



**Mahanadi
Coalfields
Limited**
(A Subsidiary of Coal India Limited)
A Mini Ratna Company

OFFICE OF PROJECT OFFICER Lajkura Opencast Project, IB Valley Area,
Brajrajnagar, Dist-Jharsuguda, Odisha-768216, Ph no 06645-242095

Ref.No.MCL/IBVA/PO/(LOCP)/Envt/2022/ 381

Date- 12/13 - 05-2022

BY SPEED POST

To,
The Chief Conservator of Forest,
Ministry of Environment and Forest,
Regional Office, Eastern Region,
A-3,Chandrashekharapur,Bhubaneswar-751023

Sub-Submission of Half Yearly Compliance report of "Environmental Clearance Condition" in respect of Lajkura OCP (Expansion from 3.0 MTPA to 4.5 MTPA) for the period OCTOBER-2021 to MARCH-2022.

Dear Sir,

Enclosed please find herewith 'Half Yearly Compliance report' along with form I, II & III and abstract of the 'monitoring report' of Air, Water, Noise & Effluent quality in respect of Lajkura Open Cast Project(4.5 MTPA) for the period from **OCTOBER-2021 to MARCH-2022**.

This is for your kind perusal & necessary action.

Thanking You,

Yours Sincerely,


PROJECT OFFICER
LAJKURA OCP

Copy to:

- 1 Director E.I.A.; Monitoring Cell, Ministry of Environment and Forest,
Paryavaran Bhawan, C.G.O. Complex, New Delhi-110003 – **BY SPEED POST**
- 2 Chairman, State Pollution Control Board Odisha, Paribesh Bhawan
Nilakanthanagar, Unit-VIII, Bhubaneswar-751012 Bhubaneswar. (**Soft Copy via Email**)
- 3 Regional Officer, State Pollution Control Board Odisha, Cox Colony, Sant. Marry Hospital
Road, Jharsuguda. (**Soft Copy via Email**)

Distributions to :-

- 1 Chief General Manager, (Envt.), MCL, HQ, Burla, Sambalpur. (**Soft Copy via Email**).
- 2 General Manager, Ib Valley Area. (**Soft Copy via Email**).
- 3 Area Environment Officer, IB Valley Area. (**Soft Copy via Email**)

HALF-YEARLY PROGRESS
REPORT OF
COMPLIANCE TO
ENVIRONMENTAL
CLEARANCE CONDITIONS
(OCTOBER-2021 TO MARCH-2022)

Lajkura OCP Expn. 4.5 MTY
(EXPANSION FROM 3.0 MTPA TO 4.5 MTY)
IB Valley Area



Mahanadi Coal Fields Limited

(A subsidiary of Coal India Limited)

MCL - A Mini Ratna Company

LAJKURA OCP



Washeries Ltd

Mukesh Mobile
Repair Shop

Katatkira Playgrou

LAJKURA OPEN
CAST MINES

Lajkura open cast siding

endra pradhan

Cineplexx-Bra

VECV Workshop
Lajkura Mines

Lajkura Village
Playground

**HALF-YEARLY REPORT OF COMPLIANCE WITH
ENVIRONMENTAL CLEARANCE CONDITIONS
(HALF YEARLY ENDING MARCH 2022)**

Name of the project: Lajkura OCP Expn. (Expansion from 3.0 MTPA to 4.5 MTPA)

No. & Date of MOE Clearance letter No: J-11015/423/2008-IA-II (M) dated: - 30.01.2015

