depth (m) : Closing Depth (m) :

Statement showing the details of dirt bands present in coal seams

Encountered in boreholes drilled in …….

Block, …….. Coalfield, …….

District, ……. State

BH No.	Seam Depth				Carb. Shale (A+M) 55-75%				Obvious dirt band							
	From	To	Thickness	No.	Thickness of individual bands >0.30m/1.00 m	Total thickness	%	No.	Thickness of individual bands >0.30m/ 1.00 m	Total thickness	No.	Thickness of individual bands >0.30m /1.00 m	Total thickness	%	Effective thickness workable section excluding carb. Shale >30cm/1.00m and obvious band (m)	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

ANNEXURE-VII

Statement showing determined proximate analysis, calorific value & useful heat value on 60% R.H. at 40oC for coal seams encountered in boreholes drilled in ……. Block, …….. coalfield, district …….. State ……..

BH No.	Seam Depth			Dirt bands			Type of samples	M%	A%	VM%	FC%	CV K.cal/Kg	GCV K.cal, Kg
	From (m)	To(m)	Thickness (m)	No.	Thickness individual carb shale (m)	Thickness of individual obvious dirt bands (m)							

ANNEXURE-VIII

Statement showing proximate analysis on equilibrated basis (determined and calculated) of coal seams encountered in ……. block …….. Coalfield ……..…….. State …….

Borehole No.	Depth		Thick Ness (m)	Analysis												Combustible Dirt bands								Non combustible Dirt bands	
	From (m)	To (m)		BCS Sample				I-30 Sample				I-Sample				Carb Shale >30cm		Carb Shale >30cm						Analysed	Not Analysed
				M %	Ash %	GCV Kcal/Kg	GR	M %	Ash %	GCV Kcal/Kg	GR	M %	Ash%	GCV Kcal/Kg	GR	Total Thick (%Thck)	fc	Total Thick (%Thck)	fc	Total Thick (%Thck)	fc	Total Thick (%Thck)	fc		

ANNEXURE-IX

Statement showing ultimate analysis (Unit Coal Basis) of coal seams encountered in borehole drilled in …….. block, …….. coalfield, …….. District, …… State …….

Bh No.	Seam depth			Type of sample	Ultimate analysis (dmmf basis)				
	From	To	Thickness		C%	H%	N%	S%	O%

Seam No. / Seam Name

ANNEXURE-X

Statement showing Ash fusion temperature range of coal seams encountered in boreholes drilled in …….. Blocks, ……coalfield, …… district …….. State ……

BH No.	Seam Depth			Type of sample	Initial Deformation Temp^{o}C	Hemisphere Temp^{o}C	Flow Temp^{o}C
	From	To	Thickness				

ANNEXURE-XI

Statement showing ash analysis of coal seam encountered in boreholes drilled in …….. block, …….. coalfield …….. district, …….. state

BH No	Seam Depth			Type of sample	Sio_2%	Al_2O_3 %	Fe_2O_3%	Tio_2%	P_2O_5%	So_3%	Cao%	Mgo%	Alk%
	From	To	Thickness										

Appendix G

Comprehensive Guideline for Preparing Mining Plan

F. No. 34011/28/2019-CPAM
Government of India
Ministry of Coal

Shastri Bhawan, New Delhi
The 29th May 2020

Office Memorandum

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

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

1. **Mining Plan:** All coal (including Lignite) mining operation in India shall henceforth be governed as per these modified guidelines listed below and henceforth, the Mine Closure Plan and Final Mine Closure Plan shall be integral part of Mining Plan. Separate approval of Mine Closure Plan/ Final Closure Plan has been done away with. The Guideline/format for formulation of Mining plan is enumerated at **Appendix – I.**

1.1. **Implementation of the approved Mining Plans shall be sole responsibility of the mine owner.** Mining operations shall be undertaken in accordance with the duly approved mining plan. The mining plan once approved shall be valid for the balance life of the Mine, provided that any modification(s) of the mining plan is approved by the competent authority and such approval of the modified mining plan shall remain valid for the estimate balance life of the mining plan. Modification of the approved mining plan during the operation of a mining lease also requires prior approval.

1.2. The mining plan shall cover prescription for different phases of life of the mine as stage plan. The Stage plan for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life) and post closure shall be submitted at the time of initial submission of mining plan. The project proponent shall submit a **report/information** consisting **a.** compliance status with respect to approval condition of mining plan and grounds specified at para 1.3A; **b.** stage plan for next five years; **c.** revised balance life of the mine; and **d.** revised calculation of ESCROW amount with respect to revised balance life, to Coal Controller, CCO, Kolkata with a copy of the same to Administrative Section dealing with the allocation/allotment of the block and section dealing with approval of mining plan at MoC/CCO, **for information**. Such report/information must be submitted at least 180(one hundred eighty) days before the expiry of 5 (five) year, starting from the commencement of the Mineral Concession (Amendment) Rules, 2020 or the date of execution of the duly executed mining lease deed, whichever is later. Information desired above must bear certificate of **Qualified Person/ Accredited Mining Plan preparing Agency** and have approval of the respective company board. Non submission of such information during the stipulated time may result in withdrawal of mine opening permission or cancellation of the approved mining plan, as may be decided by CCO.

The Mining Plan approved prior to issue of this Guideline will qualify for submission of such report/information at least 180(one hundred eighty) days prior to expiry of 5 (five) year from the date of notification of the Mineral Concession Amendment Rules 2020.

1.3.**(A)** The mining plan may be modified for **a.** for change in method of mining; **b.** for facilitating increase in sanctioned peak capacity that is in excess of one hundred and fifty per cent of the

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

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

1.4. The Mining Plan submitted for approval shall have prior approval of the concerned Board of the Company.

1.5. The base date of the Mining Plan should be taken as cut-off date on which the extractable reserve, balance life etc. has been quantified.

1.6. The proposed leased area in the Mining Plan shall include the area specified in the mining lease within which mining operations can be undertaken and includes the non-mineralized area required and approved for the activities falling under the definition of mine as referred in The Mines Act 1952.Evacuation route, R&R and Employee Township area outside the block will not be part of the Mining plan.

1.7. Pre-mining land ownership/land type furnished in the mining plan will be of indicative in nature along with data source at its footnote (viz. from topo sheet, cadastral plan etc.).

1.8. The excavation/ mining area envisages in the mining plan must be restricted within the allotted/vested geological block boundary/existing mining lease and if the project area is confined within the allotted block boundary/existing mining lease, a certificate to this effect is to be provided by the **Qualified Person/ Accredited Mining Plan preparing Agency** preparing the mining plan. The certificate must be made on the Conceptual Plan depicting Cardinal Point Co-ordinates (shape co-ordinates) of the project boundary, Lease boundary and Geological Block boundary (binding co-ordinates given in the vesting order).

1.9. Under provisions of Rule 16 of MCR 1960, State Government is custodian of the exploration data. As such in the cases, where the project area extends beyond the block boundary/existing mining lease the Mines and Geology Department of the concerned State Government shall issue a certificate specifying (a) intent of the State Government for grant of lease beyond the vested geological boundary; (b) non-existence of coal/ lignite in the area beyond the vested/allotted geological block boundary/existing mining lease to rule out the issue of encroachment. The application for issue of certificate from the Mines and Geology Department of the State Government must be supported with proof of the non-existence of coal/lignite in the area under reference (along with their Cardinal Point coordinates) duly certified by custodian agency viz. CMPDIL/ SCCL in case of coal and NLCIL in case of lignite.

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

1.10. In case of allotted/auctioned coal/lignite blocks, the mining plan may be revised for extraction of more coal on year to year basis.

Provided that the mining plan shall be revised for extraction of less coal on year on year basis only under following circumstances: a. if the remaining extractable reserve of the coal mine is less than

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

1.11. The approval of the revised Mining Plan shall not result in changes in the terms and conditions or efficiency parameters mentioned in the CMDPA/Allotment Agreement signed at the time of allotment/vesting for the auctioned/allotted blocks without prior approval of the nominated authority or Central Government, as the case may be. However, efficiency parameters mentioned in the CMDPA/Allotment Agreement shall be linked to the rated capacity of the mine.

1.12. The project proponent shall envisage the action plan for exploration and liquidation of the balance reserve yet to be projectised.

1.13. The project proponent shall take all necessary precautions regarding safety of mine workings and persons deployed therein and shall adhere to all the statutory clearances with regards to safety.

1.14. Proposed project area envisaged in the mining plan shall not encroach into any other adjacent coal block unless permitted to do so by the Ministry of Coal in writing.

1.15. The approval of the Mining Plan is without prejudice to the requirement of approvals from competent /prescribed authority under the relevant rules/ regulations etc.

1.16. The project proponent shall submit an undertaking that the mine shall be operated as per the Environment Clearance (EC) & Forestry Clearance (FC) for the project.

1.17. **Statutory Obligation:** The legal obligations, if any, which the lessee is bound to implement, like special conditions imposed while execution of lease deed, approval of Mining Plan, conditions imposed by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Central Pollution Control Board (CPCB),State Pollution Control Board (SPCB), Directorate General of Mines Safety (DGMS) or any other organizations describing the nature of conditions and compliance positions thereof, should be indicated in the Mining Plan.

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

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

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

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

2.4. The Government may at any time before the closure of mine require certain activities to be included in the mine closure plans, which it may consider necessary for the safety and conservation of environment, or in compliance with any modification/ amendment in the relevant legislation.

2.5. **Abandonment cost:** The total cost for carrying out such activities shall be estimated for assessment of abandonment cost of the mine involving progressive and final mine closure activities such as barbed wire fencing all around the working area, dismantling of structures/demolition and cleaning of sites, rehabilitation of mining machinery, plantation, physical/biological reclamation, landscaping, biological reclamation of left-out overburden dump, filling up of de-coaled void, post environmental monitoring, supervision charges, power cost, protective and rehabilitation measures including their maintenance and monitoring, miscellaneous charges etc. for the specified post closure period.

2.6. **Escrow Account Calculation:** In August 2009 it was estimated that typically closure cost for an opencast mine was around rupees six lakhs per hectare of the total project area and rupees one lakh per hectare for underground project area at the-then price level. Accordingly vide letter dated 7th January 2013 a guideline for mine closure was issued which needed modification in these rates based on the wholesale price index (WPI) as notified by Government of India from time to time while preparing the Mining plan and Mine Closure Plan. The escalated rate (based on the current base year i.e. 01.04.2019) is Rupees Nine Lakh per hectare in opencast and Rupees one lakh fifty thousand per hectare for underground Mine. These rates will be considered as Base Rate to be applicable from 01.04.2019, which may change as specified from time to time by the Government of India.

[Exemplary Calculation: {(Rs 6 lakhs x 1.561 linking factor for base year 2004-05 x WPI 121.1 as on April 2019) / (WPI as on August 2009)} = Rupees 8.75 lakh, rounded to Rupees 9 (nine) lakhs per hectare in case of Opencast project].

Henceforth, these rates will stand modified based on the wholesale price index (WPI) as notified by Government of India from time to time. Annual closure cost is to be computed considering the total project area of the mine multiplied by escalated rate (at the above mentioned rates) and dividing the same by the balance life of the mine in years. An amount equal to the annual cost is to be deposited each year throughout the mine life compounded @5% annually.

[For example if the annual cost works out to Rs 100, then in the first year the amount to be deposited will be Rs 100, in the second year 100x(1+5%)^1, in the third year 100x(1+5%)^2 and so on.]

Further, in case of the mine, where escrow account is already open, the annual closure cost is to be computed considering the total project area at the above mentioned rates minus the amount already deposited and dividing the same by the balance life of the mine in years and annual cost as arrived should be compounded @5% annually.

2.7. **Financial Assurance:** The Mining Company/ Mine Owner as a part of Financial Assurance will open a Fixed Deposit Escrow account, with the Coal Controller Organization (on behalf of the Central Government) as exclusive beneficiary prior to commencement of any activities on the land/project area of the mine and shall submit the same to Coal Controller Organization (CCO) before the permission is given for opening the mine. The mining company shall cause the payment to be deposited at the rate computed as indicated at Para 2.6. The owner of the company may select the Schedule Bank where the Escrow account is to be opened and inform the same to the Coal Controller, CCO, Kolkata.

2.8. Coal Controller, Kolkata shall get the WPI (used for escalation of closure cost at the time of formulation of Mining plan) updated, at the time of opening of Escrow account. The mine owner/ company including all public/ private sector companies shall deposit the yearly amount in a Schedule Bank in accordance with Para 2.6. Coal Controller, **Kolkata shall also get the**

information, submitted under to para 1.2, verified and get the yearly closure cost modified with respect to the latest WPI in accordance with para 2.6.

2.9. Final Mine Closure: The details of the Mining Plan (covering Final Mine Closure Plan envisaging the details of the updated cost estimates for various mine closure activities and the Escrow Account already set up, shall be submitted to the approving authority for approval at least five years before the intended final closure of the mine.

2.10. Final Mine Closure would be considered to be completed only after acceptance of the third-party audit report by the Coal Controller on the compliance of all provisions of Mine Closure Plan. Any Institute/ Organization/Agency as may be specified by the Government for this purpose may be engaged for Third Party audit to create a self-sustained ecosystem. Failure of restoration within the specified period may result in forfeiture of Escrow Account created as per Para 2.6& 2.7. The details of the Final Mine Closure Plan along with the details of the updated cost estimate for various mine closure activities and escrow account already set up shall be submitted at the time of approval of final mine closure plan.

