भारत सरकार

GOVERNMENT OF INDIA

खान मंत्रालय

MINISTRY OF MINES

भारतीय खान ब्यूरो

INDIAN BUREAU OF MINES

IBM Manual for Appraisal of Final Mine Closure Plan 2017

(Exclusively for leases expiring on 31.03.2020 or on expiry of 50 years from the date of grant of mining lease)

Nagpur

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Project Credit

Overall Guidance

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FINAL MINE CLOSURE PLAN EXCLUSIVELY FOR THE LEASES EXPIRING ON 31.03.2020 OR UPON EXPIRING 50 YEARS FROM THE DATE OF GRANT OF MINING LEASE

A. Regulatory background

Sub-section (1) of Section 18 of the Mines and Minerals (Development and Regulation) Act 1957 empowers Central Government to make such rules as may be necessary for the conservation and systematic development of minerals in India and for the protection of environment by preventing or controlling any pollution which may be caused by prospecting or mining operations. Apart from other matters such Rules can provide guidelines for the disposal or discharge of waste slime or tailings arising from any mining or metallurgical operations carried out in a mine; and the manner in which and the authority by which directions may be issued to the owners of any mine to do or refrain from doing certain things in the interest of conservation or systematic development of minerals or for the protection of environment by preventing or controlling pollution which may be caused by prospecting or mining operations

Mines and Minerals (Development and Regulation) Amendment Act'2015

1. As per Section 8A (6), the period of lease granted before the date of commencement of the MMDR Amendment Act'2015 i.e. 12th January,2015, where the mineral is used for other than captive purpose, shall be extended and be deemed to have been extended upto a period ending on 31st March,2020 with effect from the date of expiry of the period of renewal last made or till the completion of renewal period, if any, or a period of fifty years from the date of grant of such lease, whichever is later subject to the condition that all the terms and conditions of the lease have been complied with.

Mineral Conservation and Development Rules'2017

1. As per Rule 21(4), the holder of a ML shall not abandon a mine unless a FMCP duly approved by the competent authority, is implemented, and for this purpose, the lessee shall be required to obtain a certificate from the authorized officer, as the case may be, to the effect that protective, reclamation and rehabilitation work in accordance with the FMCP or with such modifications as approved by the competent authority have been carried out before abandonment of mine.
2. Rule 22(3) states that 'every holder of a mining lease shall take steps to prepare mine closure plans as per the guidelines and format given by the Indian Bureau of Mines from time to time'.
3. Rule 24 of MCDR provides that the mining lease holder is required to submit a final mine closure plan to the competent authority for approval two years prior to the proposed closure of the mine. Further, the competent authority is required to convey his approval or refusal of the final mine closure plan within ninety days of the date of its receipt to the holder of the mining lease.
4. Rule 25 of MCDR 2017 allows for modifications in the mine closure plan. In this case the lease holder desirous of seeking modifications in the approved mine closure plan, is required to submit to the competent authority for approval setting forth the intended modifications and explaining the reasons for such modifications. The competent authority may approve the modifications or approve with such alterations as he may consider expedient.
5. As enumerated in Rule 26 of MCDR 2017 it is the responsibility of holder of a mining lease to ensure that the protective measures including reclamation and rehabilitation works have been carried out in accordance with the approved mine closure plan or with such modifications as approved by the competent authority. Further the holder of a mining lease is require to submit to the competent authority a yearly report

as per the format specified by the Indian Bureau of Mines, before 1st day of July every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plan, and if there is any deviation, reasons thereof.

Minerals (Other than Atomic and Hydro-Carbon Energy Minerals) Concession Rule 2016 (In short MCR 2016):

1. As per Rule 21(2) (a), lessee is required to submit documents to evidence of implementation of the approved FMCP for surrender of mining lease.

B. Guidelines for Final Mine Closure Plan preparation for the leases expiring on 31st March, 2020 or upon expiring 50 years period from the date of grant of Mining Lease in terms of Section 8A (6) of MMDR Amendment Act'2015

FMCP in respect of leases expiring on 31st March, 2020 should be submitted separately on or prior to 31st March, 2018 apart from the Mining Plan document which may be in existence for the lease area. Similarly, for leases expiring after completion of 50 years period from the date of grant of mining lease, FMCP should be submitted two years prior to the expiry of the lease. These guidelines shall be applicable only for those leases where mineral has not been exhausted and the area may be available for auction in future. All the proposals/activities (production/waste or overburden handling/mineral rejects) for last two years (2018-19 and 2019-20) in the FMCP should be same as given in the approved Mining Plan document valid upto 31.03.2020. All formats for approval/ rejection/ bank guarantee etc. shall be common with the general Mining Plans.

The proposals in the FMCP prepared for such lease areas should be as per the guidelines enumerated below:-

1. Introduction:

The name of the lessee, the location and extent of lease area, the type of lease area (forest, non-forest etc.), the present land use pattern, the method of mining and mineral processing operations, may be given in brief.

1.1Statutory obligations:

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, directives issued by the Indian Bureau of Mines, conditions imposed by the Ministry of Environment and Forests, State of Central Pollution Control Board or by any other organization describing the nature of conditions and compliance position thereof may be indicated here (the copies of relevant documents may be attached as Annexure).

1.2 Closure plan preparation:

The FMCP shall be prepared by a person qualified in terms of Rule 15 of MCR'2016. The names and addresses of the applicant and qualified person who prepared the Mine Closure Plan shall be furnished. The relevant consents/ undertakings/annexures shall be submitted as per the format given in the Chapter-V of this document.

1.3 Lease Area Description:

Description of the lease area alongwith the ownership of land and land schedule, extent of the lease area, brief history alongwith co-ordinates of the corner pillars etc. to be given.

2.0 Geology:

Briefly describe the topography and general geology indicating rock types available, the Chemical constituents of the rocks / minerals including toxic elements if any, at the mine site.

2.1 Reserves/Resources:

Indicate the Total mineral reserves/resources available UNFC category wise in the lease area estimated in the last approved mining plan document (Review/Updation/Modification along with the depletion and balance mineral reserves in the proposed mine closure including its quality available (for final mine closure plan only). The mineralized part may be shown distinctly in the plans and the area should be secured for any future considerations (no backfilling/dumping of waste should be done on mineralized area). Alongwith in-situ, if any, mineralized dump, mineral rejects stack is available at the mine site, it should also be secured and quantum and grade for the mineral in the dump/stack should be mentioned. (Note: - For estimation of grade and quantum of reserves/resources, MEMC Rules'2015 should be referred). No further dumping on the potential mineralized area shall be allowed. Proportionate exploration over the potentially mineralized area in terms of Rule 12 (4) of MCDR'2017 should be carried out by the lessee and results of such exploration carried out should be submitted to Indian Bureau of Mines in Form 'J' in terms of Rule 48 of MCDR'2017 within 30 days of completion of such exploration or expiry of lease, whichever is earlier. Alongwith Form 'J', a Geological plan of the lease area should be submitted demarcating the area under different 'G' axis

(G1/G2/G3/G4/Non-Mineralized). It may also be seen that entire mineralized area is explored under G1 or G2 level and such area has been secured in such a way that mine can restart operations by minimum developmental work after re-allotment of mining lease.

3.0 Mining:

Describe in brief the mining method followed to win the mineral, extent of mechanization, Mining machinery deployed, production level prior to closure etc. Production proposals prior to final closure i.e., expiry of lease should be in commensurate with the reserves established under 111, 121 and 122 categories of UNFC. It should be ensured that mining proposals including enhancement of production approved under Rule 17(3) of MCR'2016, if any, are scientific in nature by ensuring that stripping ratio (ore to overburden ratio) is not changed exorbitantly.

4.0 Mineral Beneficiation:

Whether Mechanical or Manual. Describe in brief the mineral beneficiation practices if any, indicating the process description in short. Indicate discharge details of any tailings / middlings and their disposal / utilization practice etc. The location of any tailings/middlings dumps available in the lease area should be shown on relevant plates.