<i>Con diti</i>	<i>(A) Specific conditions</i>	<i>Compliance Details</i>															
(i)	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.	<p>The mine production is planned keeping in view of the production permission granted in EC. The details of production since last three years and of present year up to September 2021 are given below-</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Year</th> <th style="text-align: left;">Coal Production</th> <th style="text-align: left;">EC Accorded</th> </tr> </thead> <tbody> <tr> <td>2018-19</td> <td>4,499 MT</td> <td>4.5 MTPA</td> </tr> <tr> <td>2019-20</td> <td>2,839 MT</td> <td>4.5 MTPA</td> </tr> <tr> <td>2020-21</td> <td>4,499 MT</td> <td>4.5 MTPA</td> </tr> <tr> <td>2021-22</td> <td>4,499 MT</td> <td>4.5 MTPA</td> </tr> </tbody> </table>	Year	Coal Production	EC Accorded	2018-19	4,499 MT	4.5 MTPA	2019-20	2,839 MT	4.5 MTPA	2020-21	4,499 MT	4.5 MTPA	2021-22	4,499 MT	4.5 MTPA
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2021-22	4,499 MT	4.5 MTPA															
(ii)	The validity of the EC is for the life of the mine or as specified in the EIA Notification 2006, whichever is earlier.	<p>The conditions stipulated in the EC are complied with. The project is presently working within the existing ML area of 721.29 ha. Forest clearance has been acquired. Mine plan is enclosed as Annexure-1). Balance life of the mine is 7 years (approx.) as on 01/04/2022.</p>															

<p>(iii)</p>	<p>A plan be made urgently for mechanised loading of railway wagon at the railway siding to reduce dust generation from loading by pay loader.</p>	<p>For mechanized loading of railway wagon, work for RLS with surge bin at Lajkura Siding- 15 MTY by L&T, Mumbai is in progress. Work Order value is Rs.285,05,44,998.00. Letter of acceptance issued on 20/01/2021. Completion period is 2275 days (Construction, commissioning and O&M) Four nos fixed water cannon has been installed at siding to control the loading dust.</p>
<p>(iv)</p>	<p>Drills shall be wet operated. Roads shall be metal topped and mechanical sweepers shall be regularly deployed to clear the dust off the main approach road and mineral transportation roads. Water sprinkling (fixed and mist type, mobile) shall be regularly done along the main roads.</p>	<p>Total drill machines on roll is 5. Out of this, 3 nos. electric drills are wet operated and 2 nos. diesel drills are fitted with dust collectors. Airborne dust on haul roads and coal transportation roads are being suppressed with 28 kl Mobile water sprinklers. Further Mobile Water sprinklers on hiring are also deployed. A truck mounted fog cannon of 40 mtr. throw is also engaged for dustsuppression along the main roads and coal transportation roads. Work is in progress for concreting of coal transport corridor under Lajkura OCP for a length of 8.584 km for an amount of Rs.63.46 Crs. Out of which 85% has been completed. Work order for hired Mechanical Road Sweeper for IBVA is to be placed, the operation of mechanical sweeper will start very shortly. Four fixed Fog Cannon at siding and two fixed Fog Cannon at CHP has been installed to control the fugitive dust.</p>
	<p>No fly ash shall be dumped into the de-coaled void without feasibility study on long-term impacts on the aquifers and life systems and without prior approval of the ministry.</p>	<p>Fly ash shall not be dumped into de-coaled void without feasibility studies on long term impacts on the aquifers and life system and without prior approval of the Ministry.At Lajkura OCP,dumping of Fly ash into de-coaled area is not possible because volume of Overburden generated is much more than de-coaled area and additional external dump has been created to accomodate OB.</p>

(vi)	Piezometers shall be installed up to the depth of the mine.	Nine piezometers are in operation in nearby mines including one in Lajkura OCP. Monitoring is done in these piezometers on regular basis.
(vii)	Air Quality shall be monitored and the report submitted to the Regional Office of the MoEF and to the Odisha SPCB.	Air quality is monitored by CMPDIL, RI-VII, Bhubaneswar on fortnightly basis and the reports are submitted to the Regional Office of the MoEF and to the Odisha SPCB regularly also available o company web site. For online monitoring two nos of AQCMMS have been installed and functional. Monitoring stations name and coordinates are stated herewith. (1) Near PO office: 21.822439 N. 83.914856E, (2) Near South coal stockyard: 21.812652 N. 83.901910 E (3) VIP guest house, Ib valley: 21.836951 N. 83.914797 E Khokelmal: 21.814918 N. 83.878341 E.
(viii)	Coal transportation in pit by tippers, surface to siding by tippers and loading at siding by pay loader/SILO.	Coal from face to siding III is being transported by tippers. At siding III, coal is being loaded into Railway wagons by pay loaders. Preliminary work for RLS with surge bin at Lajkura siding-15 MTY is in progress.
(ix)	The production shall be within the same mining lease area.	Coal production of 4.5 MTPA is within the same mining lease area of 721.29 Ha.
(x)	The depth of the internal void shall be 35 m from the ground level and should be adequate for fishery purpose.	At the final closure, the internal void will be kept 35 mtrs from the ground level