2.11. **Time Scheduling for abandonment:** The Action plan for carrying out all abandonment operations (progressive and final mine closure) should be furnished in the form of bar chart for a period of life of the mine plus post closure period. Post closure period shall be taken as3 (three) years for Underground mines and Opencast mines having stripping ratio lesser than 6(six) MM^3/Te & 5 (five) years for mines having stripping ratio more than 6(six) MM^3/Te.

2.12. **Implementation of the approved Mine Closure Plan shall be sole responsibility of the mine owner.** Mining is to be carried out in a phased manner i.e. continuation of mining activities from one phase to other indicating the sequence of operations depending on the geo-mining conditions of the mine. Up to 50% of the total deposited amount including interest accrued in the ESCROW account may be released after every five years in line with the periodic examination of the Closure Plan as per Para 2.2. The amount released should be equal to expenditure incurred on the progressive mine closure in past five years or 50% whichever is less. The balance amount shall be released to mine owner/leaseholder at the end of the final Mine Closure on compliance of all provisions of Closure Plan. This compliance report should be duly signed by the lessee and certify that said closure of mine complied all statutory rules, regulations, orders made by the Central or State Government, statutory organisations, court etc. and certified by the Coal Controller.

2.13. **Responsibility of the mine owner:** It is the responsibility of the mine owner to ensure that the protective measures contained in the mine closure plan including reclamation and rehabilitation works have been carried out in accordance with the approved mine closure plan and final mine closure plan.

2.14. The owner shall submit to the Coal Controller a yearly report before 1st July of every year setting forth the extent of protective and rehabilitative works carried cut as envisaged in the approved mine closure plans (Progressive and Final Closure Plans).

2.15. The money to be provided per hectare of total Project Area for the purpose is to be deposited every year on commencement of any development activity on the land for the mine after opening a Fixed Deposit Escrow Account prior to obtaining mine opening permission from Coal Controller. Mining company/owners including all Public Sector Undertakings shall deposit the yearly amount in a Scheduled Bank. If the Mine owners fail to deposit the required annual amount in accordance with Para 2.6, 2.7 & 2.8, the Government can withdraw the mining permission.

2.16. The funds so generated are towards the security to cover the cost of closure in case the mine owner fails to complete the relevant closure activities. The prime responsibility of mine closure shall always lie with the mine owner, and in case these funds are found to be insufficient to cover the cost of final mine closure including the areas covered in Para 2.3 2.6, 2.7, 2.8 & 2.9 above. The mine owner shall undertake to provide the additional fund equivalent to the gap in

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

2.17. **Final Closure Certificate:** The Mine owner shall be required to obtain a mine closure certificate from Coal Controller to the effect the protective, reclamation, and rehabilitation work in accordance with the approved Mining plan covering final mine closure provisions/activities have been carried out by the mine owner for surrendering the reclaimed land to the State Government.

2.18. The balance amount at the end of the final Mine Closure shall be released to mine owner on compliance of all provisions of Closure Plan duly signed by the mine owner to the effect that said closure of mine complied with all statutory rules, regulations, orders made by the Central or State Government, statutory organizations, court etc. and duly certified by the Coal Controller. This should also indicate the estimated extractable coal reserves and coal actually mined out.

2.19. If the Coal Controller has reasonable grounds for believing that the protective, reclamation and rehabilitation measures as envisaged in the approved mine closure plan in respect of which financial assurance was given has not been or will not be carried out in accordance with mine closure plan, either fully or partially, the Coal controller shall give the mine owner a written notice of his intention to issue the orders for forfeiting the sum assured at least thirty days prior to the date of the order to be issued after giving an opportunity to be heard.

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

3.1. System of granting Recognition to a person for preparation of mining plan u/s 22C of MCR 1960 & preparation of mining plan only by RQP u/s 22B of MCR 1960 shall be done away with, after commencement of the Mineral Concessions (Amendment) Rules, 2020.

3.2. After commencement of Mineral Concession (Amendment) Rule 2020, no mining plan shall be accepted unless it is prepared by Qualified Person (QP) or Accredited Mining Plan Preparing Agency (MPPA).

3.3. Quality Council of India (QCI) or National Accreditation Board for Education and Training (NABET) shall be engaged for accrediting following entities:

(i) Accredited Prospecting Agency (APA) for undertaking prospecting operations and preparation of geological reports for Coal and Lignite Mines, and

(ii) Mining Plan Preparing Agency (MPPA) for preparation of mining plan (for Coal, Lignite Mines and Sand for Stowing)

3.4. The Quality Council of India (QCI) or National Accreditation Board for Education and Training (NABET)shall grant accreditation in accordance with such standards and procedures as specified in schedule VI of Mineral Concession (Amendment) Rule 2020.

3.5. Qualified Agency (QP) or Mining Plan Preparing Agency (MPPA) who prepares mining plan for a block/mine, shall have recognition from the concerned company board that the qualification of the QP or accreditation of the MPPA has been duly verified and is in line with the relevant provision of the MCR 1960.

4 Submission, Processing and Scrutiny of Mining Plan

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

4.2 **<u>On and from the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020</u>**, every mining plan submitted for approval/modification

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

4.3 All pages (including cover page, plates and Annexures) shall bear the signature & stamp furnishing details of the QP/Accredited Mining Plan preparing Agency (MPPA) in physical mode of submission and e-signature/digital signature during the online system of submission.

4.4 Ministry of Coal is in process of development of on-line portal for submission and approval of mining plan. system of acceptance of Physical copy shall be continued till the development/operationalization of online portal for submission and approval of mining plan.

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

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

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

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

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

4.4.2 **Online System of Submission of Mining Plan for Approval:**

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

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

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

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

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

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

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

5 Scrutiny & Processing of Mining Plan

5.1.1 The current system of getting the mining plan scrutinized through CMPDI, Ranchi shall continue. Ministry of Coal is in process of creating an extended office of Coal Controller Organization at Delhi which shall be delegated with the work of processing and scrutiny of mining Plan. A letter to this effect shall be issued separately.

5.1.2 CMPDIL/Extended office of CCO at Delhi shall scrutinize the mining plan and submit comments to section of MoC/CCO dealing with approval of Mining plan within Fifteen (15) days of receipt of the Mining Plan. Non-submission of comments within the stipulated time may be presumed as "no comment" from CMPDIL/Extended office of CCO; CMPDIL/ Extended office of CCO at Delhi, if consider necessary to make a physical verification of the site/site visit for scrutiny of the mining plan, may make such site visit/physical verification of the site, however, no relaxation in the time line as specified above may be given.

5.1.3 Administrative Section of the Ministry of Coal (dealing with the block) shall scrutinize the mining plan with respect to Vesting order/ allotment order and CMDPA signed with allottee at the time of allotment and submit observations to section of MoC/CCO dealing with approval of Mining plan (till the development of portal for Mining plan approval) within Fifteen (15) days of receipt of the Mining Plan. Non-submission of comments within the stipulated time may be presumed as "no comment" from the administrative section;

5.1.4 Members of the Internal Committee shall examine the mining plan from Technical and administrative angle based on the observations of the Administrative Section (dealing with the respective block) and CMPDIL/Extended office of CCO and the peer/expert review report submitted with the mining plan and submit observations to section of MoC/CCO dealing with approval of Mining plan (till the development of portal for Mining plan approval) within Fifteen (15) days of receipt of the Mining Plan. Non-submission of comments within the stipulated time may be presumed as "no comment" from the administrative section. Members of the internal committee, CMPDIL/Extended office of CCO may raise observation twice only. The observation raised shall be communicated directly to the project proponent for incorporating the same in the mining plan. The project proponent shall make presentation in the meeting of the internal committee for scrutiny.

5.1.5 Section of MoC/CCO dealing with approval of Mining plan shall communicate the observation (if any) to the project proponent for compliance till the development of online system for submission, processing, and approval of mining plan.

5.1.6 Subsequent, to development of online portal for submission, processing, and approval the observations of the internal committee members shall be uploaded directly on the portal, which will be visible to the project proponent. A timeline of 15 days shall be available for the internal committee members to upload the comments. Non-submission of comments within the stipulated time may be presumed as "no comment".

6 Timeline for submission of Compliance:

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

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

7 Approving Authority:

7.1 On and from the date of publication of order and up to the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, the powers to approve mining plan for all categories of coal and lignite mines and sand for stowing shall be exercisable by Project Adviser, Ministry of Coal.

7.2 On and from the expiry of period of nine months from the commencement of the Mineral Concession (Amendment) Rules, 2020, the power to approve mining plan for all categories of coal and lignite mines including sand for stowing shall be exercisable by the Coal Controller, CCO, Kolkata, a subordinate office of Government of India in the Ministry of Coal.

7.3 The person delegated to approval of Mining Plan under sub-section (1) of section 26 read with clause (b) of sub-section (2) of section 5 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957) (hereinafter, the 'Act') may seek help of an Internal committee constituted for the purpose.

7.4 The approving authority shall dispose of the application for approval of the Mining Plans within a period of 30 days from the date of receiving of such application (The Mining Plan received on or before 30th of Current Month will be considered in the ensuing meeting). Provided that the aforesaid period of 30 days shall be applicable only if the Mining Plan is complete in all respect, and in case of any modifications subsequently suggested after the initial submission of the Mining Plan for approval, the said period shall be applicable from the date on which modified mining plan is re-submitted.

8 Internal Committee for Scrutiny of Mining Plan:

8.1 Members of the Internal Committee shall examine the mining plan from Technical and administrative angle based on the observations of the Administrative Section dealing with the respective block & CMPDIL/ Extended office of CCO.

8.2 The internal committee shall recommend the mining plan for "Approval" or "Rejection". In case of recommendation for Rejection, the committee shall record the reason for Rejection.

8.3 Till the opening of CCO office at Delhi, the internal committee shall consist of:

1. Director (Technical), MoC, Member Secretary
2. Director/ Deputy Secretary, MoC of the section dealing with the allocation/allotment of the respective block, Member
3. Coal Controller or his representative, Member
4. Director level officer of CMPDIL, Member
5. Director/Deputy Secretary, Nominated Authority, Member

8.4 After opening of CCO office at Delhi, the internal committee shall consist of:

1. Director level officer of CCO having relevant working experience., Member
2. Director/ Deputy Secretary of the section dealing with the respective block, Member
3. Head of Regional Coal Controller Office (having relevant working experience in mine planning), CCO Regional Office New Delhi, Member Secretary
4. Any other technical person having working experience of not less than 15 (fifteen) years in mine planning, Member

9 Communication of Approval:

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

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

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

10 Revision:

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

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

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

(Hitlar Singh)
Under Secretary to the Government of India

To,

All the existing Coal and Lignite block allocates

Copy to: -

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

DETAILS TO BE FURNISHED IN THE MINING PLANS FOR COAL/LIGNITE BLOCKS

A. Cover Page

The Cover page should contain the following information:

(i) Name of the Mining Plan and Mine Closure Plan /Final Mine Closure Plan

(ii) Indication, if it is a Modified Mining plan seeking approval under Rule 22E of MCR 1960, it should be marked as **"Modified Mining Plan with Modification No"** i.e. First Modification, Second Modification etc.

(iii) Name of the Coal/Lignite Block area (Acre/Hectare/Sq. Km.)

(iv) Name of the Coalfield and its location i.e. District and State

(v) Name and address of the Applicant

(vi) Targeted capacity

a. Rated capacity : ____ Mty)

b. Peak Capacity (@ 150% of the rated capacity) : in ____Mty,

(vii) Name of the **Qualified person/ Accredited Mining Plan preparing agency (MPPA)**preparing the mining plan with details

B. Index of Chapters of the Mining Plan (Including Mine Closure Plan) / Mine Closure Plan or Final Mine Closure Plan

C. Index for List of Annexure

D. Index of List of Plans/ Drawing Attached enclosed as Plates

E. List of Abbreviations used.

(viii) All Plans must be colored distinctly with proper legends.