5.0 Closure Plan:

5.1 Baseline Information as given in the Mining Plan

Describe the baseline information about the area, its topography, flora and fauna etc. as given in the Mining Plan for grant of ML/ as per the historical data about the area (for the cases granted prior to introduction of Mining Plan)

5.2 Mined-Out Land:

Describe the proposals to be implemented for reclamation and rehabilitation of mined-out land only for those excavations, which have been proved through exploration for no underlying deposits (as referred in item 2.4) including the manner in which the actual site of the pit will be restored for future use. The proposals may be supported with relevant plans and sections depicting the method of land restoration / reclamation / rehabilitation.

5.3 Water Quality Management:

Describe in detail the existing surface and ground water bodies available in the lease areas in terms of IS:10500 or IS:2490 (as the case may be)and the measures to be taken for protection of the same including control of erosion, sedimentation, siltation, water treatment, diversion of water courses , if any, measures for protection of contamination of ground water from leaching etc. Quantity and quality of surface water bodies may also be indicated and corrective measures proposed to meet the water quality conforming the permissible limits may also be described. Report of hydrological study carried out in the area may also be submitted. The water balance chart may be given. If there is potential of Acid Mine Drainage the treatment method may be given to neutralize the acidity of water. Make of water in the lease area based on the average rainfall for last 5 years and catchment area should be informed.

5.4 Air Quality Management:

Describe the existing air quality status. The mitigative measures to be taken for prevention of pollution of air may be described.

5.5 Waste Management:

Describe the type, quality and quantity of overburden, mineral reject etc. available and their disposal practice. If no utilization of waste material is proposed, the manner in which the waste material will be stabilized may be described. The protective measures to be taken for prevention of siltation, erosion and dust generation from these waste materials may also be described. If toxic and hazardous elements are present in the waste material, the protective measures to be taken for prevention of their dispersal in the air environment, leaching in the surface and ground water etc., may be described. As far as possible, the dumps should be kept outside the pit limits for the closure period since the mining operation in these leases are continuing till 31.03.2020.

5.6 Top Soil Management:

The stacking of top soil available at the site and its utilization may be described. During the closure period, top soil may be utilized for plantation to stabilize the dumps.

5.7 Tailing Dam Management:
The steps to be taken for protection and stability of tailing dam, stabilization of tailing material and its utilization, periodic desilting, measures to prevent water pollution from tailings etc., arrangement for surplus water overflow alongwith detail design, structural stability studies, the embankment seepage loss into the receiving environment and ground water contaminant, if any, may be given alongwith mitigative measures to avoid any ground water contamination out of the tailings.

5.8 Infrastructure:
The existing infrastructural facilities available such as roads, aerial ropeways, conveyer belts, railways, power lines, buildings & structures, water treatment plant, transport, water supply sources the permanent civil structures, plants, ropeways, belt conveyors in the area etc., and their future utilization may be evaluated on case to case basis.

5.9 Disposal of Mining Machinery:
The decommissioning of mining machineries and their possible post mining utilization, if any, to be described.

5.10 Safety and Security:
Explain the safety measures implemented to prevent access to surface openings, excavations etc., and arrangements proposed during the mine abandonment plan and upto the site being opened for general public may be described. The lessee should ensure fencing of any excavation endangering fall of persons/cattles etc.in terms of Rule 26 of MCDR'2017.

5.11 Disaster Management and Risk Assessment:
This may deal with action plan for high risk incidences like landslides, subsidence flood, inundation in underground mines, fire, seismic activities, tailing dam failure etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authority may also be described.

5.12 Economic Repercussions of closure of mine and manpower retrenchments:

Manpower retrenchment, compensation, if any, to be given in consultation with local district administration, socio-economic repercussions and remedial measures consequent to the closure of mines may be described, specifically stating the following:-

5.12.1 Number of local residents employed in the mine, status of the continuation of family occupation and scope of joining the occupation back.

5.12.2 Compensation, if any, given or to be given to the employees connecting with sustenance of himself and their family members.

5.12.3 Satellite occupations connected to the mining industry - number of persons engaged therein - continuance of such business after mine closes.

5.12.4 Continued engagement of employees in the rehabilitated status of mining lease area and any other remnant activities.

5.12.5 Envisaged repercussions on the expectation of the society around due to closure of mine.

6.0 Time Scheduling for abandonment:

The details of time schedule of all abandonment operations as proposed in para 4 may be described here. The manpower and other resources required for completion of proposed job may be described. The schedule of such operations may also be supplemented by PERT (Programme Evaluation & Review Technique), Bar chart etc. for the two years closure period.

6.1 Abandonment Cost:

Cost to be estimated based on the activities required for implementing the protective and rehabilitation measures including their maintenance and monitoring programme.

7.0 Financial Assurance:

Details of Financial Assurance submitted under Rule 27 of MCDR'2017 as given in the last approved/valid Mining Plan document (copy of FA to be enclosed).

8.0 Plans and Sections to be enclosed:

All the applicable (opencast or underground as the case may be) statutory plans required in terms of Rule 32 of MCDR'2017 alongwith a plan showing the year-wise proposals for two years of final closure period on preferably 1:2000 scale, fulfilling the requirements of Rule 31 and prepared in terms of Rule 34 of the MCDR'2017 should be enclosed with the document.

9.0 Certificate to be issued under Rule 21(4) by the Authorized Officer

The holder of a ML shall not abandon a mine unless a FMCP duly approved by the competent authority, is implemented, and for this purpose, the lessee shall be required to obtain a certificate from the authorized officer, as the case may be, to the effect that protective, reclamation and rehabilitation work in accordance with the FMCP or with such modifications as approved by the competent authority have been carried out before abandonment of mine.

The implementation of FMCP proposals shall be checked through periodic inspection preferably at an interval of 6 months and a brief report on implementation status on FMCP proposals should be submitted within 7 days to the RCOM/DCOM(I/C) endorsing a copy to COM of respective zones and CCOM, IBM. Any shortfall observed during the inspection shall be communicated forthwith to the lessee for making up the implementation shortfall within the next three months. Last inspection (preferably joint inspection done by a Mining Engineer and a Geologist alongwith state government officer) before issue of closure certificate should be done preferably in the last month of lease expiry i.e., March, 2020 and the certificate, in the format enclosed as ***Annexure-I***, should be issued within 15 days from the date of expiry of lease i.e., 15.04.2020 after reasonably satisfying the implementation proposals made in the FMCP.

In case of defaulting lessees in respect of timely implementation of approved FMCP proposals observed at the end of 3rd inspection i.e.,

inspection done in between April'2019 to September'2019, a notice for forfeiture of FA in terms of Rule 27(4) of MCDR'2017 shall be issued to the lessee by 31.10.2019. Non-compliance of the proposals based on the report of the last inspection done in March, 2020 will lead to non-issue of the certificate and the Financial Assurance is liable for forfeiting in terms of Rule 27(5) of MCDR'2017 and also liable for legal actions as per Rule 62 of the said rules. Suitable actions in terms of Rule 27(6) may be initiated within 3 months of forfeiture of FA by the concerned RCOM/DCOM (I/C).

10.0 Modification in the Approved FMCP:

In compliance to Rule 25 of MCDR'2017, the holder of a mining lease desirous of seeking Modifications in the Approved FMCP, shall submit a Modified FMCP prepared in terms of the guidelines given in Part B and as per the format given in Part C.