(xi)	The production shall be within the same Mining Lease area.	Coal production of 4.5 MTPA is within the same mining lease area of 721.29 Ha.
(xii)	The OB shall be completely re handled at the end of the mining and will be back filled upto the ground level and covered with about a meter thick top soil and put to use. The land after mining shall be brought back for agriculture purpose.	At the end of the mining, the de-coaled area will be backfilled with OB by re-handling and after reaching final height of OB dump, one meter thick top soil will be spreaded over for agriculture purpose
(xiii)	Garland drains be provided.	Garland drains are provided along the periphery of the mine. The total length of garland drain is 2 km of size 2.5 m X 2.0 m with 50% safety margin over the peak rainfall and having gradient to comfortably free flow of water towards mine sump.

(xiv)	<p>Appropriate embankment shall be provided along the side of the river/nallah near or adjacent to the mine.</p>	<p>Embankment of adequate size has been provided along the side of the nallah (Baghmara Nallah) for a length of 1.2 km in northern side of the mine. The embankment is about 11 mtrs above the HFL and about 35 mtrs in width. The gradient of the surface of the mine area above the nallah is made towards the mine sump which facilitate surface runoff in to the mine sump.</p>
(xv)	<p>The CSR cost should be Rs 5 per tonnes of coal produced which should be adjusted as per the annual inflation.</p>	<p>As per MCL's policy for CSR -2014 , CSR fund is allocated based on 2% of the average net profit of the Company for the three immediate preceding financial years or Rs.2.00 per tonne of coal production of previous year whichever is higher. Average net profit shall be computed in accordance with the provision of Section 198 of the Company Act 2013. In 2020-21, Rs.2.43 Cr. And in the year 2021-22 164.97 lakh has been spent towards CSR in Ib Valley Area.</p>
(xvi)	<p>Everybody in the core area should be provided with mask for protection against fugitive dust emissions.</p>	<p>Dust masks are provided to every person working in core area.</p>

(xvii)	<p>Dust mask to be provided to everyone working in the mining area.</p>	<p>Dust mask has been provided to every person working in the mining area. It is also required under Coal Mine Regulation. Total distributions in the calendar year 2021-22 are:</p> <ul style="list-style-type: none"> Dust Mask - 00 nos ✓ Ear Muff/Ear Seal - 05 nos Safety Shoes - 314 nos Safety Helmets - 278 nos <p>From Jan-22 to Mach-22 distribution of safety gazets are nil .More than 3000 corona mask has been distributed.</p>
(xviii)	<p>The supervisory staff should be held personally responsible for ensuring compulsory wearing of dust mask in the core area.</p>	<p>The supervisory staff have been instructed to be held responsible for ensuring compulsory wearing of dust masks by the persons in the core area. Further the duties & responsibilities are well defined related with Safety and health aspects of work persons in Coal Mines Regulation.</p>

(xix) People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.

The periodic health check-up of all employees is being done at company hospital as per the rules enacted under Mines Act. The medical investigations are covered under initial and periodical medical examinations. Every employee undergo PME once in every 5 year (within the age limit up to 50 yrs), once in every 03 years (within the age 50 to 60 yrs) and annually for every rescue trained persons. The tests include chest radiography, LFT, audiometric, lung diseases and other occupational diseases in the Central Hospital, Mandalia. No case related to lung disease was found

	2018	2019	2020	2021	2022
IME (DEPT.)	05	04	17	05	00
IME (CONT.)	125	79	04	372	00
PME	147	116	135	125	NA
(DEPT.)	ACHIVEMENT	149	117	141	125
				125	33

(xx) The mining area should be surrounded by green belt having thick closed thick canopy of the tree cover

Green belt is existing as natural forest in the western and southern boundary of the mine. The Eastern and northern part of mine boundary has been thickly planted and vegetation has grown up. Along periphery of mine lease , 36.710 ha. (7342 nos. plants) and under safety zone , around mine boundary 4.004 ha.(800 nos. plants) have been planted . Apart from the above, area planted is 139.53 ha out of excavated area of 190.53 ha and total no. of saplings planted are 363890 nos. Total plantation is 41.43% of the total broken up area. The afforestation programme at the post mining stage is incorporated in the project report and project is going on as per plan.