CHECKLIST

Details		(✔ / ✖)
	Expert-review Report	
Text	Project Information	
Text	Exploration, Geology, Seam Sequence, Coal Quality and Reserve	
Text	Mining	
Text	Safety Management	
Text	Infrastructure Facilities proposed and their Location	
Text	Land Requirement	
Text	Environment Management	
Text	Progressive & Final Mine Closure Plan	
Annexure	Copy of allotment order /Vesting order.	
Annexure	Certificate of **Qualified person/ Accredited Mining Plan preparing agency (MPPA)**if the project area is confined within the vested/allotted block boundary/**existing mining lease** and Where the project area extends beyond the block boundary, a certificate of **Qualified person/ Accredited Mining Plan preparing agency (MPPA)**should be supported with a certificate of State Government mines and Geology department must be attached, which should specify (a) intent of the state government for grant of lease beyond the vested geological boundary/**existing mining lease**; (b) non-existence of Coal/ Lignite in the area beyond the vested/allotted geological block boundary/**existing mining lease** to rule out the issue of encroachment and use of coal bearing area (beyond the vested/allotted block boundary/**existing mining lease**) in the mining plan	
Annexure	Approval of the Company Board	
Annexure	Copy of earlier approval of mining plan.	
Annexure	Plan / chart showing schedule of Implementation of Mine closure activities (progressive and final closure) with duration of important activities	
Annexure	**Expert-Review Report carried out be an Accredited Mining Plan Preparing Agency (MPPA)**	

Details		(✔ / ✖)
Annexure	Other document (if any)	
Plates	Location plan	
Plates	Plan certified by **Qualified person/ Accredited Mining Plan preparing agency (MPPA)**if the project area is confined within the vested/allotted block boundary/**existing mining lease** and where the project area extends beyond the block boundary, a Plan certified by **Qualified person/ Accredited Mining Plan preparing agency (MPPA)**should be supported with a plan with cardinal co-ordinates duly certified by the Mines and Geology Department of the concerned State Government. **Plan in support of Annexure - II**	
Plates	Printed copy of the KML file superimposed in the recent (not older than one year from the base date) dated satellite Image duly certified by Accredited Agency should also be attached. Note: The soft copy of the KML file shall also be part of the Soft copy of the mining Plan.	
Plates	Cadastral plan showing approved block boundary vis-à-vis proposed/existing mining lease & Mine boundary superimposed over it in distinct color, showing land use and infrastructure etc..	
Plates	Geological plan showing all the boreholes drilled and proposed to be drilled showing allotted block boundary and required lease area	
Plates	Representative Graphic Litholog	
Plates	Surface Plan showing drainage system, Contour, preferably at 3m interval, location of BH (borehole)	
Plates	Conceptual plan showing infrastructure facilities including colony, boundary of mining area, mine entries, roads including road diversion alignment etc.	
Plates	Tentative land use plan showing land type (Govt., forest and tenancy land) with its data source	
Plates	Floor contour plan and seam folio plan, iso-grade plan	
Plates	Cross-section showing coal/lignite seam(s)	
Plates	Plan showing existing and proposed surface layout(s)	
Plates	Plan showing total coal thickness and overburden thickness and stripping ratio (in case of opencast (OC) Mines)	
Plates	Final stage quarry plan showing haul road alignment (in case of OC Mines)	

Details		(✔ / ✖)
Plates	Plan showing mode and location of entries and surface layouts (in case of underground (UG) Mines)	
Plates	Layout of the panel for each system (like Longwall, Continuous Miner, Bord& Pillar, road header etc.) should be given (in case of UG Mines)	
Plates	Layout of pillar extraction (in case of UG Mines)	
Plates	Support system (in case of UG Mines)	
Plates	Haulage and transport system (in case of UG Mines)	
Plates	Post mining land use plan	
Plates	Progressive mine closure plan/ stage plans	
Plates	Reclamation plan	

	Parameters	*Details*
1.1	**INTRODUCTION**	
1.1.1	Name of Coal / Lignite Block	
1.1.2	Name of the Coalfield/ Lignite Field	
1.1.3	Base date of Mining Plan/ Mine Closure Plan	
1.1.4	Linked End Use Plant	
1.1.5	Distance of End use plant from the pit head of the project in "km"	
1.1.6	Mode of Coal Transport	

1.2	**LOCATION, TOPOGRAPHY AND & COMMUNICATION**	
1.2.1	Location of coal deposit (District and State)	
1.2.2	Communication: PWD roads, railway lines, Air	
1.2.3	Availability of power supply, water etc.	
1.2.4	Prominent physiographic features, drainage pattern, natural water courses, rainfall data, highest flood level	
1.2.5	Important surface features within the project area and major diversion or shifting involved	

1.3	**DETAILS OF THE ALLOTTMENT AGREEMENT**	
1.3.1	Name the Allottee	
1.3.2	Details of allotment/vesting order	
1.3.3	Name and address of the applicant	
1.3.4	Name of the Previous allottee of the Block	
1.3.5	Starting Date of the Mine as per CMDPA	
1.3.6	Rated Capacity as per CMDPA	
1.3.7	Production Schedule as per opening permission (meeting provisions of CMDPA if any)	
1.3.8	End Use of Coal/Lignite as	

	Parameters	*Details*
	per allotment order if any	
1.3.9	Cardinal Points co-ordinates of the Block boundary	

ID	Latitude	Longitude
1	° ' " N	° ' " E
2	° ' " N	° ' " E
	° ' " N	° ' " E
	° ' " N	° ' " E

1.4 DETAILS OF THE PREVIOUS APPROVAL OF MINING PLAN

1.4.1	Date of Approval	
1.4.2	Conditions, if any	
1.4.3	Scheduled year of start of production	
1.4.4	Proposed year of achieving the targeted production	
1.4.5	Date of actual commencement of mining operations, if operations already started	
1.4.6	Likely date of mining operations, if operations not yet started & reasons for non-commencement of operations	
1.4.7	**Planned production and actual levels achieved in last 3 years (Coal in Mte, OB in MM^3, SR in MM^3/te)**	
1.4.8	**Statutory obligations vis-à-vis compliance status in a tabular form**	
1.4.9	Reasons for difference between the planned and actual production levels	

Year	Coal "**Mte**"		OB **MM^3**	**SR "MM^3/te"**
	UG	OC		

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

		Approved Mining Plan	**Proposed Mining Plan**
1.5.1	Block Area in "Ha"		
1.5.2	Block Area Projectised "Ha"		
1.5.3	Lease area "Ha"		
1.5.4	Project Area "Ha"		
1.5.5	Life of the Project "Yrs"		
1.5.6	Minimum and Maximum Depth of working "m"		

	Parameters	*Details*	
1.5.7	Net Geological Block "Ha"		
1.5.8	Production Target "MTPA"		
1.5.9	Seams Available "As per GR"		
1.5.10	Seams not considered for Mining with Reasons		
1.5.11	Gross Geological Reserve "Mt"		
1.5.12	Net Geological Reserve "Mt"		
1.5.13	Blocked Reserve "Mt"		
1.5.14	Minable Reserve "Mt"		
1.5.15	Extractable Reserves "Mt"		
1.5.16	% of Extraction/ recovery		
1.5.17	Reserve Depleted (till the base date) Reserves " Mt"		
1.5.18	Balance Extractable reserve "Mt"		
1.5.19	Average Grade		
1.5.20	OB in MM3		
1.5.21	SR MM3/te		
1.5.22	Mining Technology		
1.5.23	Coal Beneficiation envisaged		
1.5.24	Handling of Rejects		
1.5.25	Land use pattern " Ha"		
1	Excavation Area		
2	Top Soil Dump		
3	External Dump		
4	Safety Zone		
5	Other Use		
6	Infrastructure area		
7	Green Belt		
8	Undisturbed Area		
	Total		
1.5.26	**Reasons for revision**		

<table>
<tr><th></th><th>Parameters</th><th colspan="2">Details</th></tr>
<tr><td>2.1</td><td colspan="3">DETAILS OF THE BLOCK</td></tr>
<tr><td>2.1.1</td><td>Particulars of adjacent blocks: North, South, East, West</td><td>North :
South:</td><td>East:
West:</td></tr>
<tr><td>2.1.2</td><td>Location of the Block
District / State</td><td colspan="2"></td></tr>
<tr><td>2.1.3</td><td>Area of the Block "Ha"</td><td colspan="2"></td></tr>
<tr><td>2.1.4</td><td>Area of the geological block projectized "in Ha" (Area of the geological block considered for liquidation of coal reserve)</td><td colspan="2"></td></tr>
<tr><td>2.1.5</td><td>Balance area yet to be projectized "Ha"</td><td colspan="2"></td></tr>
<tr><td>2.1.6</td><td>Likely Reserve in the area yet to be projectized "Mte"</td><td colspan="2"></td></tr>
<tr><td>2.1.7</td><td>Cardinal Point Co-ordinates of the non-coal/lignite bearing area/existing mining lease outside the allotted Geological Coal/Lignite block

(Duly certified in line with para 1.9 of the Guideline, if fresh inning lease required)</td><td colspan="2">Cardinal Points Co-ordinates of the Proposed area outside the non-coal/lignite bearing area outside the allotted Geological Coal/Lignite block
<table>
<tr><th>ID</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1</td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td>2</td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td></td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td></td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>2.1.8</td><td>Certificate of Qualified person/ Accredited Mining Plan preparing agency (MPPA)if the project area is confined within the vested/allotted block boundary/existing mining lease and

Where the project area extends beyond the block boundary, a certificate of Qualified person/ Accredited Mining Plan preparing agency (MPPA)should be supported with a certificate of State Government mines and Geology department must be attached, which should specify (a) intent of the state government for grant of lease beyond the vested geological boundary; (b) non-existence of Coal/ Lignite in the area beyond the vested/allotted geological block boundary/existing mining lease to rule out the issue of encroachment and use of coal bearing area (beyond the vested/allotted block boundary/existing mining lease) in the mining plan

The Project area, Lease area and geological block area in "Ha" shall also be envisaged.</td><td colspan="2">Cardinal Points Co-ordinates of the Proposed LeaseArea considered in the Mining Plan
<table>
<tr><th>ID</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1</td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td>2</td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td></td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td></td><td>° ' " N</td><td>° ' " E</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
Note: Certificate should be given on conceptual plan envisaged in the proposed mining plan depicting OB area, infrastructure locations and cardinal point co-ordinates of the lease area, block area, project area;

In case the project boundary extends beyond the allotted geological block boundary/existing mining lease certificate of non-occurrence of coal should be clearly shown.

Certificate should envisage that the Geo-reference Co-ordinates considered for preparation of Mining plan is in line with Vesting/allotment order and does not encroach</td></tr>
</table>

	Parameters	*Details*
		any other adjacent block, and non-coal bearing certificate of the area in case any proposed infrastructure or OB dump is outside the block area;
2.1.9	KML file of the Proposed lease area, Project Area and geological block.	**Note:** Printed copy of the KML file superimposed in the recent (not older than one year from the base date) dated satellite Image duly certified by Accredited Agency should also be attached. Note: The soft copy of the KML file shall also be part of the Soft copy of the mining Plan.
2.1.10	Whether the proposed project area is confined within the allotted block boundary/**existing mining lease**, if not, the reason for deviation from allotted block boundary, may be given.	
2.1.11	If the project area extends outside the allotted block boundary/**existing mining lease**, confirmation about non-occurrence of coal/lignite in the area under reference needs to be furnished	
2.1.12	Type of the Project (Operating / under Implementation) and year of Starting.	
2.2	**EXPLORATION, GEOLOGY AND ASSESSMENT OF RESERVE**	
2.2.1	Regional geological set up of the area, local geology, structure, stratigraphic sequence, characteristics of the litho-logical units (coal seams /partings/overburden).	(In Maximum 500 Words)
2.2.2	Local geology, Structure, Stratigraphic sequence, Characteristics of the litho-logical units (coal seams /partings/overburden).	(In Maximum 500 Words)
2.2.3	Geological Block Area " Ha"	
2.2.4	Status of Exploration of the block	
2.2.5	Area covered by 'detailed' exploration within the block (sq. km)	
2.2.6	Whether entire lease area has been covered by 'detailed' exploration.	
2.2.7	No. of boreholes drilled within the block	
2.2.8	Whether any further exploration/study is required or suggested and time frame in which it is to be completed	
2.2.9	Year wise future programme of exploration	
2.2.10	Overall borehole density within the block (no./ sq. km) approx	
2.2.11	No of Seams available as per GR (Geological Report)	
2.2.12	Seams not considered for Mining with Reasons	
2.2.13	Dip of the Seam	
2.2.14	Seam wise thickness, depth and reserve	

	Parameters	Details
		
	Note : Break-up of the geological reserve for the block, considered in the proposed mining plan, to be projected later and that likely to be sterilized to be given seam wise along with the relevant plans.	
2.2.15	Methodology of reserves estimation (also mention if any software package has been used).	(In Maximum 500 Words)
2.2.16	Average GCV "KCal/kg"	
2.2.17	Gross Geological Reserve of the block "Mte"	
2.2.18	Net Geological Reserve of the block "Mte"	
2.2.19	Minable Reserve of the block "Mte"	
2.2.20	Blocked Reserve "Mte	
2.2.21	Corresponding extractable reserve of the block "Mte"	
2.2.22	Percentage of Extraction	
2.2.23	Reserve already depleted (Base date of Mining Plan)	
2.2.24	Balance Reserve (as on Base Date)	

	Parameters	*Details*
3.1	**MINING METHOD**	
3.1.1	Existing method of mining if the mine is under operation	
3.1.2	Proposed method of mining with justification on suitability of method of mining	• Seams to be worked, Choice of Mining Method and justification for Optimization of targeted capacity, sequence of mining, production scheduling, equipment configuration etc. • Behavior of coal roof & floor and support system for strata control including, Geo-technical investigations, rock mechanics study carried out already, if any, Scheme of mine development in tandem with production, transport and winding system in underground for coal and rock (if required) and personnel; Sources of stowing material (if applicable) • Brief description of all operation e.g. winning, transport, blasting, overburden removal and disposal, Life of the mine furnishing the assumptions made and the detailed computations • **Location of Mine Opening:** In case of opencast mines location of Access trench & reason for selection of site thereof the mining system (geometry and bench parameters and its sequence of development, along with a drawing) and quarry parameters (surface area, floor area), thickness range of each seam and parting, minimum and maximum depth. Quarry stage plans including OB dumps for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life) and post closure subsequently, also indicating the volume of excavation for coal and OB, area of excavation volume of internal and external dump and the area, in hectare, for internal and external dumps and height. Seam wise calendar programme of excavation, timeframe for commencement of Backfilling & justification therefor. • In case of underground mining, number and location, length & depth of shafts, inclines, and other mode of entries to be shown in the plan, e.g. Shaft 1, Shaft -2 etc.), HFL of the area, gassiness of the seams, Technology tie-ups if any. • Seams to be worked, method of working, optimization of coal roof & floor and support system for strata control including, Geo-technical investigations, rock mechanics study carried out already, if any, Scheme of mine development in tandem with production, extent of working for 1st year, 3rd year, 5th year, year of achieving rated capacity of the mine, Final year (i.e. at the end of mine life) and post closure, (all stages may be marked in distinct color in the working plan of each seam), transport and winding system in underground for coal and rock (if required) and personnel; Sources of stowing material (if applicable). • Adequacy of ventilation system taking into account the