C. FORMAT FOR PREPARATION OF FINAL MINE CLOSURE PLAN

Cover Page of the FMCP should give the following Information:-

FINAL MINE CLOSURE PLAN submitted under Rule 24, 25 of Minerals Conservation and Development Rules, 2017*
(****For FMCP for the leases expiring on 31.03.2020 or 50 years from the date of grant with balance reserves in the lease area, 'in terms of Section 8A of MMDR Amendment Act'2015' should also be mentioned***)

1. Name of the Mine along with Mining Lease Number/TC Number/Lease Number if any.
2. Name and address of the Mining Lease Holder.
3. Name of the Village, Taluka, District and State where the Mining Lease falls. (In case of multiple villages, indicate the prominent village name(s) with etc.)
4. Area (in ha) of the mining lease with break-up of Forest and Non-forest area).
5. Registration Number allocated by IBM if any to lease holder.
6. Category of Mine (A-Fully Mechanised/A-Others/B).
7. Period of Proposals (For the leases expiring on 31.03.2020, it should invariably be 2018-19 to 2019-20) or in case of leases expiring upon completion 50 years from the date of grant with balance reserves in the lease area, last two years period.
8. Lease Period
9. Name of the Qualified Person (QP) and his Qualification who prepared the document.

Model Certificates / Undertakings/ Consents to be furnished By Applicant/Lease Holder

CONSENT LETTER/ UNDERTAKING/ CERTIFICATE

01 The Final Mine Closure Plan/Modified Final Mine Closure Plan in respect of (Name of Mine) Mine over an area of (Area in Ha), in (Village), P.O. (Name of Post office), District (Name of district), (Name of state), bearing Mining Lease No./T.C. No. (if any) submitted under Rule 24/ Rule 25 of MCDR'2017has been prepared by Qualified Person (QP)(Name of QP).

This is to request the Regional Controller of Mines, Indian Bureau of Mines, --------, to make any further correspondence regarding any correction of the Final Mine Closure Plan/Modified Final Mine Closure Plan with the said qualified person at his address below :-
(Full name of QP and address)

We hereby undertake that all information/ modifications Final Mine Closure Plan/Modified Final Mine Closure Plan by the said qualified person be deemed to have been made with our knowledge and consent and shall be acceptable on us and binding in all respects.

02 It is certified that the **CCOM Circular No-2/2010** has been implemented and a duly authenticated DGPS surveyed cadastral plan is enclosed with the document.

03 It is certified that the Final Mine Closure Plan/Modified Final Mine Closure Plan complies with all statutory rules, Regulations, Orders Made by the Central or State Government, Statutory organization, Court etc. which have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities.

04 "The provisions of **Mines Act, Rules and Regulations** made there under have been observed in the Final Mine Closure Plan/Modified Final Mine Closure Plan over an area of ------- hectares in -------district in ----------state belonging to (*Name of Mine*)**Mine,** and where specific permissions are required, the applicant will approach the **D.G.M.S.** Further, standards prescribed by **D.G.M.S.** in respect of **miners' health** will be strictly implemented".

05 The information furnished in the Final Mine Closure Plan/Modified Final Mine Closure Plan is true and correct to the best of our knowledge and records.

06 It is to undertake that all the proposals made in Mining Plan approved for the area shall be executed in true spirits. The fact that the lease is going to expire on 31.03.2020 (or 50 years from the date of grant with balance reserves

in the lease area) shall not cause any distraction in Mineral Conservation, Systematic, Scientific and Sustainable Development of the Mine.

07 It is to undertake that all the measures proposed in this Final Mine Closure Plan /Modified Final Mine Closure Plan will be implemented in a time bound manner as proposed.

Place: {**Name of Owner (in case of Individual) /Managing Partner (in case of firm)/ Nominated Owner (in case of Company)**}

Date:

Designation
Name of Company/Organisation

Model Certificates to be furnished
By Qualified Person

CERTIFICATE FROM QP:

The provisions of the Mineral Conservation and Development Rules 2017 made under Section 18 of the Mines & Minerals (Development & Regulation) Act 1957, have been observed in the preparation of the Final Mine Closure Plan/Modified Final Mine Closure Plan for **(Name of Mine) Mine** over an area of **(area in Ha)**, of M/s **(Name of Owner/ Company/Organization),** in **(Village name**), P.O. ***(Post office name),*** District ***(District name)*** of ***(State name)*** State and whenever specific permissions are required, the applicant will approach the concerned authorities of **Indian Bureau of Mines.** The information furnished in the Final Mine Closure Plan/Modified Final Mine Closure Plan is true and correct to the best of our knowledge.

Place: --------
Signature
Date: ------- ***(Name of*** **Qualified Person)**

SUMMARY OF PROPOSALS AT A GLANCE
PERIOD: ----------TO ----------

Proposal	Year									Remarks
	I			II			Total			
Exploration (For leases expiring on 31.03.2020 or 50 years with reserves remaining)										
No. of Boreholes (Core/RC/DTH) with meterage	No.	Type	Meterage	No.	Type	Meterage	No.	Type	Meterage	
No of Pits/ Trenches with dimensions	No.		Dimension (LXWXD)	No.		Dimension (LXWXD)	No.		Dimension (LXWXD)	
Any other Exploration activity (to indicate)										
Excavation										
Top Soil in m^3										
ROM in Tonnes										
Clean Ore in Tonnes										
Mineral Rejects in Tonnes										
Fines in Tonnes										
Tailings/Slimes in Tonnes										
OB/Waste Material in m^3										
Area Utilisation										
Area under Mining (in Ha)										
Area under Waste Dumping (in Ha)										
Area under Mineral Reject (in Ha)										
Area under Top Soil stack (in Ha)										

Area under Tailings/Slimes/Fines if any (in Ha)							
Area already Reclaimed and Rehabilitated (in Ha)							
Stacking							
Top Soil in m^3							
Mineral Reject in Tonnes alongwith Average Grade (above threshold value)							
Tailings/Slimes stack (Quantity and Average Grade)							
Fines stack (Quantity and Average Grade)							
Waste Material in m^3							
Environmental Protective Measures							
Plantation for Virgin area (green cover):							
Numbers							
Area							
Plantation over waste dumps:							
Numbers							
Area							
Reclamation of mine out area (Backfilling)							
Plantation over backfilled area:							
Numbers							
Area							
Reclamation of mine out area (Water Reservoir/ Pisciculture)							
Construction of:							
Fencing of							

Mineralized Area/Mineralized Dumps/Underground Openings/Lease Area (ha)							
Check Dams numbers							
Retaining Wall in meters							
Garland Drain in meters							
Settling Ponds (Numbers)							
Rainwater Harvesting Pits (Numbers)							
Any other environmental protective measures (to be indicated)							
FA details	Amount		Bank		Validity		BG No.

	Balance estimated mineral reserve/ resources in different categories of UNFC are given below:-(To be indicated separately for Forest and non-forest area) As on 01.04.2018 (For leases expiring on 31.03.2020) or As on Two years prior to the expiry of the lease			
	A. Total Mineral Reserve	UNFC Code	Quantity in tons	Grade
	Proved Mineral Reserve 111	111		
	Probable mineral Reserve 121and 122	121		
		122		
	B. Total Remaining Resources			
	Feasibility mineral Resource	211		
	Prefeasibility mineral resource	221 &222		
	Measured mineral resource	331		
	Indicated mineral resource	332		
	Inferred mineral resource	333		
	Reconnaissance mineral resource	334		
	Total Reserves + Resources			

Final Mine Closure Plan/Modified Final Mine Closure Plan for (Name of the Mine with ML/TC No) **of Shri/M/s ---------- over an area of ------ Ha situated in ---------District of ----------State.**

CHAPTER-I INTRODUCTION AND GENERAL INFORMATION

1.0	PART-A: INTRODUCTION
	A brief introduction of the mine since when granted etc./about leaseholder may be given ***alongwith purpose of submission of the document (statutory obligation under Section 8A of MMDR Amendment Act'2015 and as per Rule 24 in case of submission of FMCP and Rule 25 in case of Modified FMCP)*** ***In case of modifications, reasons for modifications to be enumerated.***