Species are: Neem, Chatian, Amla, Karanj, Bamboo, Bahada, Sunari, Radha chuda, Krishna chuda, Teak, Sisoo, Mango etc.

(xxi)	<p>The embankment constructed along the river boundary shall be of suitable dimensions and critical Patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and mine inundation.</p>	<p>There is no river flowing nearby. The nearest IB river is about 5 km. from the project site. But one seasonal Baghmara nalla is flowing nearby. The embankment existing between Baghmara nullah and mine is of sufficient dimension and size is 1.2 km X 35 mtr X 11 mtrs (above HFL). There is no danger of inundation and nullah is seasonal. Grass and plantation have been done over the slope to arrest soil erosion.</p>
(xxii)	<p>There shall be no overflow of OB into the river and into the agriculture fields and massive plantation of native species shall be taken up in the areabetween the river and project.</p>	<p>There is no river or agriculture land nearby. OB generated is used for back filling of de-coaled area of the mine, so there is no overflow of OB into outside agriculture fields. Recently a small new external OB dump has been created but it is well protected. The OB benches have been made with slope angle of 28° (average). Catch drains have been provided for rain water and directed to mine sump. Backfilled area which is technically reclaimed is planted to arrest soil erosion.</p>
(xxiii)	<p>OB shall be stacked at three-earmarked external OB dumpsites(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation become self-sustaining. Compliance status shall be submitted to the ministry of Environment, Forest and Climate Change and its concerned Regional office on yearly basis.</p>	<p>OB is stacked at one external OB dump out of three ear-marked external OB dump sites in the project. The average slope of the dump is not exceeding 28°. The existing reclaimed dump sites have become self-sustainable. The half yearly compliance status is submitted to MOEF&CC and its regional office at Bhubaneswar in schedule time.</p>

(xxiv)	<p>Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development, etc. The drain shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.</p>	<p>The length of existing catch drain is approx. 2700 m and the capacity of siltation sump is 30.45 lakh cu. meters and total max. runoff of the mine is 24.33 lakh cub. meters (NIT. Rourkela study report). Total runoff is collected in the mine sump. The size of Garland drains (size, gradient and length) and sump capacity is designed keeping in sufficient safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Water so collected is utilised for mining use, in roads and plantation work. The existing sump capacity is sufficient to allow proper settling of silt material.</p>
(xxv)	<p>Dimensions of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.</p>	<p>Retaining wall, at the toe of the dumps, has been provided to arrest run-off and siltation. Grassing is also done on the dump slopes.</p>
(xxvi)	<p>Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points etc.</p>	<p>Due to introduction of surface miner maximum quantity of coal produced is of (-) 100 mm size which is directly transported to siding right from face, eliminating the regular use of CHP. The CHP is equipped with water spraying system as well as enclosures at crushing and transfer points and along conveyor belts, have been provided to check fugitive emission from crushing operation, conveyor system, haulage roads, transfer points, etc. Two nos fixed water cannon has been installed at CHP to control the air born dust.</p>

(xxvii)	Drills shall be wet operated	3 nos, diesel drills are having wet drilling arrangement and rest 2 nos. electrical drills are having dust collectors arrangement. Due care is taken to prevent dust emission and getting it airborne.
(xxviii)	The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.	Coal transportation road is maintained properly. All haul roads and mineral transportation roads are kept wet to control airborne dust with the help of Mobile water sprinklers and truck mounted fog cannon. All transportation roads are also maintained regularly and ruts and pot holes are being filled up by road metals as and when required. Green belt comprising of native species have been developed all along the major approach roads.
(xxix)	Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	Controlled blasting by using delay detonators is in practice as per guideline of Directorate General of Mines Safety to control ground vibration and fly rock and executed under close supervision of expert team