<table>
<tr><th></th><th>Parameters</th><th>Details</th></tr>
<tr><td></td><td></td><td>development works with supporting calculations, specifications of Main Mechanical Ventilator, blasting requirements and requirement of explosives, pumping requirements and standby arrangements.
(In Maximum 2000 Words)</td></tr>
<tr><td>3.1.3</td><td>Coal production capacity proposed "Mtpa"</td><td></td></tr>
<tr><td>3.1.4</td><td>Justification for optimization Coal production capacity</td><td>(In Maximum 500 Words)</td></tr>
<tr><td>3.1.5</td><td>Calendar year from which the production will start</td><td></td></tr>
<tr><td>3.1.6</td><td>Year of Achieving rated production</td><td></td></tr>
<tr><td>3.1.7</td><td colspan="2">Tentative Coal production Plan "MT"
<table>
<tr><th colspan="2">Year</th><th colspan="3">Coal Production Schedule</th><th rowspan="2">OB "MM3"</th><th rowspan="2">SR</th></tr>
<tr><th>Year of Operation</th><th>Calendar Year</th><th>UG</th><th>OC</th><th>Total</th></tr>
<tr><td colspan="2">Up to 31.03.2019</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Y-1</td><td>2019-20</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Y-2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Y-3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Y-4</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Y-5</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Note: Calendar Plan / Production Plan for the entire life of the mine.</td></tr>
<tr><td>3.1.8</td><td colspan="2">Rated Capacity "Mtpa"</td><td></td></tr>
<tr><td></td><td>- By OC</td><td></td></tr>
<tr><td></td><td>- By UG</td><td></td></tr>
<tr><td></td><td>- Overall</td><td></td></tr>
<tr><td>3.1.9</td><td colspan="2">Life of the mine: "Years"</td><td></td></tr>
<tr><td></td><td>- By OC</td><td></td></tr>
<tr><td></td><td>- By UG</td><td></td></tr>
<tr><td></td><td>- Overall</td><td></td></tr>
<tr><td>3.1.10</td><td>Whether the proposed external OB dump site is coal/ lignite bearing: If so, whether coal/lignite below waste disposal area is extractable.</td><td></td></tr>
<tr><td>3.1.11</td><td>Whether negative proving for coal / lignite in the proposed site for OB dump/ infrastructure has been done.</td><td></td></tr>
<tr><td>3.1.12</td><td>Results of any investigation carried out for scientific mining, conservation of minerals and protection of</td><td></td></tr>
</table>

	Parameters	*Details*
	environment; future proposals.	
3.1.13	Type of Equipment/ HEMM proposed	

	Parameters	*Details*
4.1	**Safety Management**	
4.1.1	**Important safety aspects:** Major Risks and uncertainties to the project viz. Proximity to river, adjacent working, geo-mining disturbances, slope stability and remedial measures suggested. It should also include proposed overall slope of the quarry and OB dump, dump height, strata control, fire and spontaneous heating, gas monitoring, disaster management, danger from inrush of water etc.	(In Max 500 Words)
4.1.2	A Commitment from the Company Board that entire mining operation will be carried out as per the Statutory provision given under Mines Act 1952, Coal Mine Regulation 2017 and & wherever specific permission will be required the company will approach the concerned authorities.	(To be furnished as a Part of Annexure)

Chapter 5 : Infrastructure Facilities

	Parameters	*Details*
5.1	Mine infrastructure required e.g. Equipment maintenance planning, Office buildings, Workshop, Power supply arrangement, Water supply etc.	**(Tabular Form)** ***(Location to be shown in Conceptual Plan/Plates)***
5.2.	Power supply & illumination.	***(Max 500 Words)*** ***(Location to be shown in Plates)***
5.3	Drainage & Pumping : Assessment of Volume of Water for Pumping, Pumping Capacity and Pump Selection	***(Max 500 Words)*** ***(Location to be shown in Plates)***
5.4	Coal Handling Arrangement: Brief detail of the CHP/ Mode of Dispatch, Coal quality and Coal staking and handling arrangement	***(Max 500 Words)*** ***(Location to be shown in Plates)***
5.5	Coal washing and the proposed handling/ disposal of rejects.	***(Max 500 Words)*** ***(Location to be shown in Plates)*** Annual Raw coal Feed plan and product with reduction in ash% from feed to product must be furnished in a tabular form

	Parameters	*Details*
6.1	**LAND REQUIREMENT**	
6.1.1	Total Land requirement for the mine in "Ha"	***Break up of pre-mining land type*** (indicative) ***and source of data.***

Land Type		Area
Tenancy	Agricultural	
	Township	
	Grazing	
	Barren	
	Water Bodies	
	Road	
	Community/other use	
Govt Non Forest	Agricultural	
	Township	
	Grazing	
	Barren/other use	
Forest	Reserve	
	Protected	
FreeHold		
Total		

6.1.2 During mining Land use details:

Type	Land use (Proposed)	Land Use (End of Life)	Land Use (Post Closure)						
			Agricultural land	Plantation	Water Body	Public/ Company Use	Forest Land (Returned)	Undisturbed	Total
Excavation Area									
Backfilled Area									
Excavated Void									
Without plantation									
Top Soil Dump									
External Dump									
Safety Zone									
Haul Road between quarries									
Road diversion									
Diversion/ below River/Nala/canal									
Settling pond									
Road & Infrastructure area									
Rationalization area									
Garland drains									
Embankment									

	Parameters	Details
	Green Belt	
	Water Reservoir near pit	
	UG entry	
	Undisturbed/ Mining right for UG	
	Resettlement	
	Pit head power plant	
	Water harvesting	
	Agricultural land	
	Total	
6.1.3	Surface features over the block area	
6.1.4	No. of villages/Houses to be shifted	
6.1.5	Population to be affected by the project	
6.1.6	Proposed Rehabilitation programme	
6.2	**DETAILS OF LEASE**	
6.2.1	Status of Lease	
6.2.2	Existing Lease Area "Ha"	
6.2.3	Period for which Mining Lease has been granted/is to be renewed/ is to be applied for.	
6.2.4	Date of expiry of earlier Mining Lease, if any	
6.2.5	Whether the lease boundary/ required boundary is same as mentioned in the allotment order	
6.2.6	Lease Area (applied/ required) as per the Mining Plan under consideration (Ha)	
6.2.7	Whether the applied lease area falls within the allotted block	
6.2.8	Area (Ha) of lease which falls outside the delineated Block Boundary/Existing Mining Lease	
6.2.9	**Details of outside area:**	
	□ Whether forms part of any other coal block	
	□ Whether it contains any coal/lignite reserves	
	□ Purpose for which it is	

	Parameters	*Details*
	required, e.g. roads/ OB dumps/ service buildings/ colony/ safety zone/ others (specify)	
6.2.10	**Whether some part(s) of the allotted block has not been applied for mining lease.**	
	- Total area in Ha of such part(s).	
	- Total reserves in such part(s). (Mt)	
	- Brief reasoning for leaving such part(s)	

	Parameters	*Details*
7	**ENVIRONMENTAL MANANGEMENT**	
7.1	**Commitment from the project proponent that the company will comply Environment and Forest Condition stipulated in the respective clearances**	

	Parameters	Details
8.1	*Land Degradation and restoration Schedule*	

8.1.1 Tentative Land Degradation and Technical Reclamation (Commutative Area "Ha")

Year/Stage (Life of the mine plus post closure period)		Land Degraded				Technically Reclaimed Area			
		Excav	Dump (Extn + Top Soil)	Infra/ others	Total	Backfill	Dump (Extn + Top Soil)	Others	Total
Up to Base year *									
Y-1	19-20								
Y-3	21-22								
Y-5	23-24								
Y-10	28-29								
Y-15	33-34								
Y-20									
Y-25									
Y-30									
Y-33*									
Post Closure									
Y-36									

* - Considering Base year i.e. 2018-19 and life of 33 years in this case

Note: For the purpose of preparation of Stage plan and action plan for restoration and assessment of life of mine and escrow account, the year in which any activity over the proposed land is envisaged, should be considered as 1st year **i.e First year of development.**

Stages of reclamation and restoration of land should be given for 1st, 3rd, 5th and subsequently every five year for the entire life of the project and for 3 years post closure.

8.1.2 Tentative Biological Reclamation (Cumulative in "Ha")

Year/Stage (Life of the mine plus post closure period)		Biologically Reclaimed Area					Forest land (Return)	Un Disturbed/ To be left for Public/com Use	Total
		Agriculture	Plantation	Water Body	Public/ Company Use	Total			
Up to Base year *									
Y-1	19-20								
Y-3	21-22								
Y-5	23-24								
Y-10	28-29								
Y-15	33-34								
Y-20									

	Parameters	Details

Y-25										
Y-30										
Y-33*										
Post Closure										
Y-36										

Stages of reclamation and restoration of land should be given for 1st, 3rd, 5th and subsequently every five year for the entire life of the project and for 3 years post closure.

8.2	**Post Closure Water Quality management:**	**(Max 200 Words)** (Existing water bodies available in the lease hold area; Measures to be taken for protection of the same including control of erosion, sedimentation, siltation, water treatment, diversion of water course if any; Measures for protection of contamination of ground water from leaching etc;)
8.3	**Post Closure Air Quality management**	**(Max 200 Words)**

8.4 **Waste Management** (Figures in MM3) (Tentative)

Year/Stage (Life of the mine plus post closure period)		OB Removal (Cumulative)			External Dump (Cumulative)		Internal Backfilling (Cumulative)		Embankment (Cumulative)	
		Top Soil	OB	Total	Top Soil	OB	Top Soil	OB	Top Soil	OB
Up to Base year *										
Y-1	19-20									
Y-3	21-22									
Y-5	23-24									
Y-10	28-29									
Y-15	33-34									
Y-20										
Y-25										
Y-30										
Y-33*										
Post Closure										
Y-36										

* - Considering Base year i.e. 2018-19 and life of 33 years in this case

Stages at 1st, 3rd, 5th and subsequently every five year for the entire life of the project and for 3 years post closure

	Parameters	*Details*
8.5	**Top Soil Management – (Including Action plan for Top Soil management) (Tentative)**	

(All Figures are Cumulative and in MM3)

Year/Stage (Life of the mine plus post closure period)		Top Soil Removal Plan	Top Soil Used				
			Spreading Over Embankment	Spreading over Backfill area	Spreading over External OB Dump area	Used in Green Belt area	Total Utilised
Up to Base year *							
Y-1	19-20						
Y-3	21-22						
Y-5	23-24						
Y-10	28-29						
Y-15	33-34						
Y-20							
Y-25							
Y-30							
Y-33*							
Post Closure							
Y-36							

Stages at 1st, 3rd, 5th and subsequently every five year for the entire life of the project and for 3 years post closure

8.6	**Management of Coal Rejects.**	**(Max 150 Words)** **Proposal regarding future maintenance and dismantling of structures, slurry pond and rejects**
8.7	**Restoration of Land used for Infrastructure**	(Infrastructure to be retained and to be dismantled are to be presented in a tabular form envisaging measures to be taken for their physical stability and maintenance for the retained infrastructure facilities)
8.8	**Disposal of Mining Machinery**	
8.9	**Safety & Security**	**Measures to be implemented to prevent access to surface opening for underground working, excavation etc**
8.10	**Abandonment Cost and Financial Assurance**	
8.10.1	**Abandonment Cost: Cost of Activities to be taken up for closure of the mine**	

Parameters	Details

Head		Unit	Quantity	Rate Rs/ Unit	Amount "Rs. Cr"
Progressive closure	Water quality management	LS			
	Air quality management	LS			
	Waste Management	M Cum			
	Barbed wire fencing around dump	m			
	Barbed wire fencing around the Pit	m			
	Filling of Void - Rehanding of Crown Dump	MM3			
	Top Soil management	MM3			
	Technical and Biological Reclamation of Mined out of land and OB Dump	Ha.			
	Plantation over virgin area including green belt	Ha			
	Manpower Cost and supervision				
	Toe Wall around the dump	m			
	Garland drain	m			
	Garland Drain around the dump	m			
	Any other Activity				
Dismentaling of Infrastructure & Disposal/ rehabilitation of Mining machinery	Dismentaling of workshop	LS			
	Rehabilitation of the dismentaled Facilities	LS			
	Dismentaling of pumps and Pipes/ other facilities	LS			
	Dismentaling of stowing bunker, provisioning of pumps for borewell pumping arrangement				
	Dismentaling of UG equipment				
	Rearranging water pipeline to dump top park/ Agricultural land	LS			
	Dismentaling of Power lines				
Safety and security	Barbed wire fencing around dump				
	Barbed wire fencing around the Pit	m			
	Barbed wire fencing with masonary pillars				
	Concrete wall with Masonalry pillars around the pit	m			
	Securing air shaft and installation of borewell pump				
	Securing of incline				
	Concrete wall fencing around the water body				
	Boundary wall around the water body				
	Stabilisation(viz benching, pitching etc) of side walls of the water body				
	Toe Wall around the dump				
	Garland drain				
	Garland Drain around the dump				
	Drainage Channel from main Ob dump				
Technical and Biological Reclamation of Mined out of land and OB Dump	Filling of Void	Ha			
	Top Soil management	MM3			
	OB Rehandling for backfilling	MM3			
	Terracing, blanketing with soil and vegetation of External OB Dump	Ha			
	Paripheral road, gates, view point, cemented steps on bank				
	Expenditure on development of Agricultural land				
	Landscaping and Plantation	LS			
Post Closure management and supervision	Power Cost	LS			
	Post Mining Water quality management	LS			
	Post Mining Air quality management	LS			
	Subsidence monitoring for 5 years	LS			
	Waste Management	LS			
	Manpower Cost and supervision	LS			
Others	Enterprenuership development (vocational/skill development training for sustainable income of affected people				
	Golden Handshake / Retrenchment benefits to 100 employees of OC				
	Golden Handshake / Retrenchment benefits to 200 employees of UG				
	Onetime financial grant to societies / institutions /organisations which is dependent upon the project;				
	Provide jobs in other mines of the company				
	Continuation of other services like running of schools etc				
Total					

	Parameters	Details

8.10.2 Financial Assurance : Amount to be deposited in Escrow account as a security against the mine activities to be carried out for the closure of the mine

WPI as on	Apr-19		121.10
WPI as on base date *	Apr-19		121.10
Escalation rate of Closure cost			1.00

	UG	OC
Base Rate of Closure Cost "Rs. Crs./Ha"	0.015	0.09
Closure Cost "Rs. Crs/Ha"	0.015	0.09
Project Area	1000.00	885.53
Amount to be depostied into Escrow Account "Rs. in Crs"	15.00	79.70
Amount already deposited into Escrow Account "Rs. in Crs"	5.00	8.87
Net Amount to be depostied into Escrow Account "Rs. in Crs"	10.00	70.83

Rate of componding of Annual Closure Cost		5.00%
Balance Life of the project "in Yrs"	10	33
Annual Closure Cost	1.000	2.146
in Crs"		184.42

* - Base date considered in the example is 01.04.2019 and the life of theOC mine considered is 33 years and UG mine considered is 10 years. Rs 8.87 and RS 5.0 crs have been deposited in escrow account for OC and UG mine resepctively.