2.0	PART-B: GENERAL INFORMATION	
2.1	Name of the lessee	
	Address:	
	District:	
	State:	
	Pin Code:	
	Phone& Mobile No:	
	Fax:	
	e-mail:	
2.2	IBM Registration Number	
2.3	Status of lessee: (Private individual/ Cooperative Association/ Private Company/ Public Company/ PSU / Joint Sector Undertaking)	
2.4	Name of partner/ Directors with full address & phone fax & email details	
2.6	Mineral(s) which is included in the lease deed	
2.7	Mineral(s) which is the lessee intends to mine	
2.8	Name of Qualified Person who prepared Mining Plan and his qualifications &	

	experience	
	Address-	
	Phone number /mobile number/email Id	
	Fax Number	

3.0	PART-C: LOCATION AND ACCESSIBILITY OF MINE				
3.1	Name of Mine				
3.2	Lease No/TC No. & Mine code/ Lease code				
3.3	Date of grant of lease and date of Execution of lease.				
3.4	Period of lease from DD/MM/YYYY to DD/MM/YYYY				
3.5	Location of mine Village, Tehsil, Police station - District, PIN				
3.6	Postal address for mine				
	Post:-				
	Tehsil/taluka:-				
	District & State:-				
	Pin Code:-				
	Phone/Mobile:-				
	Fax:-				
	e-mail:-				
3.7	Details of lease area with location plan- (type of land- reserve forest, protected forest, other forest, waste land, grazing land, agriculture land and others to specify)				
3.7.1	a)-Non--Forest area with Khasra/ survey No.	Area in ha	Type of land	Owne-rship	Area acquired/ surface rights obtained
	i)				
	ii)				
	iii)				
	Sub Total (a)				
3.7.2	b) - Forest Area with Block No. /Forest survey No.				
	i)				
	ii)				
	iii)				
	Sub Total (b)				
	Grand Total (a+b)				

3.8	Whether the area falls under Coastal Regulation Zone (CRZ)? If yes, details thereof alongwith the permission from CRZ authorities and whether it is in accordance with the provisions of Rule 3(2) of Atomic Minerals Concession Rules'2016		
3.9	Nearest distance from any boundary pillar to the nearby National Park/Wild Life Sanctuary/Protected Area (to be given if located within 10km from the radius of lease area)		
3.10	Existence of public road/railway line, if any nearby and approximate distance		
3.11	Approach route from District Head Quarters to mine site.		
3.12	Toposheet No. of Survey of India Map		
3.13	Latitude &Longitude of all corner boundary point/ pillar from Fixed reference point (FRP)	Latitude	Longitude
	Pillar no1		
	Pillar no-2		
	Pillar no-3		
	Pillar no-4		
	Pillar no-5 & so on		
3.14	Status of award of Star Rating as per Rule 35(3) of MCDR 2017 during the last two financial year indicating level of Star obtained (scored if any)		
Attach a general location map showing area and access routes. It is preferred that the area be marked on a Survey of India topographical map or a cadastral map or forest map as the case may be. However, if none of these are available, the area may be shown on an administrative map.			

4.0	**PART-IV: DETAILS OF APPROVED MINING PLAN/ *FMCP (in case of Modifications in approved FMCP) in chronological descending order (Newest first)***			
4.1	Date and reference of earlier approved MP/SOM			
Sl. No.	Type of document & rule under which prepared	approval letter No & date	Lease area for which approval given (ha)	Proposal from –to (period of years)
a)				
b)				
c)				

4.2	Details of last modifications, if any (for approved MP/RMP/***FMCP***, indicating date of approval, reason for modification of previous approved period)					
Sr. No.	Modification (MP/SOM/ ***FMCP***)	Rule under which modified	Reasons for modifications	Area (ha)	Date of approval	Period of modification
a)						
b)						
c)						

5.0	**PART-V: REVIEW OF EARLIER APPROVED PROPSALS *GIVEN IN THE MINING PLAN (RMP/MMP)*-** (Exploration, Development & Reclamation etc) (Note:- 1. Should be for 3 years period of the approved mining plan. As per the guidelines, FMCP should be submitted two years prior to closure. 2. In case of Modified FMCP, review should be given for approved FMCP only. 3. Details to be furnished year-wise in tabular form for each activity.)			
	Items	Proposals	Actual work done	Remarks/ Reasons for deviations, if any
5.1	Exploration for Geological axis 1 or 2. Bore holes – Pits & Trenches-	Details to be given for Boreholes, Pits and trenches separately.	Details to be given for Boreholes, Pits and trenches separately.	
5.2	Number of pits proposed for production			
5.3	Location of Development	In dd mm ss format or Grid values	In dd mm ss format or Grid values	
5.4	Total Quantity of topsoil removed, used and stacked in m3			
5.5	Quantity of overburden m^3			
5.6	Production of ROM (in Tonnes)			
5.7	Total Quantity of Mineral Reject stacking (in Tonnes)			
5.8	Overall Stripping ratio or Ore to OB ratio (T/m^3)	To be furnished separately for 3 years	To be furnished separately for 3 years	
5.9	Total Quantity of Fines stacking (in Tonnes)			

5.10	Total Quantity of Tailings/ Slimes stacking (in Tonnes)							
5.11	Height of benches in Overburden and in Ore (meter)							
5.12	Location of topsoil Stack	In dd mm ss format or Grid values						
5.13	Location of OB	In dd mm ss format or Grid values						
5.14	Location of mineral rejects stacks	In dd mm ss format or Grid values						
5.15	Location of Fines Stacks	In dd mm ss format or Grid values						
5.16	Location of Tailings/ Slimes stacks	In dd mm ss format or Grid values						
5.17	Length of Retaining wall or garland drain all along dumps (meter)							
5.18	Fencing of Mineralized Area/Mineralized Dumps/Underground Openings/Lease Area (ha area secured)							
5.19	Conversion of mined out area into Water Reservoir/ Pisciculture (in ha)							
5.20	Backfilling of mined out area	Volume	Area	Height	Volume	Area	Height	
5.21	Plantation/ Afforestation (alongwith providing survival)	Virgin Area	Dump	Backfilled Area	Virgin Area	Dump	Backfilled Area	
5.22	Number of settling ponds with location							

5.23	Number of Rainwater Harvesting pits with location			
5.24	Control of dust	Free Box for Brief Write Up	Free Box for Brief Write Up	
5.25	Control of Noise and ground vibration	Free Box for Brief Write Up	Free Box for Brief Write Up	
5.26	Quality of air	Free Box for Brief Write Up	Free Box for Brief Write Up	
5.27	Quality of water	Free Box for Brief Write Up	Free Box for Brief Write Up	
5.28	Area proposed for put to use in last Mining Plan/Scheme of Mining/ FMCP proposals at end of five year period-			
	Item details	Proposed area in last document (ha)	Actual area as on date (ha)	Remark
	i) Area under mining			
	ii) Storage for top soil			
	iii)Waste dump site			
	iv) Mineral storage			
	v) Infrastructure – workshop, administrative building etc.			
	vi) Roads			
	vii) Railways			
	viii)Tailing pond			
	ix) Effluent Treatment Plant			
	x) Mineral Separation Plant			
	xi) Township area			
	xii) Others (to specify)			
	xiii) Undisturbed Area			
	xiii) Total in ha			

5.29	Give status of compliance of violations pointed out by IBM for last 3 years			
Sr.No	Date of inspection/ Violation date if based on office record	Violation letter no.	Rule violated (Details of violation)	Compliance status
i)				
ii) & so on				

5.30	Whether IBM has suspended the mining operations in the said mine during last five years period? If yes give details below:			
S.No	Date of Suspension of mining operations	Suspension Letter No.	Contravention of Rules for which the suspension order issued.	Compliance status/Letter No. and Date of revocation of suspension order by IBM
i)				
ii)				

5.31	Indicate and give details of any suspension /closure/prohibitory order issued by any Government agency (other than IBM) under any rule or Court of law during the last five years period
5.32	Details of revocations order if any -

CHAPTER-II GELOGY AND EXPLORATION *(Details should be in concurrence with the approved Mining Plan/RMP/MMP)*

6.1	**Briefly describe the topography, drainage pattern, vegetation, climate, rainfall data as applicable for the mining lease area**
6.1.1	PHYSIOGRAGHY-
6.1.2	DRANAGE PATTERN -
6.1.3	VEGETATION-
6.1.4	CLIMATE-
6.2	**REGIONAL GEOLOGY**-- Brief descriptions of Regional Geology with reference to location of lease/applied area. Under this different rock types, strike and dip direction and structures, control of mineralisation and stratigraphy in brief should also be given.
6.3	**LOCAL GEOLOGY**:- Detailed description of geology of the lease area such as shape and size of the mineral / ore deposit, disposition of various litho-units indicating structural features, associated rocks, thickness of the ore body, Category of the Orebody in terms of MEMC'2015 etc. should be described.