(xxx)	<p>A progressive afforestation plan shall be implemented covering an area of 445.68ha at the end of mining, which includes reclaimed External OB dump area (189.13 ha), Internal OB dump area (156.67 ha), along roads and green belt (398.34 ha), Undisturbed area (72.39 ha) built up area (26.89 ha) and in township located outside the lease by planting native species in consultation with the local DFO/ Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.</p>	<p>Progressive Afforestation program is in force. Every year plantation target is set up according to availability of area. Present status is as follows-</p> <p>External OB dump-33.3 ha.-85940 nos. Internal OB dump/Back filled area – 27.03 ha.-88400 nos. Backfilled slope-7.2 ha.- 18000nos. Block/Vacant Land – 67 ha.-159050 nos Avenue –5.0 ha.- 12500 nos.</p> <p>The density of the trees is 2500 plants. Further, along periphery of the mine lease, 36.710 ha. (7342 nos. plants) and under safety zone, around mine boundary 4.004 ha. (800 nos. plants) have been planted.</p> <p>For financial year 2022-23,target is to do plantation in 4 ha dump slop area.</p>
(xxxii)	<p>An estimated total 359.35 Mm³ of OB will be generated during the entire life of the mine. Out of which 47.50 Mm³ of OB will be dumped in the three external OB Dumps an earmarked area covering 106.63 ha of land with height of 90m. 311.85 Mm³ of will be one internal OB dump in covering an area of 398.34 ha with height upto the ground level. The maximum height of external OB Dump for hard OB will not exceed 90m. the maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.</p>	<p>OB generated at present is totally backfilled in the voids of the mine which is sufficient to accommodate. The mine has been started working in the expansion area after grant of Forest clearance Stage-II. When mine will advance, there will be requirement of external dumps. The average OB dump slope angle is 28° & dump height is kept maximum 90 mtrs.</p> <p><u>As on 31.03.2022</u> :- Area of Ext. OB dump = 43.705 Ha. Volume of OB in external dump site is 16.282 Mm³ Backfilled area = 124.897 Ha. Volume of OB backfilled is 122.599 Mm³</p>

(xxxii)	<p>The proponent should prepare restoration and reclamation plan for the degraded area. The land is used in a productive and sustainable manner.</p>	<p>The reclamation plan has been incorporated in the project report. The broken/ degraded area is back filled and restored as per the plan. Backfilled area is developed into green in sustainable manner. Total backfilled area is 124.897 Ha out of 193.66 Ha excavated area till March-22 and plantation has been done over 27.03 Ha and also 7.2 Ha on backfilled slope.</p>
(xxxiii)	<p>Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.</p>	<p>Due initiative has been taken up for gap plantation in reserve forest near Laikera of Jharsuguda District as compensatory afforestation. Villages surrounding the mine has been covered under CSR. Further, under Ib Valley Area, 80,000 nos. plants in 2017-18 and 75000nos. plants in 2018-19 have been planted by Forest department, Jharsuguda in nearby vacant land area. Proposal is under process for plantation of 4 ha back filled slope. in 2022-23 by Forest department.</p>
(xxxiv)	<p>The mining shall be phased out in a sustainable manner. No extra over burden dumps are permitted.</p>	<p>Mining is done as per approved mining plan. No extra OB dumps are created.</p>
(xxxv)	<p>No ground water shall be used for the mining operations.</p>	<p>No ground water is used for mining purpose. Surface runoff is collected and used for industrial purpose.</p>