Amount to be deposited into Escrow

Year	OC	Year	UG	Total
1	2.146	1	1.000	3.146
2	2.254	2	1.050	3.304
3	2.366	3	1.103	3.469
4	2.485	4	1.158	3.642
5	2.609	5	1.216	3.824
6	2.739	6	1.276	4.016
7	2.876	7	1.340	4.216
8	3.020	8	1.407	4.427
9	3.171	9	1.477	4.648
10	3.330	10	1.551	4.881
11	3.496			3.496
12	3.671			3.671
13	3.854			3.854
14	4.047			4.047
15	4.249			4.249
16	4.462			4.462
17	4.685			4.685
18	4.919			4.919
19	5.165			5.165
20	5.424			5.424
21	5.695			5.695
22	5.979			5.979
23	6.278			6.278
24	6.592			6.592
25	6.922			6.922
26	7.268			7.268
27	7.631			7.631
28	8.013			8.013
29	8.414			8.414
30	8.834			8.834
31	9.276			9.276
32	9.740			9.740
33	10.227			10.227
Total	171.839		12.578	184.417

ANNEXURES

	Parameters	*Details*	
I	Copy of allotment order /Vesting order.	**Mandatory Document**	**Annexure - I**
II	Certificate of **Qualified person (QP) / Accredited Mining Plan preparing agency (MPPA)**if the project area is confined within the vested/allotted block boundary **/existing mining lease area** Where the project area extends beyond the block boundary, a certificate of **Qualified person (QP)/ Accredited Mining Plan preparing agency (MPPA)**should be supported with a certificate of State Government mines and Geology department must be attached, which should specify (a) intent of the state government for grant of lease beyond the vested geological boundary; (b) non-existence of Coal/ Lignite in the area beyond the vested/allotted geological block boundary/**existing mining lease** to rule out the issue of encroachment and use of coal bearing area (beyond the vested/allotted block boundary/**existing mining lease**) in the mining plan	**Mandatory Document** **Note:** Certificate should be given on conceptual plan envisaged in the proposed mining plan depicting OB area, infrastructure locations and geo-reference co-ordinates of the lease area, block area, project area; In case the project boundary extends beyond the allotted geological block boundary certificate of non-occurrence of coal should be clearly shown. Certificate should envisage that the Cardinal Point Co-ordinates considered for preparation of Mining plan is in line with Vesting/allotment order and does not encroach any other adjacent block, and non-coal bearing certificate of the area in case any proposed infrastructure or OB dump is outside the block area; The Project area, Lease area and geological block area in "Ha" shall also be envisaged.	**Annexure - II**
III	**Approval of the Company Board Approval**: ,	**Mandatory Document** **Board approval must Specify:** • Approvals of Mining Plan form the Board of the company giving undertaking for correctness of data used in preparation of Mining Plan; • Details of the **Qualified person (QP)/ Accredited Mining Plan preparing agency (MPPA)** with certification that the eligibility of Qualified person/	**Annexure - III**

	Parameters	Details	
		Accredited Mining Plan preparing agency has been verified. • Acceptance of the Mining Plan by the company board with recommendation for approval; • Undertaking that the mine will be developed as per the approval of the mining plan from Ministry of coal and all other approvals, as required will be obtained from relevant authorities • Commitment that entire mining operation will be carried out as per the Statutory provision given under Mines Act 1952, Coal Mine Regulation 2017, EP Act 1986 and FC Act 1980 and & wherever specific permission will be required the company will approach the concerned authorities. • Financial Assurance for implementation • Undertaking that the reclamation & rehabilitation work shall be carried out in accordance with the approved Mine Closure Plan and any modification /amendments which may be made in the mine Closure Plan by Ministry of Coal, from time to time. • Undertaking that the protective measures contained in the mine closure plan including reclamation and rehabilitation works will be carried out in accordance with the approved mine closure plan and final mine closure plan and undertake to submit a yearly report before 1st July of every year to the Coal Controller setting forth the extent of protective and rehabilitative works carried cut as envisaged in the approved mine closure plans (Progressive and Final Closure; • Undertaking that they will obtain a mine closure certificate from Coal Controller to the effect that the protective, reclamation and rehabilitation works carried out in accordance with the approved mine	

	Parameters	*Details*	
		closure plan/final mine closure plan and will surrender the reclaimed land to the State Government concerned.	
IV	Copy of earlier approval of mining plan.	**Mandatory Document**	**Annexure - IV**
V	Plan / chart showing schedule of Implementation of Mine closure activities (progressive and final closure) with duration of important activities	**Mandatory Document**	**Annexure - V**
VI	Non-refundable Application Fee	**Proof of the payment**	**Annexure - VI**
VII	Expert-Review Report	**Carried out by Accredited Mining Plan Preparing Agency (MPPA)**	**Annexure - VII**
VIII	Other document (if any)		**Annexure - ...**

PLANS/ PLATES

I	Location plan	
II	Plan certified by **Qualified person (QP) / Accredited Mining Plan preparing agency (MPPA)**if the project area is confined within the vested/allotted block boundary and Where the project area extends beyond the block boundary, a Plan certified by **Qualified person (QP) / Accredited Mining Plan preparing agency (MPPA)**should be supported with a plan with cardinal point co-ordinates duly certified by the State Government mines and Geology department. **Plan in support of Annexure - II**	**Plan in support of Annexure - II** **Note:** Certificate should be given on conceptual plan envisaged in the proposed mining plan depicting OB area, infrastructure locations and cardinal Point co-ordinates of the lease area, block area, project area; In case the project boundary extends beyond the allotted geological block boundary certificate of non-occurrence of coal should be clearly shown. Certificate should envisage that the cardinal point Co-ordinates considered for preparation of Mining plan is in line with Vesting/allotment order and does not encroach any other adjacent block, and non-coal bearing certificate of the area in case any proposed infrastructure or OB dump is outside the block area;
III	KML file of the Proposed lease area, Project Area and geological block.	**Note:** A printed copy of the KML file superimposed in the recent (not older than one year from the base date) dated satellite Image duly certified by Accredited Agency should also be attached. The soft copy of the KML file shall also be part of the Soft copy of the mining Plan.
IV	Cadastral plan showing approved block boundary vis-à-vis proposed/existing mining lease & Mine boundary superimposed over it in distinct color, showing land use and infrastructure etc.	
V	Geological plan showing all the boreholes drilled and proposed to be drilled showing allotted block boundary and required lease area	
VI	Graphic Litholog	
VII	Surface Plan showing drainage system, Contour, at minimum 3m interval, location of BH	
VIII	Conceptual plan showing infrastructure facilities including colony, boundary of mining area, mine entries, roads including road diversion alignment etc	
IX	Tentative land use plan showing land type (Govt., forest and tenancy land)	

<table>
<tr><td></td><td>with its data source</td><td></td></tr>
<tr><td>X</td><td>Floor contour plan and seam folio plan, ISO-grade plan</td><td><table><tr><td>Seam</td><td>Floor Contour</td><td>Seam Folio</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>XI</td><td>X-section showing coal/Lignite seams</td><td></td></tr>
<tr><td>XII</td><td>Plan showing existing and proposed surface layout</td><td></td></tr>
<tr><td></td><td>OPENCAST (OC) MINES</td><td></td></tr>
<tr><td>XIII</td><td>Plan showing total coal thickness and overburden thickness and stripping ratio</td><td>OC</td></tr>
<tr><td>XIV</td><td>Final stage quarry plan showing haul road alignment</td><td>OC</td></tr>
<tr><td></td><td>UNDER GROUND (UG) MINES</td><td></td></tr>
<tr><td>XV</td><td>Plan showing mode and location of entries and surface layouts</td><td>UG</td></tr>
<tr><td>XVI</td><td>Layout of the panel for each system (like Longwall, Continuous Miner, Bord & Pillar, road header etc.)</td><td>UG</td></tr>
<tr><td>XVII</td><td>Layout of pillar extraction</td><td>UG</td></tr>
<tr><td>XVIII</td><td>Support system</td><td>UG</td></tr>
<tr><td>XIX</td><td>Haulage and transport system</td><td>UG</td></tr>
<tr><td colspan="3">CLOSURE PLAN</td></tr>
<tr><td>XX</td><td>Post mining land use plan</td><td></td></tr>
<tr><td>XXI</td><td>Progressive mine closure plan/ stage plan indicating stages at 1st,3rd, 5th, year of achieving rated capacity of the mine and end of life (showing area, volume, dump height etc. for OC and seam-wise layout projects and ventilation system in UG)</td><td><table><tr><td>Year</td><td>Plate No</td></tr><tr><td>1st</td><td></td></tr><tr><td>3rd</td><td></td></tr><tr><td>5th</td><td></td></tr><tr><td>PRC</td><td></td></tr><tr><td>End of Life</td><td></td></tr></table></td></tr>
<tr><td>XXII</td><td>Reclamation plan</td><td></td></tr>
</table>

Appendix H

Coal Quality - Analytical Parameters

Sl. No.	Type of Analysis	Parameters							
A	Proximate Analysis	M%	Ash%	VM% (Dmmf)	FC%	Gross CV K Cal/Kg (Dmmf)	GCV Kcal/Kg	Grade	
B	Ultimate Analysis	C%	H%	N%	S% (Organic)	S% (In-organic)	O%	P%	
C	Ash Fusion Temperature (AFT)	(under mildly reducing atmosphere)							
		IDToC	HToC	FToC					
D	Petrographic Analysis	(Maceral composition %)							RO R
		Vitrinite (%)	Semi Vitrinite (%)	Exinite (%)	Inertinite (%)	Mineral Matter (%)	Vitrinite itype (%)	Distribution (%)	
		Mean Random Reflectance of vitrinite							
E	RQD & Physico-Mechanical Test.								
F	Ash Analysis (Composition)	Major	SiO_2, Al_2O_3, Na_2O, K_2O, CaO, MgO, total Fe as Fe_2O_3, P_2O_5, MnO, TiO_2, Cl and total S as SO_3.						
		Trace Ele	Individual quantitative determinations--Cd, Cu, Li, Pb, Zn, As, F, Hg, Sb, Se, U, and Th.						
G	Raw Coal Ash%		Clean Yield Ash%	Middlings Yield Ash%	Rejects (on 1.8 sp gr) Yield Ash%				
H	Caking Properties	CI Range Index	Grey King Coke type	Swelling Index	Gieslar plastometer test				
					i. Maximum fluidity ddpm				
					ii. Fluidity range				
I	Float-Sink / Washability Test Result								
J	Hardgrove Grindability Index (HGI)								
K	Low Temperature carbonization studies data								
L	Long Flame characteristics of coal								
M	Coke Reactivity Index (CRI)								
N	Coke Strength after Reaction (CSR)								
O	Swelling Index (SI)								

Analytical Parameters

There are mainly three kinds of analytical needs based on the type of deposit for quality evaluation is generally carried out-

A: Non-Coking Coal: Band by Band – all seams of all coring boreholes

a. Seam overall (proximate / as received and 60% RH)
b. 60% of all the intersections for each seam
c. C.V. for all seam overall samples
d. Ultimate analysis – at least one sample per sq. Km. for each seam
e. AFT – 3 samples /seam/block
f. Total sulphur – 3 samples/seam/block for low sulphur(upto1.0%) coal and 3/seam/sq.km for high sulphur* (>=1.0%)coal
g. Ash analysis – at least three samples per seam/block
h. Petrographic test - five samples per seam/block

- Total Moisture (TM %)
- Inherent Moisture (IM %)
- Ash Content (Ash %)
- Volatile Matter (VM %)
- Fixed Carbon (FC %) – by difference
- Total Sulphur (TS %)
- Gross Calorific Value (Kcal/Kg)
- Relative Density (RD) – index

B: Composite Samples: should be done after band-by-band sample analysis is complete. In addition to above sample composites are to be analyzed for:

- HGI index
- AFT (Reducing Atmosphere)
- Ultimate Analysis (H, C, N, O)
- Ash Analysis

C: Non Coal Sample: Inter-burden, Roof and Floor Samples selected at particular drill points

- Ash content (Ash %)
- Total Sulphur (TS %)
- Gross Calorific Value
- Relative Density (RD)

D: Coking Coal: Required some specific types of analysis in addition as follows -

- Coking properties (CT, SI)- five sample per seam
- Washability test- two samples per seam / composite sample
- Petrography test- all the sample available from washability test
- CSN index

- Maximum Fluidity
- P2O5 in Ash (%)
- P in coal (%)
- Form of Sulphur (if more than 1.5%)

E: Low Rank Coal:

In the low rank coal additional analysis like, EQM or Moisture holding capacity (if holding greater than 35 %). Analysis carried out for the composite samples selected at a particular drill point.