6.4	i) Name of prospecting /exploration agency (for the exploration already carried out in the area)-	
	ii) Address-	
	iii) E mails-	
	iv) Phone /fax etc-	

6.5	**Details of prospecting/exploration already carried out :**
6.5.1	Extent of Geological mapping with scale, surface sampling, Number of pits and trenches; indicating dimensions, spacing etc along and across the strike/ foliation with reference to geological plan.

S. No.	Year of exploration	Number of Pit/Trench	Dimension (LXW)	Top RL	Bottom RL	Depth (M)	Spacing / Grid Interval	Area Covered	Scale of Exploration

6.5.2	Number of boreholes indicating type (Core/RC/DTH), diameter, spacing, inclination, Collar level, depth etc with standard borehole logs duly marking on geological plan/sections.

S. No.	Year of exploration	Number of Bore Hole	Type of BH	Diameter	Inclination	Collar Level	Depth	Spacing / Grid Interval	Area Covered	Scale of Exploration

6.5.3	Details of samples analysis (10% of the samples should be analysed from Govt. accredited laboratories):-

Type of Sample	Total Samples Collected	Total Samples Analysed
(Grab Sample, Bulk Sample, Core Drill Sample, DTH Sample etc.)		
Note: Location of the samples should be shown on the Geological Plan		

6.5.4	Expenditure incurred in various prospecting operations.
6.5.5	Total lease area explored under various categories

G-Axis	Area in Ha	Depth in Meter
G1		
G2		
G3		
G4		
Area Unexplored		**-XX-**

Non-Mineralized Area		**-XX-**
Total		(Maximum Explored Depth)

6.6	**Method of mineral resource estimation (surface area method, cross section area method or indicate the software used). This should be calculated separately for Forest area and non-forest area.**	
6.6.1	Parameters for resource estimation:-	
	Explored Strike length-	
	Strike length Unexplored based on Regional Exploration-	
	Width / thickness of the ore body	
	Explored Depth/mRL	
	Cut-off grade	
	Estimated Bulk density in T/cuM (Not specific gravity)	
	Thresh hold Value	
	Maximum depth of the Mineralization established based on Regional Exploration	
	Others	

Note: Estimated Bulk Density takes care of Intercalated waste

6.6.2	Mineral resource & Associated waste Calculation table -								
Section Line	Influence length in meters	Top soil Section area in Sq.mts	Top soil CUM	Waste section area in Sq.mts	Waste in CUM	Mineralised sectional area in Sq.mts	Mineral resources in CUM	Bulk Density (T/cuM)	Total Mineral Resources (in T)
AA1									
BB1									
CC1									
DD1									
EE1									
…..									

Note: Estimated Bulk Density takes care of Intercalated waste

6.6.3	Level/Degree of Study undertaken: F1/ F2/ F3 (accordingly feasibility study report to be enclosed)
6.6.4	Blocked Resources under various Modifying Factors in terms of item no. 14 of Part-I (Definitions) of MEMC Rules'2015

S. No.	Modifying Factor	Brief Details of the applicable factors causing blockage of Resources	*Blocked Resources (in T)	UNFC Category
1	Mining Factors			
2	Processing Factors			
3	End Use Factors			
4	Cut-off grade Factors			
5	Threshold Value Factors			
6	Metallurgical Factors			
7	Infrastructure Factors			
8	Economic Factors			
9	Marketing Factors			
10	Legal Factors			
11	Environmental Factors			
12	Social Factors			
13	Government Factors			
Total Blocked Resources (in T))				

* Back up calculations should be provided in feasibility study report alongwith mentioning grade of the blocked resources

6.6.5	Justifications for Economical axis as per MEMC Rules'2015 (in terms of item no. 17, 18 & 19 of Part-I):-

6.7	Estimated mineral reserve/ resources in different categories of UNFC as reported in the last Approved MP/SOM/FMCP are given below:-(To be indicated separately for Forest and non-forest area)			
	A. Total Mineral Reserve	**UNFC Code**	**Quantity in tons**	**Grade**
	Proved Mineral Reserve 111	111		
	Probable mineral Reserve 121and 122	121		
		122		
	B. Total Remaining Resources			
	Feasibility mineral Resource	211		
	Prefeasibility mineral resource	221 &222		
	Measured mineral resource	331		
	Indicated mineral resource	332		
	Inferred mineral resource	333		
	Reconnaissance mineral resource	334		
	Total Reserves + Resources			

6.8	Balance estimated mineral reserve/ resources in different categories of UNFC are given below:-(To be indicated separately for Forest and non-forest area) As on 01.04.2018 (For leases expiring on 31.03.2020) or As on Two years prior to the expiry of the lease			
	A. Total Mineral Reserve	**UNFC Code**	**Quantity in tons**	**Grade**
	Proved Mineral Reserve 111	111		
	Probable mineral Reserve 121and 122	121		
		122		
	B. Total Remaining Resources			
	Feasibility mineral Resource	211		
	Prefeasibility mineral resource	221 &222		
	Measured mineral resource	331		
	Indicated mineral resource	332		
	Inferred mineral resource	333		
	Reconnaissance mineral resource	334		
	Total Reserves + Resources			

6.9	Addition in mineral reserve/ resources in different categories of UNFC are given below:-(To be indicated separately for Forest and non-forest area) (After deducting 6.7 from 6.8)			
	A. Total Mineral Reserve	**UNFC Code**	**Quantity in tons**	**Grade**
	Proved Mineral Reserve 111	111		
	Probable mineral Reserve 121and 122	121		
		122		
	B. Total Remaining Resources			
	Feasibility mineral Resource	211		
	Prefeasibility mineral resource	221 &222		
	Measured mineral resource	331		
	Indicated mineral resource	332		
	Inferred mineral resource	333		
	Reconnaissance mineral resource	334		
	Total Reserves + Resources			

Guidelines for Resource Estimation

1. The surface plan of the lease area may be prepared on a scale of 1:1000 or 1: 2000 with contour interval of maximum of 10 m depending upon the topography and size of the area duly marked by grid lines showing all features indicated required under Rules made under Section 18 of the MMDR Act 1957.
2. For preparation of geological plan, surface plan prepared on a scale of 1: 1000 or 1: 2000 scale may be taken as the base plan. The details of exploration already carried out along with supporting data for existence of mineral, locations proposed exploration, various litho units along with structural features, mineralized/ore zone with grade variation if any may be marked on the geological plan along with other features indicated under Rules made under Section 18 of the MMDR Act 1957.
3. Geological sections may be prepared on natural scale of geological plan at suitable interval across the lease area from boundary to boundary.
4. Reserves and Resources with respect to the threshold value notified by IBM may be furnished in a tabular form: (Area explored under different level of exploration may be marked on the geological plan and code for area considered for different categories of reserve/resources estimation may also be marked on geological cross sections).
5. Submit a feasibility/pre-feasibility study report along with financial analysis for economic viability of the deposit as specified under in MEMC Rules 2015.
6. Furnish detailed calculation of reserves/resources section wise (When

	the mine is fully mechanized and deposit is of complex nature with variation of size, shape of mineralized zones, grade due to intrusion within ore zone etc., an attempt may be made to estimate reserves/resources by slice plan method). In case of deposits where underground mining is proposed, reserve/resources may be estimated by level plan method, as applicable, as per the proposed mining parameters.