(xxxvi)	<p>Of the total quarry area of 398.34 ha the backfilled quarry area of 398.34 ha shall be reclaimed with plantation and stabilized with plantation/ afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.</p>	<p>Reclamation is being carried out in phase manner as per plan and at the end of mining the targeted area will be covered with afforestation. Presently plantation is being carried out by Chhattisgarh Rajya Van Vikas Nigam Ltd. In the year 2015-16 18000 nos. saplings was planted over dump slope. In backfilled area 88400 nos. plants had planted till date.</p>
(xxxvii)	<p>Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon(August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment, Forests and Climate Change and the Central Pollution Control Board quarterly within one month of monitoring.</p>	<p>Monitoring of ground water level and quality is being carried out in nearby village by CMPDIL a subsidiary of Coal India and report thereof is sent to Ministry of Environment & Forest and Pollution Board regularly. Further piezometers have been installed for Lajkura OCP and in nearby mines. CMPDIL is monitoring. The reports are within the permissible limits. Work Order has been issued to M/s Sujalam Consultants to conduct Hydrological study.</p>

(xxxviii)	<p>The company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby villages in case the village well go dry due to dewatering of mine.</p>	<p>The existing two mine sumps and one sedimentation pond are good measures for ground water recharge. From the report of piezometer and well, ground water is not depleted. Rain water harvesting system has been installed in the colony of GM complex. Drinking water is arranged to meet water requirement of nearby village (s) namely Madhubannagar, Brajrajnagar town ship no.1 and Gopivihar in summer.</p>
(xxxix)	<p>Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.</p>	<p>STP of capacity 0.5 MLD in Adarsh Nagar Colony under Lajkura OCP has been constructed at a cost of Rs 90 Lakhs in 2014-15 and is in operation. An ETP is existing in workshop and is in working condition. The treated water of ETP is reused and report of water quality is submitted to Pollution Control Board regularly. Reports are well within the prescribed limit.</p>
(xl)	<p>Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialized agency/ institution within the District/ State and the results reported to this Ministry and to DGMS.</p>	<p>The periodic health check-up of all employees is being done at company hospital. The medical investigations are covered under initial and periodical medical examinations. Every employee undergo PME once in every 5 year (within the age limit up to 50 yrs), once in every 03 years (within the age 50 to 60 yrs) and annually for every rescue trained persons. The tests include chest radiography, LFT, audiometric, lung diseases and other occupational diseases in the Central Hospital, Mandalia. Special health check up will also be done by specialist doctors through referral at super speciality hospitals.</p>

(xli)	Land oustees shall be compensated as per norms laid out R&R policy of CIL or the National R&R policy or R&R policy of State Government whichever is higher.	Presently R&R policy of State Government (Govt. of Odisha) is being followed for providing compensation to the Land oustees as it provides higher benefit than any other R&R policy as stated.
(xlii)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on the scale of 1:5000) of the core zone and buffer zone, from the start of the project until the end of mine life shall be prepared once in 3 years (for anyone particular season which is consistent in the time series), and the report submitted to MOEF&CC and its concerned Regional office .	For monitoring land use pattern and for post mining land use, the satellite imagery plan prepared under the guidance of CMPDIL and the report has been submitted to MoEF & CC and its regional office vide letter no. MCL/SBP/CGM(ENVT)/EC/19-20/427 dtd 15-05-2019.
(xliii)	A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests within 6 months of grant of this letter for approval, in case expansion in ML area is not implemented.	A detailed Final Mine Closure Plan along with details of Corpus Fund has been submitted to the MOEF&CC. An amount of Rs 36.493 crore has been credited in the Escrow account (till 31/03/2022) including interest, against mine closure cost of Lajkura OCP.

<p>(xiv)</p>	<p>The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.</p>	<p>Welfare measures under CSR are being taken up in consultation with the District Administration of Jharsuguda which in turn consults the concerned Panchayats of the local villages.</p>
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(xlv)

Corporate Environment Responsibility:

The company shall have a well laid down Environment Policy approved by the Board of Directors.

The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringement Order of the company to deal with environmental or forest norms/conditions.

The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with environmental clearance conditions shall be furnished.

To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

Coal India Ltd. is having well defined Environment policy and standard operating procedure approved by the Board. Separate Environment department at CIL HQ is looking into the matter of environment issues and also submitting reports to the Board of Directors. MCL, as a subsidiary company of CIL, following the same environment policy. The environment policy of Company is available on company's web site.

The salient points of the policy are-

1. Commitment for mitigation of pollution, reclamation of degraded land, preservation of Bio-diversity and proper disposal of waste.
2. Ensuring compliance of EC norms.
3. Due consideration of sustainable development.
4. Implement EMP effectively.
5. Create environmental awareness among employees.