Annexures

Annexure 1

Application Form for NABET Initial Accreditation

(Kindly attach separate sheets if necessary, for more information)

Affix Passport Size photograph of the contact person

1. Name and Address of the Consultant organization

   a. Head Office

   _____

   b. Branch Office

   _____

2. Name of the Head of the Organization

   _____

3. Contact person details

   Name: _____

   Address: _____

   Tel No. _____ Mobile _____

   Email_____

4. Legal Status of the organization (please mark (√) the appropriate status)

   a) Public/Private/Government
   b) Company/Partnership/Proprietorship/Registered Society
   c) Research/Academic Institute
   d) Industry Association
   e) Others (please specify and attach necessary evidence)

5. Date of Registration / Incorporation (attach copy of certificate of incorporation/registration)

		DD			MM					YYYY

6. Established in Year _____

7. Services provided by the Organization _____

8. Number of Employees
   - Total
   - For Prospecting/ Exploration activities

9. Annual Income of the organization in Indian Rupees (attach balance sheet and IT returns for the last 3 years)

10. Organization Structure (with details of locations/associates etc.). For multi-functional organizations, the organization structure of the stream related to Prospecting/ Exploration work may be detailed out (**attach organization chart and other details**).

Abbreviation for Technical/ Functional Areas (APA):

Sl. No.	Functional area/ Services	Abbreviation
1	Geology	GEO
2	Geophysics	GP
3	Remote Sensing & GIS	RS
4	Surveying	SUR
5	Hydrogeology	HG

Abbreviation for Technical/ Functional Areas (MPPA):

Sl. No.	Functional area/ Services	Abbreviation
1	Mining Engineering	ME
2	Mining Geology	MG
3	Remote Sensing & GIS	RS
4	Civil, Electrical & Mechanical	CEM
5	Marketing & Finance	M & F
6	Socio Economics	SE
7	Environment, Health & Safety	EHS
8	Geotechnical (optional)	GT

11. Technical Expertise (full time employees and/ or empanelled) available with the organization (attach CVs) for experts' qualification, experience, exposure etc. In case of empanelled experts, please also attach declarations of Project Coordinators/ Technical Area Experts of their association with your organization and with others, in the format given in)

Project Coordinator

S. No	Name	In-house (GEO)/ Mining	CV Attached
			Y / N
			Y / N

Technical Area Expert/(s) Please use abbreviations mentioned above (Abbreviation for Technical/ Functional Areas) or Refer section 5.1.2 Technical Area Experts (TAEs) of Scheme:

S. No	Name	In-house (GEO)/ Mining	Area of Expertise	CV Attached
				Y / N
				Y / N

Technical Area Expert/(s) Please use abbreviations mentioned above (Abbreviation for Technical/ Functional Areas) or Refer section 5.1.2 Technical Area Experts (TAEs) of Scheme:

S. No	Name	In-house / Empanelled	Area of Expertise	CV Attached
				Y / N
				Y / N

Documentary evidence for the stated experience, exposure and training of the proposed PC Coordinators and Technical Area Experts to be provided to NABET Assessors during assessment.

12. How do you get field monitoring done to collect physical data?

In-house laboratory ☐ External laboratory ☐

12.1 If laboratory is accredited by NABL, please submit copies of the Accreditation scope certificate and the parameters accredited for. For other recognized laboratories, please submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.

13. Furnish details of Instruments/prediction model/software available:

S. No	Name of Instruments/ software	Upload Relevant Document/ License

14. Organization's experience in Geological Report/ Mining Plan preparation:

S. No	Name of Report	Client Name	Report Type	Period	Completion Certificate from Client	Upload Report

15.1 Geological Reports/ studies carried out in last three years -

a. Numbers of Geological Reports (GR)/ Mining Plans prepared ☐

b. Numbers of NOCs/ permissions got from MoC ☐

15.2 Enclose a copy of one Geological Report/ Mining Plan (soft copy) and list of reports/ plans prepared by the organization in the preceding two years from the date of application. ☐

15. Enclose a copy of Quality Management System Manual (Refer ***Appendix C*** of Scheme)

16. **Declaration:**

We have carefully read all NABET guidelines of Accreditation Scheme for Prospecting/ Exploration Agency (APA) & Mining Plan Preparing Agency (MPPA). The conformity of eligibility of the experts proposed, employment status of proposed experts to the requirements of the

Scheme, has been verified by us at our end.

We agree to code of conduct terms in clause no. 11.0. We confirm that the information provided in the application in support of the application is correct to the best of our knowledge and belief.

We authorize NABET to make any enquiry as deemed fit as part of the reviewing process. We understand that in case any information is found to be incorrect, it may result in rejection of this application and/or disqualification. We authorize NABET to utilize the information provided in this application for legal, research, training, sharing with concerned ministry and/or for any other purpose as may be deemed fit by NABET.

If accredited, we commit to notify NABET immediately of any changes in the status where information regarding such changes, if declared may affect the consideration for accreditation of the organization.

Signatures _____
Name (Authorized Signatory) _____
Designation _____
Organization _____
Date _____

Ensure that the following are enclosed with the application: -

	Documents to be enclosed	Yes/ No
1.	Filled in Application form with the photograph of the contact person (***Annexure 1***)	
2.	Application fees	
3.	Copy of the legal Status of the organization including the date of registration/ incorporation	
4.	Organization's Balance Sheet and Income Tax Returns, for the last three years (depending on date of registration of organization)	
5.	Organizational structure with respect to the people involved.	
6.	***Annexure 5*** - signed resume of Project Coordinator/s (PC) with photographs	
7.	***Annexure 5*** **-** signed resume of Technical Area Experts with photographs	
8.	***Annexure 12*** - Declaration of empanelled Technical Area Experts of their association with applicant organization AO or other organizations, if applicable. Also, a NOC, as applicable.	
9.	Copy of the certificate, scope of accreditation for NABL accredited laboratories and MoU/ Agreement	
10.	For Government recognised/ CSIR lab/ Institution lab/ University lab, submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.	
11.	QMS Manual meeting the requirements of ***Appendix C*** of the Scheme	
12.	Names of models/ software being used for generation/interpretation of data	
13.	Copies of promotional material, if any.	

Application to be submitted in soft only. Hard copies of documents to be submitted only if specifically asked for by NABET.

Annexure 2

Application Form for NABET Surveillance Assessment
(Kindly attach separate sheets if necessary, for more information)

Affix Passport Size photograph of the contact person

1. Name and Address of the Consultant organization

   a. Head Office

   _____

   b. Branch Office

   _____

2. Name of the Head of the Organization
   _____

3. Contact person details

   Name: _____

   Address: _____

   Tel No. _____ Mobile _____

   Email_____

4. Legal Status of the organization (please mark (√) the appropriate status)

   a) Public/Private/Government
   b) Company/Partnership/Proprietorship/Registered Society
   c) Research/Academic Institute
   d) Industry Association
   e) Others (please specify and attach necessary evidence)

5. Date of Registration / Incorporation (attach copy of certificate of incorporation/registration)

		DD			MM					YY

6. Established in Year _____

7. Services provided by the Organization

   a) Before initial accreditation_____
   b) After initial accreditation (new fields ventured in) _____

8. Initial Accreditation/Re-accreditation:
   a) Effective from (DD/MM/YYYY):

b) Previous Assessment -AC MoM - (DD/MM/YYYY):
c) Additional (Supplementary /Expansion of Scope) Assessment -AC MoM-(DD/MM/YYYY):

9. Annual Income of the organization in Indian Rupees (attach balance sheet and IT returns for the last 3 years)

Income	FY	FY	FY
Total Income (INR)			
Geological Reports preparation related Income (INR)			

10. Organization Structure (with details of locations/associates etc.). For multi-functional organizations, the organization structure of the stream related to Prospecting/ Exploration work may be detailed out (**attach organization chart and other details**).

Abbreviation for Technical/ Functional Areas (APA):

Sl. No.	Technical/ Functional Areas	Abbreviation
1	Geology	GEO
2	Geophysics	GP
3	Remote Sensing & GIS	RS
4	Surveying	SUR
5	Hydrogeology	HG

Abbreviation for Technical/ Functional Areas (MPPA):

Sl. No.	Technical/ Functional Areas	Abbreviation
1	Mining Engineering	ME
2	Mining Geology	MG
3	Remote Sensing & GIS	RS
4	Civil, Electrical & Mechanical	CEM
5	Marketing & Finance	M & F
6	Socio Economics	SE
7	Environment, Health & Safety	EHS
8	Geotechnical (optional)	GT

11. **Compliance to following conditions of Accreditation**

Sl. No.	Description	Yes/No	Attach doc evidence, if applicable
1.	Timely information and replacement of changes in approved experts		
2.	All applicable FAs are covered by approved experts/eligible candidates		
3.	Using only Government recognised/ NABL accredited/ CSIR lab/ Institution lab/		

	University lab recognized laboratories		
4.	Not utilizing any unapproved expert in Rep0rt preparation		
5.	Inclusion of names of Project Coordinator & TAEs Geological reports in the prescribed format		
6.	Timely payments to NABET		

12. Number of Employees/ Experts:
- Total Employees/ Experts:
- For Geological Reports preparation activities:

Experts	In-house	Empanelled	Total
Project coordinator (PC)			
Technical area experts (TAE)			
Team Members (TM)			
Total			

a) Project Coordinator available with the Organization (Approved/ Applied)

S. No	Name	In-house (GEO)/ Mining	Approved/ Applied	CV Attached
				Y / N
				Y / N

b) Technical Area Expert/(s) available with organization: Please use abbreviations mentioned above (Abbreviation for Technical/ Functional Areas) or Refer section 5.1.2 Technical Area Experts (TAEs) of Scheme:

S. No	Name	In-house (GEO)/ Mining	Area of Expertise	Approved/ Applied	CV Attached
					Y / N
					Y / N

c) Technical Area Expert/(s) available with organization: Please use abbreviations mentioned above (Abbreviation for Technical/ Functional Areas) or Refer section 5.1.2 Technical Area Experts (TAEs) of Scheme:

S. No	Name	In-house / Empanelled	Area of Expertise	Approved/ Applied	CV Attached

					Y / N
					Y / N

d) Team members available with organization:

(to make sure that the TM proposed meets the qualification requirements)

S. No	Name	In-house / Empanelled	Qualification/ Experience	Approved/ Applied	CV Attached
Project Coordinator					
					Y / N
With Technical Area Expert(s)					
					Y / N

e) New Candidates proposed:

Sl. No.	Name	In-house/ Emp.	Area of Expertise/ Qualification	CV Attached
Project Coordinator (PC)				
				Y/N
				Y/N
Technical Area Expert(s)				
				Y/N
				Y/N
Team Member				
				Y/N
				Y/N

Documentary evidence for the stated experience, exposure and training of the proposed Project Coordinator and Functional Area Experts to be provided to NABET Assessors during assessment

13. How do you get field monitoring done to collect baseline physical data?

In-house laboratory ☐ External laboratory ☐

a) Laboratories being use:

No.	Name of the laboratory*	Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab	Copy of MoU/ Agreement with laboratory/ defining scope of work

*****the following details are to be provided for each laboratory being used.

b) If laboratory is accredited by NABL, please submit copies of the Accreditation scope certificate and the parameters accredited for. For other recognized laboratories, please submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.

c) For all laboratories, please submit the copy of the agreement with the scope of coverage and validity period.

14. Furnish details of Instruments/prediction model/software available:

S. No	Name of Instruments/prediction model/software	Upload Relevant Document/ License

15. Organization's experience in Geological Report preparation:

S. No	Name of Report	Client Name	Report Type	Period	Completion Certificate from Client	Upload Report

15.1 Geological Reports/ studies carried out in last 18 months –

a. Numbers of reports prepared ☐

b. Numbers of NOCs/ permissions got from MoC ☐

15.2 Enclose a copy of one Geological Report (soft copy) and list of reports prepared by the organization in the preceding year from the date of Initial Accreditation. ☐

16. Enclose a copy of Quality Management System Manual (***Refer Appendix C of Scheme***)

17. **Declaration:**

We have carefully read all NABET guidelines of Accreditation Scheme for Prospecting/ Exploration Agency (APA) & Mining Plan Preparing Agency (MPPA). The conformity of eligibility of the experts proposed, employment status of proposed experts to the requirements of the Scheme, has been verified by us at our end. We agree to code of conduct terms in clause no. 11.0.

We confirm that the information provided in the application in support of the application is correct to the best of our knowledge and belief.

We authorize NABET to make any enquiry as deemed fit as part of the reviewing process. We understand that in case any information is found to be incorrect, it may result in rejection of this application and/or disqualification. We authorize NABET to utilize the information provided

in this application for legal, research, training, sharing with concerned ministry and/or for any other purpose as may be deemed fit by NABET.