6.10	Broadly indicate the future programme of exploration with due justification (duly marking on Geological plan year wise location in different colours) taking into consideration the future tentative excavation programme planned in next TWO years as in table below: -
	Separate tables should be given for Boreholes, Pits and Trenches. Each table should contain year-wise details for the proposed exploration for the next two years in terms of Rule 12(4) of MCDR'17
6.11	Broadly indicate the future programme / proposals for compliance of Rule 63 of MCDR'2017 in regard to 'Preservation of Cores, etc.'
	Brief details regarding preservation of cores, etc. obtained while exploration within the lease area should be given. No cores should be destroyed without the permission of Chief Controller of Mines. In terms of the above said rule, the cores etc. should be stored serially with suitable indexing and cataloguing in terms of sub-rule (4) and shall ensure submission of cores as per the manual issued by GSI from time to time (GSI being nodal agency for archiving drill cores at National Core Repository and at the Regional Drill Core Repositories).

CHAPTER-III MINING *(Details should be in concurrence with the approved Mining Plan/RMP/MMP)*

7.0	**MINING**
7.1	**OPEN CAST MINING:**

(a)	**YEAR WISE DEVELOPMENT & PRODUCTION**		
Year	Total ROM (In Tonnes)	Total overburden waste (m^3)	Ore To OB Ratio T / m^3
(1)	(2)	(3)	(4)=(*2*)/(*3*)
I			
II			

(b)	**YEAR WISE MINERAL REJECTS, FINES & TAILINGS/ SLIMES GENERATION**				
Year	Total ROM (In Tonnes)	Clean/Saleable Ore (in T)	Mineral Rejects (in T)	Fines (in T)	Tailings/ Slimes (in T)
(1)	(2)	(3)	(4)	(5)	(6)
I					
II					
Total					

7.2	**Dump Re-handling** (for the purpose of recovery of mineral) to be given separately for separate dumps under exploitation:					
Year	Dump No./ Dump Identification No.	Year-wise handling (in m^3)	Estimated recovery of saleable ROM		Mineral Rejects	
			(in m^3)	(in Tonnes)	(in m^3)	(in Tonnes)
I						
II						
Total						

7.3	**AT A GLANCE YEAR WISE PRODUCTION -**			
Year	ROM Ore In Tonnes from In-situ	Recovered Ore In Tonnes from dump working	Total ore production in Tonnes	Remark
(1)	(2)	(3)	(4)	(5)
I				
II				
Total				

\

7.4	Describe briefly giving salient features of the proposed method of working indicating Category of mine.	
i)	Method of mining	
ii)	Bench parameters	
iii)	Bench height in OB/ore	
iv)	Bench width	
v)	Bench slope	
vi)	Over all pit slope	
vii)	Bottom mRL proposed during Closure	
viii)	Grid reference of proposed working location during the closure period of two years	

7.5	Extent of mechanization- Describe briefly type of machinery and equipment proposed to be used in different activities of drilling, excavation, loading & transportation			
	Type of Excavator	Bucket capacity	Rated production/hr	
	a)			
	b)			
	c)			
	Dumper/Tipper	Capacity & Make	Rated production/hr	
	a)			
	b)			
	Drill Machine	Diameter & Make	Rated Drilling Meterage/hr	
	a)			
	b)			

7.6	**UNDERGROUND MINING-**
7.6.1	Underground layout- Attach a note briefly describing the underground layout using longitudinal sections / longitudinal vertical projection and level plans where necessary indication; - sizes and intervals of levels and raises / winzes with proper reasoning - proposed year wise level wise extent of development for two years - along with the support system
	Note: Latest updated (maximum 3 months old) underground plan should be enclosed to show the underground layout alongwith mentioning proposed working proposals through dotted lines. Extent of development should be checked at the time of site inspection. The underground working plan should be updated regularly preferably within a period of 3 months and position at the expiry of ML period should be furnished without which, grant of certificate for FMCP implementation may be withheld.

7.6.2	**Stope parameters**:		
i)	Number of stopes already stoped out		
ii)	Number of stopes already stowed/backfilled		
iii)	Number of stopes under backfilling		
iv)	Number of stopes under preparations		
v)	Number of working stopes		
vi)	Method of stowing/back filling		
vii)	Any other information		

7.6.3	**Mine ventilation**: - Enclose a note outlining the steps to be taken to ensure adequate supply of air in all parts of the mine and prevention of noxious gases produced and excessive rise of temperature or humidity so as to ensure adequate ventilation. Also indicate No. & type of main mechanical ventilators, total air requirement as per statute, total intake / return (cu.m/ sec) etc.
7.6.4	**Extent of mechanization**- Describe briefly type of machinery and equipment proposed to be used in different activities of drilling, material handling in development and stope, hauling, hoisting to surface, surface transportation and any other operation.

CHAPTER-IV WATER REGIME

8.0	**MINE DRAINAGE-**
a)	Minimum and maximum depth of water table based on observations from nearby wells and water bodies
b)	Indicate maximum and minimum depth of workings (from natural surface level starting the pit excavation irrespective of the slope and may also be given in RL).
c)	Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged
d)	Describe regional and local drainage pattern. Also indicate annual rain fall, catchments area, and likely quantity of rain water to flow through the lease area, arrangement for arresting solid wash off etc.

CHAPTER-V STACKING OF TOP SOIL, MINERAL REJECT, FINES, TAILINGS/SLIMES AND DISPOSAL OF WASTE

9.0	**STACKING OF TOP SOIL, MINERAL REJECT, FINES, TAILINGS/SLIMES AND DISPOSAL OF WASTE**
9.1	Indicate briefly the nature and quantity of top soil, overburden / waste, Mineral Rejects Fines, Tailings or Slimes available within the lease area and to be generated during the closure period

Details of Dumps/Stacks available at the mine site										
Number of Dumps	Top Soil		OB/ Waste		Mineral Rejects		Fines		Tailings/Slimes	
	Area (ha)	Quantity (cuM)	Area (ha)	Quantity (cuM)	Area (ha)	Quantity (T)	Area (ha)	Quantity (T)	Area (ha)	Quantity (T)
1										
2										
Total										

Details of Top Soil, Waste/OB, Mineral Rejects, Fines & Tailings/ Slimes generation during the closure period of two years								
Year	Top Soil (m^3)	OB/ Waste (m^3)	Mineral Reject		Fines		Tailings/ Slimes	
			Quantity (T)	Average Grade	Quantity (T)	Average Grade	Quantity (T)	Average Grade
I								
II								
Total								

Details of Top Soil, Waste/OB, Mineral Rejects, Fines & Tailings/ Slimes disposal/management during the closure period of two years													
Year	Top Soil (m^3)		OB/ Waste (m^3)		Mineral Reject (m^3)			Fines			Tailings/Slimes		
	Top soil reuse	Top soil storage	Backfilling	Storage	Storage	Blending	Beneficiation	Storage	Blending	Beneficiation	Storage	Blending	Beneficiation
I													
II													
Total													

9.2	The proposed dumping ground within the lease area be proved for presence or absence of mineral and be outside the UPL unless simultaneous backfilling is proposed or purely temporary dumping for a short period is proposed in mineralized area with technical constraints & justification.

CHAPTER-VI MINERAL BENEFICIATION

10.0	Whether Mechanical or Manual. Describe in brief the mineral beneficiation practices if any, indicating the process description in short. Indicate discharge details of any tailings / middlings and their disposal / utilization practice etc. The location of any tailings/middlings dumps available in the lease area should be shown on relevant plates
	Note: A material balance chart should be given mentioning beneficiation process, yield at each stage etc. Brief details about securing tailings / slimes stack should be given.