Condition No..	B. General conditions	Compliance Details
(i)	No change in technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	The mining technology is Shovel-Dumper/tipper combination for OB removal and almost 100% coal production is done through Surface Miner to produce (-)100 mm size coal and enhance better environment conditions as it eliminates drilling, blasting and crushing of coal (i.e. use of CHP) thus reducing dust generation. No change in technology and scope of working shall be made without prior approval of the MOEF&CC.
(ii)	No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.	There will be no change in the calendar plan regarding production of coal and waste. Details of the production of last four years: - In 2018-19 = 4.5 MT, In 2019-20 = 2.84MT & in 2020-21=4.5 MT, 2021-22= 4.5 MT
(iii)	Four ambient air quality monitoring station shall be established in the core zone as well as in the buffer zone for PM ₁₀ , PM _{2.5} SO ₂ and NO _x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in particulates shall be carried out at least once in six month.	Four ambient air quality monitoring stations have been established - three monitoring stations in core zone and one in buffer zone. Locations of these stations are decided in consultation with Regional officer OSPCB, Jharsuguda. These are - 1. Stn. no.1- Near Project Office, LOCP 2. Stn.no. 2- Near South Coal Stock 3. Stn. No.3- Near VIP Guest House 4. Stn.no. 4 - Near Khokelmal Stn. no.1,2 & 3 are in core zone and Stn. no. 4 is in buffer zone. Heavy metals are also monitored once in six months.
(iv)	Data on ambient air quality (PM ₁₀ , PM _{2.5} SO ₂ and NO _x and heavy metals such as Hg, As, Ni, Cr, etc.) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months.	Ambient Air quality data, heavy metals and other monitoring data are monitored as per the prescribed schedule and report submitted to the MOEF&CC, its regional office and to State Pollution Control Board once in six month. Reports are within the permissible limits.

(v)	Adequate measures shall be taken for control of noise levels below 85dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	HEMM are provided with inbuilt system designed to minimize noise level. Ear plug/ ear muffs are also provided to work persons who may expose to noise. Total no. of ear protection devices issued in the calendar year 2021 are 05 nos. As per monitoring report the noise level is within prescribed limit.
(vi)	Industrial waste water (workshop and wastewater from mine) shall be properly collected and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19 th May 1993 and 31 st December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.	Workshop effluent is treated in ETP/OGTP located near to workshop and the treated water is re-used for industrial purpose. Mine waste water is treated in MDTP. The quality of treated water is within the prescribed standards.
(vii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of the material shall be covered with tarpaulins and optimally loaded.	All departmental/contractual vehicles of LOCP are regularly checked and maintained as per maintenance & monitoring schedule to control vehicular emissions. All trucks are optimally loaded and are covered with tarpaulin before they are allowed to go outside of the mine.
(viii)	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State pollution Control Board and data got analysed through a laboratory recognized under EP rules, 1986.	Monitoring of environmental quality parameters are being carried out by CMPDIL, RI-VI, BBSR which have laboratories recognized under EP rules, 1986 and results of monitoring are being submitted to OSPCB monthly and also made available in company website..
(ix)	Personnel working in dusty areas shall wear protective respiratory devices and they shall be provided with adequate training and information on safety and health aspects.Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to expose to dust and to take corrective measures, if needed.	Due precautions are taken to reduce the dust production as well as getting it airborne. Apart from these personal protective equipments are provided to the workers who are exposed to dust producing area. Under Occupational health surveillance programme 1/5 of the total manpower goes for periodic health check up every year. Moreover all the employees are given training periodically as per Vocational Training Rules and its concerned DGMS circulars on health and safety aspects.