If accredited, we commit to notify NABET immediately of any changes in the status where information regarding such changes, if declared may affect the consideration for accreditation of the organization.

Signatures _____
Name (Authorized Signatory) _____
Designation _____
Organization _____
Date _____

Checklist of Enclosures – Surveillance Assessment

Ensure that the following are enclosed with the application: -

Sl. No.	Documents to be enclosed	Yes/ No / Give Ref.
1.	For Government recognised/ CSIR lab/ Institution lab/ University lab, submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.	
2.	Copy of the Accreditation certificate, scope of accreditation and MoU/ Agreement for NABL accredited laboratories utilized	
3.	QMS Manual meeting the requirements of ***Appendix C*** of the Scheme	
4.	***Annexure 5*** and ***Annexure 12***: Resume, Experience Details and Declaration	
5.	***Annexure 5, Annexure 9*** – Resume and work details for approved Project Coordinator (PC), if s/he has carried out work after IA	
6.	***Annexure 5, Annexure 10*** – Resume and work details for approved TAE, if s/he has carried out work after IA	
7.	***Annexure 6*** - List of Geological Reports/ Mining Plans prepared/completed during the period between IA to SA giving requisite details	
8.	Soft copy of 2 Geological Reports/ Mining Plans (as identified by NABET) with declaration by names and signatures of experts involved in the preparation of Geological Reports/ Mining Plans	
9.	Copies of the minutes of MoC meetings for the Geological Reports/ Mining Plans	

Annexure 3

Application Form for NABET Re-Accreditation

(Kindly attach separate sheets if necessary, for more information)

Affix Passport Size photograph of the contact person

1. Name and Address of the Consultant organization

   a. Head Office

   _____

   b. Branch Office

   _____

2. Name of the Head of the Organization

   _____

3. Contact person details

   Name: _____

   Address: _____

   Tel No. _____ Mobile _____

   Email_____

4. Legal Status of the organization (please mark (√) the appropriate status)

   a) Public/Private/Government
   b) Company/Partnership/Proprietorship/Registered Society
   c) Research/Academic Institute
   d) Industry Association
   e) Others (please specify and attach necessary evidence)

5. Date of Registration / Incorporation (attach copy of certificate of incorporation/registration)

		DD			MM					YY

6. Established in Year _____

7. Services provided by the Organization

   a) Before initial accreditation_____
   b) After initial accreditation (new fields ventured in) _____

8. Initial Accreditation/Re-accreditation:
   a) Effective from (DD/MM/YYYY):

b) Previous Assessment -AC MoM - (DD/MM/YYYY):
c) Additional (Supplementary) Assessment -AC MoM-(DD/MM/YYYY):

9. Annual Income of the organization in Indian Rupees (attach balance sheet and IT returns for the last 3 years)

Income	FY	FY	FY
Total Income (INR)			
Geological Reports (GR) preparation related Income (INR)			

10. Organization Structure (with details of locations/associates etc.). For multi-functional organizations, the organization structure of the stream related to GW work may be detailed out (**attach organization chart and other details**).

Abbreviation for Technical/ Functional Areas (APA):

Sl. No.	Functional area/ Services	Abbreviation
1	Geology	GEO
2	Geophysics	GP
3	Remote Sensing & GIS	RS
4	Surveying	SUR
5	Hydrogeology	HG

Abbreviation for Technical/ Functional Areas (MPPA):

Sl. No.	Functional area/ Services	Abbreviation
1	Mining Engineering	ME
2	Mining Geology	MG
3	Remote Sensing & GIS	RS
4	Civil, Electrical & Mechanical	CEM
5	Marketing & Finance	M & F
6	Socio Economics	SE
7	Environment, Health & Safety	EHS
8	Geotechnical (optional)	GT

11. **Compliance to following conditions of Accreditation**

Sl. No.	Description	Yes/No	Attach doc evidence, if applicable
1.	Timely information and replacement of changes in approved experts		
2.	All applicable FAs are covered by approved		

	experts/eligible candidates		
3.	Using only Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab		
4.	Not utilizing any unapproved expert in Report preparation		
5.	Inclusion of names of Project Coordinator & TAEs in Geological Reports (GR) in the prescribed format		
6.	Timely payments to NABET		

12. Number of Employees/ Experts:
   - Total Employees/ Experts:
   - For Geological Reports (GR)/ Mining Plan preparation activities:

Experts	In-house	Empanelled	Total
Project coordinator (GEO)/ Mining			
Technical area experts (TAE) (GEO)/ Mining			
Team Members (TM)			
Total			

a) Project Coordinator available with the Organization (Approved/ Applied)

S. No	Name	In-house (GEO)/ Mining	Approved/ Applied	CV Attached
				Y / N
				Y / N

b) **Technical Area Expert/(s) available with organization:** Please use abbreviations mentioned above (Abbreviation for Technical/ Functional Areas) or Refer section 5.1.2 Technical Area Experts (TAEs) of Scheme:

S. No	Name	In-house (GEO)/ Mining	Area of Expertise	Approved/ Applied	CV Attached
					Y / N
					Y / N

a) **Technical Area Expert/(s) available with organization:** Please use abbreviations mentioned above (Abbreviation for Technical/ Functional Areas) or Refer section 5.1.2 Technical Area Experts (TAEs) of Scheme:

S. No	Name	In-house / Empanelled	Area of Expertise	Approved/ Applied	CV Attached
					Y / N
					Y / N

b) **Team members available with organization:**
(to make sure that the TM proposed meets the qualification requirements)

S. No	Name	In-house / Empanelled	Qualification/ Experience	Approved/ Applied	CV Attached
Project Coordinator					
					Y / N
With Technical Area Expert(s)					
					Y / N

c) **New Candidates proposed:**

Sl. No.	Name	In-house/ Emp.	Area of Expertise/ Qualification	CV Attached
Project Coordinator (Prospecting)				
				Y/N
				Y/N
Technical Area Expert(s)				
				Y/N
				Y/N
Team Member				
				Y/N
				Y/N

Documentary evidence for the stated experience, exposure and training of the proposed Prospecting/ Geological report preparing Coordinators and Technical Area Experts to be provided to NABET Assessors during assessment

13. How do you get field monitoring done to collect baseline data?

In-house laboratory ☐ External laboratory ☐

a) Laboratories being used since IA/SA/RA:

No.	Name of the laboratory*	Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab	Copy of MoU/ Agreement with laboratory/ defining scope of work

*the following details are to be provided for each laboratory being used.

b) If in-house arrangement, then please provide details.

c) If laboratory is accredited by NABL, please submit copies of the Accreditation scope certificate and the parameters accredited for. For other recognized laboratories, please submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.

d) For all external laboratories, please submit the copy of the agreement with the scope of coverage and validity period.

14. Furnish details of Instruments/prediction model/software available:

S. No	Name of Instruments/prediction model/software	Upload Relevant Document/ License

15. Organization's experience in Geological Report (GR)/ Mining Plan preparation:

S. No	Name of Report	Client Name	Report Type	Period	Completion Certificate from Client	Upload Report

15.3 Out of the number of Geological Reports/ Studies carried out in last 3 years –

a. Numbers of reports/ Mining Plans prepared ☐

b. Numbers of NOCs/ permissions got from MoC ☐

15.4 Enclose a copy of one Geological Report/ Mining Plans (soft copy) and list of reports/ plans prepared by the organization in the preceding year from the date of Initial Accreditation. ☐

16. Enclose a copy of Quality Management System manual meeting the requirements of *Appendix B* of the Scheme. Also confirm if NCs / Obs. issued during SA on QMS have been addressed including closure action on each of these. (***Refer Appendix C of Scheme***)

17. **Declaration:**

We have carefully read all NABET guidelines of Accreditation Scheme for Prospecting/ Exploration Agency (APA) & Mining Plan Preparing Agency (MPPA). The conformity of eligibility of the experts proposed, employment status of proposed experts to the requirements of the Scheme, has been verified by us at our end. We agree to code of conduct terms in clause no. 11.0.

We confirm that the information provided in the application in support of the application is correct to the best of our knowledge and belief.

We authorize NABET to make any enquiry as deemed fit as part of the reviewing process. We understand that in case any information is found to be incorrect, it may result in rejection of this application and/or disqualification. We authorize NABET to utilize the information provided in this application for legal, research, training, sharing with concerned ministry and/or for any other purpose as may be deemed fit by NABET.

If accredited, we commit to notify NABET immediately of any changes in the status where information regarding such changes, if declared may affect the consideration for accreditation of the organization.

Signatures _____
Name (Authorized Signatory) _____
Designation _____
Organization _____
Date _____

Checklist of Enclosures – Re-accreditation

Ensure that the following documents are enclosed/uploaded with the application: -

Sl. No.	Documents to be enclosed	Yes/ No/ Give Ref
1	For Government recognised/ CSIR lab/ Institution lab/ University lab, submit a copy of the relevant Notification/ Document and also a copy for assessing the scope recognition.	
2	Copy of the Accreditation certificate, scope of accreditation and MoU/ Agreement for NABL accredited laboratories utilized	
3	QMS Manual meeting the requirements of ***Appendix C*** of the Scheme	
4	***Annexure 5*** and ***Annexure 12***: Resume, Experience Details and Declaration	
5	***Annexure 5, Annexure 9*** – Resume and work details for approved Project Coordinator (PC), if s/he has carried out work after SA	
6	***Annexure 5, Annexure 10*** – Resume and work details for approved TAE, if s/he has carried out work after SA	
7	***Annexure 6***- List of Geological Reports/ Mining Plans prepared/completed during the period between SA to RA giving requisite details	
8	Soft copy of 2 Geological Reports/ Mining Plans (as identified by NABET) with declaration by names and signatures of experts	

Annexure 4

Application Form for NABET Supplementary Assessment
(Kindly attach separate sheets if necessary, for more information)

Affix Passport Size photograph of the contact person

1. Name and Address of the Consultant organization

   a. Head Office

   _____

   b. Branch Office

   _____

2. Name of the Head of the Organization
   _____

3. Contact person details

   Name: _____

   Address: _____

   Tel No. _____ Mobile _____

   Email_____

4. Reason **for applying**:

Sl. No.	Reason for applying	Abbreviation	Assessment norms
1	Addition / Modification in scope of approved experts	EXP	IA
2	New candidates: Replacement of approved experts (PC/TAE)	RPL	IA
3	Re-proposing the candidates three months after the last assessment (Refer NABET letter	RPR	As per the last assessment norm
4	Absent during last Office assessment (Refer email sent to NABET by AO /ACO)	ABS	As per the last assessment norm
5	To be assessed (Refer AC MoM)	TBA	NABET to inform

*Application must be submitted along with the applicable fee (see ***Appendix D*** of the Scheme).

- Amount paid
- Mode of payment and number (NEFT/ RTGS / IMPS)
- Date of payment

NEFT/ RTGS / IMPS to be done in favour of 'Quality Council of India' New Delhi.

5. Candidates proposed as:

A. Project coordinator (GEO)/ Mining –

(Enclose ***Annexure 2***)

Sl. No.	Name of the candidate	IH/ Emp	Reason for applying (Ref point 4 above)	Areas applied	Areas already approved

B. Technical Area Expert –

(Enclose ***Annexure 2***)

Sl. No.	Name of the candidate	IH/ Emp	Reason for applying (Ref point 4 above)	TAs applied	TAs already approved

Note:

1. Candidates who were not approved in last assessment and now re-proposed, must give a separate note on additional experience/ training/ knowledge acquired since last assessment supported by relevant documents.
2. **The candidates who have been re-proposed need to submit**

- **PC - *Annexure 9***
- **TAE - *Annexure 10.***

6) **Declaration**

I have carefully read all NABET guidelines of Accreditation Scheme for Prospecting/ Exploration Agency (APA) & Mining Plan Preparing Agency (MPPA). The eligibility criterion including academic as well as professional qualifications and experience claimed by all the candidates whose resume are enclosed with the application form are verified and endorsed by me. I hereby confirm that the true copy of Marks Sheets/Certificates for essential educational qualification candidates proposed, if asked for by NABET, would be duly verified by me before submission. I confirm that the information provided in the application form is correct to the best of my knowledge and belief.

I authorize NABET to make any enquiry as deemed fit as part of the reviewing process. I understand that in case any information is found to be incorrect; it may result in rejection of this application and/or disqualification.

NABET will treat the documents submitted by AO in confidence. However, the same may be used by NABET for research purpose, legal requirement and for submission to concerned ministry. Such information will not be shared with any other organizations without written permission of the AO.

If accredited, the organization commits to abide by the conditions of accreditation and notify NABET immediately for any changes in the status which have bearings on accreditation of the organization.

Signature:
Name (authorized signatory):
Designation:
Date:

Annexure 5

(**Resume Format)**

(For Project Coordinator/ Technical Area Experts)

1) Mr./Ms./Dr.