CHAPTER-VII FINAL MINE CLOSURE PLAN

11.0	**FINAL MINE CLOSURE PLAN**
11.1	Environmental Baseline Information Attach a note on the status of baseline information with regard to the following:-
a)	Existing land use pattern indicating the area already degraded due to mining, roads, processing plant, workshop, township etc. in a tabular form.
b)	Water regime, quality of air, ambient noise level, flora, climatic conditions
c)	Human settlements
d)	Public buildings, places of worship and monuments
e)	Indicate any sanctuary/Ghats (like western Ghat) is located in the vicinity of leasehold (Core-Zone / Buffer Zone)

11.2	**Final Reclamation Plan :**
11.2.1	**Mined-Out Land**: Describe the proposals to be implemented for reclamation and rehabilitation of mined-out land including the manner in which the actual site of the pit will be restored for future use *(only in case of area where mineral is completely exhausted)*. The proposals may be supported with yearly plans and sections depicting yearly progress in the activities for land restoration/ reclamation/rehabilitation, afforestation etc., called "**Reclamation Plan**".
11.2.2	**Safety and Security i.e., Securing the Excavations/ pits/ Underground Openings/ Mineralized Dumps or Mineral Rejects stacks/ Fines stack/ Tailings or Slimes stacks**: Describe the proposals to be implemented for securing the Excavations/ pits/ Underground Openings/ Mineralized Dumps or Mineral Rejects stacks/ Fines stack/ Tailings or Slimes stacks

	by means of fencing etc. and explain the safety measures implemented to prevent access to surface openings, excavations etc. Arrangements proposed during the mine abandonment plan and upto the site being opened for general public may be described. The lessee should ensure fencing of any excavation endangering fall of persons/cattles etc. in terms of Rule 26 of MCDR'2017. The proposals may be supported with yearly plans and sections depicting yearly progress in the activities for protective measures like fencing etc., called "**Reclamation Plan**".
11.2.3	**Afforestation:** Proposals should be given separately for plantation existing, proposed and cumulative on Virgin area, Backfilled area and Dump plantation indicating area and number of saplings.
11.2.4	**Topsoil Management**: The topsoil available at the site and its utilization may be described for the closure period of two years. No non-stabilized stacks of topsoil should be left at the expiry of lease period. (Either the generated topsoil should be utilized or the stacks should be stabilized and secured.)
11.2.5	**Water Quality Management**: Describe in detail the existing surface and ground water bodies available in the lease areas in terms of IS:10500 or IS:2490 (as the case may be) and the measures to be taken for protection of the same including control of erosion, sedimentation, siltation, water treatment, diversion of water courses, if any, measures for protection of contamination of ground water from leaching etc. Quantity and quality of surface water bodies may also be indicated and corrective measures proposed to meet the water quality conforming the permissible limits may also be described. Report of hydrological study carried out in the area may also be submitted. The water balance chart may be given. If there is potential of Acid Mine Drainage the treatment method may be given to neutralize the acidity of water. Make of water in the lease area based on the average rainfall for last 5 years and catchments area should be informed. Note: No discharge of mine water shall be allowed to mix with any stream / canal / nullah / river etc. without treatment, therefore, mitigative measures (settling tanks, check dams etc.) taken to avoid any discharge of untreated water from mine site may be discussed preferably year-wise. In case of any discharge of Toxic liquid, suitable mitigative measures should be proposed and water quality should be

	regularly analyzed. In case of presence of check dams/settling tanks/rain water harvesting pits (with or without ground water recharging) etc. details indicating number, location and capacity of each should be furnished. In case of proposals for check dams/settling tanks/rain water harvesting pits (with or without ground water recharging) etc. in the closure period of two years, details indicating number, location and capacity of each should be furnished year-wise. Settling tanks and Rainwater harvesting pits should be fenced to avoid any danger to public safety. In case of presence of mined out pit converted into a water reservoir/ Pisciculture purpose, its dimensions alongwith capacity should be furnished in tabular form for each pit. In case of proposal for conversion of mined out pit into a water reservoir/ Pisciculture purpose (for completely exhausted part), dimension of the pit(s) alongwith capacity should be furnished in tabular form for each pit and such excavations should be fenced to avoid any danger to public safety. Clarification: 1. Proposal for conversion of mined out pit into water reservoir/ Pisciculture should be suitably supported by a brief calculation for accumulation of water into the pit considering average rainfall in the area, catchment area, drainage direction etc. justifying the capacity of the reservoir. 2. For any water body present within lease area (reservoir/settling tank etc.), a final qualitative analysis should be done for the samples drawn preferably in the last fortnight of the expiry of the lease and its report should be submitted to IBM.
11.2.6	**Air Quality Management:** Describe the existing air quality status. The mitigative measures to be taken for prevention of pollution of air may be described.
11.2.7	**Waste Management:** Describe the type, quality and quantity of overburden, mineral reject etc. available and their disposal practice. If no utilization of waste material is proposed, the manner in which the waste material will be stabilized may be described. The protective measures to be taken for prevention of siltation, erosion and dust generation from these waste materials may also be described. If toxic and hazardous elements are present in the waste material, the protective measures to be taken

	for prevention of their dispersal in the air environment, leaching in the surface and ground water etc., may be described.
	Note: As far as possible, the dumps should be kept outside the ultimate pit limits for the closure period since the mining operation in these leases are continuing till 31.03.2020 or till 50 years from the date of grant of ML so that mine can be restarted after auction of the area with least developmental work and with minimum time gap. No unstabilized dump should be left at the mine site. All waste dumps should be suitably stabilized through terracing and garland drain and retaining wall should invariably be constructed along the toe of the dumps to avoid any degradation of adjacent land due to wash off.
11.2.8	**Tailings Dam Management**: The steps to be taken for protection and stability of tailing dam, stabilization of tailing material and its utilization, periodic de-silting measures upto closure period to prevent water pollution from tailings etc., arrangement for surplus water overflow along with detail design, structural stability studies, the embankment seepage loss into the receiving environment and ground water contaminant if any may be described. Final closure should include the measures taken to secure the tailing dam to avoid any danger to public safety and to avoid any degradation of environment in future.
11.2.9	Surface subsidence mitigation measures through backfilling of underground mine voids or by any other means and its monitoring mechanism.
11.2.10	A brief about surface features existing within a periphery of 500 m from the lease boundary as per the Rule 32(5)(b) of MCDR'2017 supported by an Environment Plan in terms of the said rule
11.2.11	**Infrastructure Details**: The existing infrastructural facilities available such as roads, aerial ropeways, conveyer belts, railways, power lines, buildings & structures, water treatment plant, transport, water supply sources the permanent civil structures, plants, ropeways, belt conveyors in the area etc., and their future utilization may be evaluated on case to case basis
	Note: Based on the balance reserves/ type of deposit / use of mineral etc., lessee may indicate the possibility to retain the area in the auction. In such case, huge savings on infrastructural facilities available in the area may be observed, especially for the cases where beneficiation plants/ permanent civil structures/

	ropeways, belt conveyors etc. are available within the ML. Decommissioning or demolishing of infrastructure should be kept as last option for any expiring ML area. Approximate Value of each fixed assets/infrastructural facility (as mentioned above) available in the ML area should be given in tabular format alongwith its decommissioning cost and final value of the decommissioned infrastructural facilities. In no case, any infrastructural facility which is an essential commodity/related to basic need or which absence may cause any degradation of environment or any damage to flora and fauna in and around the ML area or any danger to public safety or public infrastructure such as rail, road etc. (Such as water supply, water treatment plant, power lines etc.) should be decommissioned without prior intimation/approval of appropriate authority. Any building or permanent structure etc. which may cause any danger to public safety or public infrastructure such as rail, road etc. should not be decommissioned without an intimation approval of the appropriate authority.
11.2.12	**Disposal of Mining Machinery:** The decommissioning of mining machineries and their possible post mining utilization, if any, to be described.
	Note: With reference to the extent of mechanization given in the 'Mining' chapter.
11.2.13	**Disaster Management and Risk Assessment**: This may deal with action plan for high risk accidents like landslides, subsidence flood, inundation in underground mines, fire, seismic activities, tailing dam failure etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authority may also be described.
11.2.14	**Economic Repercussions of closure of mine and manpower retrenchments:** Manpower retrenchment, compensation, if any, to be given in consultation with local district administration, socio-economic repercussions and remedial measures consequent to the closure of mines may be described, specifically stating the following in a tabular form: -
	1. Number of local residents employed in the mine, status of the continuation of family occupation and scope of joining the occupation back. **2.** Compensation, if any, given or to be given to the employees connecting with sustenance of himself and their family members. **3.** Satellite occupations connected to the mining industry - number of persons engaged therein - continuance of such

	business after mine closes. **4.** Continued engagement of employees in the rehabilitated status of mining lease area and any other remnant activities. **5.** Envisaged repercussions on the expectation of the society around due to closure of mine.
11.2.15	**Time Scheduling for Abandonment:** The details of time schedule of all abandonment operations as proposed in 'Final Reclamation Plan' above may be described here. The manpower and other resources required for completion of proposed job may be described. The schedule of such operations may also be supplemented by PERT (Programme Evaluation & Review Technique), Bar chart etc. for the two years closure period.
11.2.16	**Abandonment Cost:** Cost to be estimated based on the activities required for implementing the protective and rehabilitation measures including their maintenance and monitoring programme.

11.3	The information on protective measures for reclamation and rehabilitation works year wise may be provided as per the following table.			
Items	Details	Existing(till now)^^	Proposals	
			(2018-19)	2019-20)
Dump management	Area afforested (ha)			
	No of saplings planted			
	Cumulative no of plants			
	Cost including watch and care during the year			
Management of worked out benches	Area available for rehabilitation (ha)			
	Afforestation done (ha)			
	No of saplings planted in the year			
	Cumulative no of plants			
	Any other method of rehabilitation (specify)			
	Cost including watch and care during the year			
Reclamation and Rehabilitation by backfilling	Void available for Backfilling (L x B x D) pit-wise /stope wise			
	Void filled by waste /tailings			
	Afforestation on the backfilled area			
	Rehabilitation by making water reservoir			
	Any other means (specify)			
Rehabilitation of waste land within lease	Area available (ha)			
	Area rehabilitated			
	Method of rehabilitation			
Others				

^^To be indicated wherever applicable

11.4	**Financial Assurance** - Table indicating the break-up of areas in the Mining Lease For Calculation of Financial assurance					
Sl.	items	Area put to use at start of Plan period (ha)	Additional area requirement during Closure period (ha)	Total area to be put in used (ha)	Area considered as fully reclaimed & rehabilitated ha	Net area considered for calculation ha
(a)	(b)	(c)	(d)	(e)=(c+d)	f	(g)=(e-f)
1	Area under mining					
2	Storage for top soil					
3	Waste dump site					
4	Mineral storage					
5	Infrastructure workshop, administrative building etc.					
6	Roads					
7	Railways					
8	Tailing pond					
9	Effluent Treatment Plant					
10	Mineral Separation Plant					
11	Township area					
12	Others (to specify)					
13	Undisturbed Area					
14	Grand Total					

11.5	**Financial assurance details -**
	Issuing bank, date of issue, validity, BG No. etc. to be provided.

12.0	**Interest / intention of current lessee of the expiring lease, if any**
	To be indicated/ described with justification such as infrastructural cost incurred, logistics costs (mainly associated with the cases where end use plant is nearby the mine), land acquisition aspects, availability of contiguous area-whether mineralized or non-mineralized, capacity expansion program/proposals with proportionate employment potential, expected CSR activities and initiatives, SDF approach etc.

13.0	**Plans and Sections to be enclosed**
	All the applicable (opencast or underground as the case may be) statutory plans prepared digitally and required in terms of Rule 32 of MCDR'2017 alongwith a plan showing the year-wise proposals for two years of final closure period on preferably 1:2000 scale, fulfilling the requirements of Rule 31 and prepared in terms of Rule 34 of the MCDR'2017 should be enclosed with the document.

List of documents to be Annexed	
1	Copy of lease deed
2	Documents in support of ownership of land/Surface rights
3	Copy of last approval of MP/SOM letter,
4	Copy of valid EC/FC clearances from MOEF.
5	Notifications, if any, by MoEF in regard to concern Ecological Sensitive Zone for Wildlife Sanctuary/ Birdlife Sanctuary etc.
6	Copy of NOC from Chief Wildlife Warden for permitting Mining Operations, if applicable
7	Copy of valid consent to operate from SPCB.
8	Few photographs showing Land use of the lease area, environmental status of the area/Ground Control Points/Lease Boundary Pillars
9	Certificate of registration of the company and memorandum of the association
10	Photo Identity Card of Lessee/Nominated Owner with permanent address proof
11	Copy of Board Resolution for declaration of nominated owner as per Mines Act 1952
12	List of members of Board of Directors.
13	Copies of violation letters issued by Indian Bureau of Mines or statutory obligations issued by any other authority and compliance thereof
14	Copy of Feasibility report as per MEMC Rules 2015
15	Copies of Form 'I' and 'J' submitted under Rule 47 & 48 of MCDR 2017 wherever applicable
16	Copies of analysis report from NABL accredited laboratory or similar accredited laboratory and third party NABL accredited lab or Govt. lab etc. (wherever applicable) in terms of item 12 of Part IV-A of MEMC Rules'2015
17	Copy of Financial Assurance
18	Any other documents in support of the contents of Final Mine Closure Plan

Note:- All the Certificates/ Consents/Undertakings and Annexures to be enclosed at the end of the text part/FMCP format.

ANNEXURE-I
MODEL CERTIFICATE TO BE ISSUED UNDER RULE 21(4) OF MCDR' 2017

भारतसरकार
GOVERNMENT OF INDIA
खानमंत्रालय
MINISTRY OF MINES
भारतीय खानब्यूरो
INDIAN BUREAU OF MINES
..... क्षेत्रीय कार्यालय
..... REGIONAL OFFICE

No.---------- Dated ----------

CERTIFICATE

In exercise of the powers conferred on me under Sub-Rule (4) of Rule 21 of Mineral Conservation and Development Rules, 2017 delegated vide Notification No. T-43010/CGBM/2014 dated 11th May 2017 and published in the Gazette of India dated 31st May 2017; I, hereby, certify that the protective, reclamation and rehabilitation work in accordance with the Final Mine Closure Plan approved vide letter No.---------- dated---------- have been carried out in the mining lease / part of mining lease over an area of ---------Ha in respect of ---------- (name of the mine and mineral) mine held by Messer's /Shri/Smt. ----------in ---------- district in the State of ----------.

This Certificate is issued without prejudice to any other laws applicable to the mine/lease area from time to time and also without any prejudice to any other order or direction from any court of competent jurisdiction.

(----------)
Regional Controller of Mines/DCOM (I/C),
Indian Bureau of Mines

To,
Messer's /Shri/Smt. ------,
----------,
----------,
----------.

Not On Original:
Copy for kind information to the:
1. The Chief Controller of Mines, Indian Bureau of Mines, Nagpur

2. The Controller of Mines (CZ/EZ/NZ/SZ), MDR Division, Indian Bureau of Mines.
1. Director, Directorate of Mines & Geology, (whatever name) Govt. of ----------.

(----------)
Regional Controller of Mines/DCOM (I/C),
Indian Bureau of Mines