_____

(First name) (Middle name) (Last name)

Affix latest passport size photograph of the applicant

2) Date of birth _____

3) PAN _____

4) Role in the organization (please tick):

In-house expert (IH)	☐	Empanelled expert (Emp.)	☐
Project Coordinator	☐	Technical Area Expert (TAE)	☐

ii. Area(s) Applied_____

5) Contact details _____

_____

_____

_____Pin Code_____

6) Tel. No. _____

7) Fax No. _____

8) Email address _____

9) Office address _____

_____

_____

_____Pin Code_____

10) Academic Qualification (Graduation and above):

Period (Year)	Name of the University	Degree	Subjects	Grade / % Marks

11) Registered/recognized training courses attended:

Sl. No.	Title of the course	Conducted/organized by (name and address)	Dates		Result
			From	To	

12) Membership of Professional Bodies: -

Sl. No.	Professional body (name and address)	Membership	Period of validity

13) Experience (write in chronological order with most recent experience listed first):

A. General (in brief):

Period (From – to)	Organization with address	Designation	Type of Experience (A/B/C/D)	Specific details of experience for type A/B/C/D (not more than 25 words for each) as applicable
			Industrial Exp. A GR/ Mining Plan Assignments B Teaching / Ph.D. C Other D	

14) **Declaration by the applicant**

I hereby declare that the above information relating to my education and experience is correct. I do understand that any incorrect information will result in disqualification of my candidature and accreditation of the organization with NABET.

Signature _____ Date (DD/MM/YYYY) _____

15) **Declaration by the employer**

The above information in relation to Dr./Mr./Ms. …… has been verified and found to be correct. I understand that in case the information is found to be incorrect it may result in disqualification of the organisation under the Scheme.

Signature:
Name (authorized signatory):
Designation:
Date:

Annexure 6

List of Geological Reports On-going/Completed
(Since Last Assessment)

Name of Consultant Organization: _____

Sl.No.	Name of project with location	Name of the client	Name of Project coordinator (PC)	Status of Geological Report: a. On going b. Draft Report ready c. Final Report submitted to Client d. Cleared by MoC	Cost: a. Project Cost: b. Cost of Report: c. Cost of Baseline Monitoring: d. Budget for mitigation measures:
i	ii	iii	iv	v	vi
1					
2					
3					
4					
5					

Annexure 7

Details of Laboratories Utilized

Sl. No.	Name of the laboratory with complete address	Accreditation/Recognition status with Scope				
		Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab	Data Analysis	Basic Parameters	Additional Parameter for comprehensive	Valid till
i	ii	iii	iv	v	vi	vii
1						
2						
3						

Note:

- Also mention the details of assessment conducted recently for which results are awaited.

For SA application details to be furnished between IA and SA and for RA application between SA and RA.

Annexure 8

Declaration by Experts contributing to the Geological Report/ Mining Plan Preparation

I, hereby, certify that I was a part of the team in the following capacity that developed the above Geological Report/Mining Plan

Project coordinator (GEO/ Mining):.....

Name: ……

Signature and Date:.....

Period of involvement: .....

Contact information: .....

Functional area experts:

S. No.	Area	Name of the expert/s	Involvement (period and task**)	Signature and date
1				
2				
3				
4				

*One TM against each TAE may be shown

**Please attach additional sheet if required

Declaration by the Head of the accredited consultant organization/ authorized person

I, ..., hereby, confirm that the above-mentioned experts prepared the Geological Report ..... I also confirm that Project coordinator (GEO/ Mining) has gone through the report, and the consultant organization shall be fully accountable for any misleading information.

It is certified that no unethical practices, plagiarism involved in carrying out the work and external data / text has not been used without proper acknowledgement while preparing this Geological Report.

Signature:.....

Name:

Designation:.....

Name of the consultant organization: .....

NABET Certificate No. & Issue Date: ……

Annexure 9

Project Coordinator – Experience since last approval

1) Name: .....

2) Area approved (mention exact description as in NABET certificate/ letter):

Sl. No.	Name of Area	Vide NABET MoM dated
1		
2		
3		
4		
5		

3) Work carried out since last assessment

Geological Reports/ Mining Plan Preparation involved in					
Sl. No.	Area	Name of project, client, capacity	Site visits No. and duration (days) (Field log book to be maintained and presented during assessment)	Impacts identified (not more than 5)	Corresponding Mitigation Measures
i	ii	iii	iv	v	vi
Work carried out for the present ACO					
1					

NOTE: (*) Details to be provided for each area in separate rows

Annexure 10

Technical Area Expert – Experience since last approval

1) Name: .....

2) Area/s approved (mention exact description as in NABET certificate/ letter):

Sl. No.	Name of Area	Vide NABET MoM dated
1		
2		
3		
4		
5		

3) Work carried out since last assessment

Geological Reports/ Mining Plan Preparation involved in					
Sl. No.	**Area**	**Name of project, client, capacity**	**Site visits No. and duration (days)** **(Field log book to be maintained and presented during assessment)**	**Impacts identified (not more than 3) and whether these were quantified (if yes, give one example)**	**Corresponding Mitigation Measures**
i	**ii**	**iii**	**iv**	**v**	**vi**
Work carried out for the present ACO					
1					

NOTE: (*) Details to be provided for each area in separate rows

Annexure – 11

Self-Assessment Checklists

To judge the readiness of an organization for applying and subsequent assessment by NABET assessors including interactions with candidates proposed, a Self- assessment checklist has been developed for IA, SA and RA for use by the applicant organisation -

1) Initial Accreditation –

a. Application process –

i. Have information pertaining to the organization's profile been included in Application Form?

ii. Is the ***Annexure 5*** for all candidates proposed been properly filled?

iii. Has the application form and all CVs submitted are duly signed?

iv. Does the organization have minimum 2 eligible in-house/empanelled experts (1 PC and 1 TAE) as per the requirements of the Scheme?

v. Do all proposed candidates for PC fulfil the criteria of NABET Scheme?

vi. Do all proposed candidates for TAE fulfil the criteria of NABET Scheme?

vii. Do the candidates proposed as PC have the requisite experience?

viii. Do the candidates proposed as TAE have the experience in the Technical area/s?

ix. Has any candidate been proposed for more than one technical area?

x. Has any full-time employee with other organizations (except from university, institution and NGO) been proposed as an PC or TAE?

xi. Does the organization have MoU with Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab in-house/external laboratory for data analysis?

xii. Does the organization have the valid certificate of accreditation/Notification for the lab?

xiii. Does the organization have valid MoU signed with the external lab?

xiv. Does the QMS address the procedures given in ***Appendix C*** of the Scheme?

b. Assessment process

i. Is the Organization ready for office assessment by NABET – have all candidates read the NABET scheme specially the assessment criteria including the aspects on which the PC and TAEs will be assessed, field investigation requirements (sampling, preservation, laboratory processes) and expected functions of PCs and TAEs?

ii. Are the candidates aware of the QMS developed by the organization? Is the implementation of QMS documented?

iii. Does the organisation have arrangements for improving the knowledge/skills of its personnel through trainings/exposures?

iv. Does the organization have all necessary documentary evidence to be shown to NABET assessors during assessment?

Self-Assessment Result

If all questions answered/followed	Apply right now	Ready for applying and assessment
If 50% of questions answered/followed	Apply after addressing the unanswered ones.	Partially ready.
If less than 50% questions are answered/followed	Need To focus on the accreditation guidelines	Not ready for applying and assessment

2) Surveillance Assessment –

The Questions of the IA process as mentioned above are valid, as appropriate. In addition, the following Questions may be answered –

a. Application process –

i. Have all NC's and observations raised during IA been properly closed? Are sufficient documentary evidences available for the same?

ii. Does the Organization have complete details for PCs and TAEs as per ***Annexure 9 and 10*** for inclusion in the SA application?

iii. Has the Organization used Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab for the Studies carried out after IA?

iv. Have all conditions of accreditation as mentioned in NABET's letter, been complied with?

v. Has NABET been informed on time of any approved expert leaving the organization and arranged replacement?

vi. Has a clear list been prepared of experts approved in IA and subsequently and those proposed with the SA application?

vii. Has the organization used any unapproved person or approved experts after initial accreditation?

viii. Has the signed declaration of experts involved and countersigned by the CEO in the prescribed format been included in the reports?

ix. Does the organization have the quality assurance procedures for collection, preservation and transfer of samples and have implemented the same?

x. Does the organization have procedure and followed the same for ensuring that the Government recognised/ NABL accredited/ CSIR lab/ Institution lab/ University lab follows its quality control process to ensure correctness of the tests carried out?

b. Accreditation process -

i. Have experts visited site and does the organisation have proper log books for the site visits?

ii. Has the organisation filled complete details of all laboratories utilized after IA?

iii. Does the organization have quality assurance procedure for primary and secondary data collection and implemented the same?

iv. Has the organization-maintained copy of an internal QMS audit report and the last Management Review of the QMS?

v. Does the organization have programs for capacity building for PCs/TAEs in terms of (a) training programmes attended, (ii) upgrading the educational qualification, (iii) others

vi. Does the organization have record of NABET AC MoM of all approved candidates?

Self-Assessment Result

If all questions answered/followed	Apply right now	Ready for applying and assessment
If 50% of questions answered/followed	Apply after addressing the unanswered ones.	Partially ready.
If less than 50% questions are answered/followed	Need To focus on the accreditation guidelines	Not ready for applying and assessment

3) **Reaccreditation** -

The Questions of the IA process as mentioned above will be valid, as appropriate. In addition, the following questions may be answered –

i. Have all NCs and observations of SA have been closed?

ii. Does the organization have all information asked for about laboratories used after SA?

iii. Does the organization have required information on how the experts are keeping their knowledge updated?

iv. Does the organization have requisite details of the earlier assessments of experts?

v. Has the organization made all payments due to NABET?

vi. Has the organization taken steps towards capacity building for PCs/TAEs/ lab technicians through trainings, improved facilities etc

vii. Has the organization implemented QMS and made improvements in the same?

viii. Did the organization use only approved experts of right category for Geological Report preparation?

ix. Did the organization check its overall performance from IA to till now?

If all questions answered/followed	Apply right now	Ready for applying and assessment
If 50% of questions answered/followed	Apply after addressing the unanswered ones.	Partially ready.
If less than 50% questions are answered/followed	Need To focus on the accreditation guidelines	Not ready for applying and assessment

Annexure 12

Declaration for Empanelled Experts of

their association with the applicant organization and others

(to be signed within 60 days preceding the date of application for accreditation)

This is to confirm that I _____ am currently involved with the following Prospecting/ Exploration, Mining Plan projects:

1) With the Applicant Organization -

   a. As a Project Coordinator (GEO/ Mining)

Sl. No.	Name of the project	Period	Technical areas as per Scheme

   b. As a Technical area expert

Sl. No.	Name of the project	Period	Technical areas as per Scheme

2) With another organization/s –

   a. As a Project Coordinator (PC)

Sl. No.	Name of the organization	Name of the project	Period	Technical areas as per Scheme

b. As a Technical area expert

Sl. No.	Name of the organization	Name of the project	Period	Technical areas as per Scheme

3) Involvement as an expert in NABET Prospecting Agency Accreditation Scheme (for projects in hand)

Sl. No.	Name of the organization	Technical areas as per Scheme	If interviewed by NABET (Date)	Duration of association with the organization(period)

I hereby confirm that I am involved only with……. (mention the number) consultants.

Name _____

Signature _____

Date _____

Present Status (Please tick the appropriate one)

a. Freelancer: Yes/No

b. Working: In-house employee

(If yes, name of organization ……..……)

Address for Correspondence:

.....

.....

.....

Declaration by the applicant organization

I hereby confirm that I have applied complete due diligence on my part in ascertaining the appropriateness of the information furnished above by the expert ……. S/he has been empanelled with /employed in our organization from .....(month)……(year).

Name _____

Designation_____

Organization _____

Signatures and Date_____

Annexure 13

Declaration of Accepting NABET's Code of Conduct

C.E.O. / Head of Consultant Organisation

This is to confirm that I ……., working as CEO/ Head of …….agree with the Code of Conduct (Section 11.0 of Scheme), conditions of accreditation of NABET and give an undertaking that I would abide by the stated conditions for all activities pertaining to Consultancy Services/ Activities. I also understand that awarding/ continuation of accreditation of my organization is subject to continual compliance to conditions of accreditation.

Name ……
Designation ……
Date ……
Signature ……

Annexure 14

Application Form for information on Team Member
(Kindly attach separate sheets if necessary, for more information)

Affix Passport Size photograph of the contact person

1. Name and Address of the Consultant organization

   a. Head Office

   _____

   b. Branch Office

   _____

2. Name of the Head of the Organization
   _____

3. Contact person details

   Name: _____

   Address: _____

   Tel No. _____ Mobile _____

   Email_____

4. Team Members proposed

Sl	Name	Qualification[#]	Technical Area	Name of the project associated with	Approved Sr. Expert	Specific nature of work to be assigned
With Project Coordinator						
With Technical Area Expert						

[#] Qualification – Bachelor degree in Technical subjects and Master's degree in Science, Humanities and other subjects, year of passing and name of university

Declaration by the employer

We have carefully read the provisions in respect of 'Team Members' in the NABET's Accreditation Scheme for Prospecting/ Exploration Agency (APA) & Mining Plan Preparing Agency (MPPA) and commit to abide by the same. The conformity of eligibility of the candidates proposed as Team Member in respect of qualification and other aspects has been verified by us at our end. We confirm that the information provided in the application is correct to the best of our knowledge and belief.

We understand that in case the information provided is found wrong/mis-leading, it may result in cancellation of accreditation granted to the organization.

Signature _____
Name (authorized signatory) _____
Designation _____
Organization _____
Date _____

For Further Details Contact:
National Accreditation Board for Education and Training (NABET)
Quality Council of India, Institution of Engineering Building,
2nd Floor, Bahadur Shah Zafar Marg, New Delhi – 110002, India
Tel: +91-11-2337 9321, 2337 9821, 2337 0567 Fax. No: 2337 9621
Email: akjha.nabet@qcin.org ; jagminder.nabet@qcin.org