(x)	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	An occupational health cell is established at Central Hospital, Mandalia under Ib Valley Area, which is manned by specialized doctors and paramedical staff trained in occupational medicines. IME (both departmental & contractual employees) and PME of departmental employees are carried out. They are being checked for occupational diseases, hearing impairment and others in the Central Hospital, IB Valley area.. No case related to occupational disease was noticed.
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the head of the company.	A separate department to look after Environment related matters is in existence at Corporate office. The department is headed by General Manager (Environment), A well-defined organisation from top downwards right up to area and project level with well laid down span of control is in operation. The head of the department reports directly to Head of the Company.
(xii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not diverted for other purpose. Year wise expenditure shall be reported to this Ministry and its concerned Regional Office .	The fund earmarked for environmental protection measures is kept under the head- "Environment" and is not diverted for any other purpose. The expenditure under Environment for the year 2020-21 is Rs. 22.024Crore (Approx). The report is submitted every year in Form – V to the Ministry and its Regional Office by 30 th September.
(xiii)	The Project authorizes shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the Ministry of Environment & Forests at http://envfor.nic.in .	The EC was published in two newspapers namely 'New Indian Express' BBSR on 13.02.2015 (English daily) and 'Sambad' (Odia daily) on date 13.02.2015.

(xiv)	<p>A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila/Parisdad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/ representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.</p>	<p>A copy of the environmental clearance letter has been sent to Panchayat/Zilla Parisad, Municipal Corporation and local NGO. A copy of the clearance letter is also available on Company's web site www.mahanadicoal.in</p>
(xv)	<p>A copy of the clearance letter shall be displayed on the website of the concerned SPCB. The EC letter shall also be displayed at the regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.</p>	<p>Copy sent to State Pollution Control Board for uploading in their website. Copy of the EC has also been sent to the Collector's office, Municipal Office and local NGO.</p>
(xvi)	<p>The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of the environmental quality parameter (air, water, noise and soil) and critical pollutants such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient and stack if any) and critical sartorial parameters shall also be displayed at the entrance of the project premises and mines office in corporate office and on the company's website.</p>	<p>EC and all clearances from Pollution Board have been uploaded on company website. The monitoring data of the environmental quality parameter and critical pollutants and critical sartorial parameters are displayed on electronic display board at the entrance of the Project Office. Report of Environmental monitoring data is available on company's web site. Results are within the prescribed limit.</p>

(xvii)	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in email) to the respective Regional office of the MOEF, the respective Zonal Offices of CPCB and the SPCB.	The six monthly compliance report of EC conditions is submitted to the regional office of MOEF&CC and SPCB office by e-mail as well as in hard copies .
(xviii)	The regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/information/ monitoring reports.	Co-operation is extended to regional office and necessary data is submitted as and when required.
(xix)	The environmental statement for each financial year ending 31 st March in Form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of the compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF. by E-mail.	The Environmental Statement (Form-V) in respect of Lajkura OCP for the year 2020-21 has been submitted to OSPCB vide ref.no: एम.सी.एल /मुखालय/पर्यावरण एवं वन/2021/65, दि. 21.09.2021. This is uploaded on the company's website www.mahanadicoal.in along with the status of the compliance of EC conditions.


 27/09/2021
PROJECT OFFICER
LAJKURA OCP

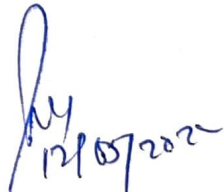


FORM-1

MINISTRY OF ENVIRONMENT & FOREST
REGIONAL OFFICE
MONITORING PROFORMA PART-1 (DATA SHEET)

Sl. No.		
1.	Project Type: River-Valley/ Mining Industry / Thermal /Nuclear/Other(Specify)	Mining Industry
2.	Name of the Project	Lajkura OCP Expn.(4.5 MTY),MCL
3.	Clearance Letter(s)OM no. &Date	J-11015/423/2008-IA.II(M) dated 30.01.2015
4.	Location: (a) district(s),State(s)	Jharsuguda, Odisha.
5.	Address of concerned project (with pincode and telephone/ telex/ Fax nos.)	Office of the Project Officer, Lajkura OCP, PO-Lamtibahal, Brajraj Nagar, Distt-Jharsuguda Odisha, Pin-768216; Phone:(06645-242095)
	Address of Executive project Engineer / Manager (with pincode and telephone/ telex/ Fax nos.)	----do----
6.	Salient Features	
	a. Of the project	Targeted output: 4.5Mty. Minable reserve: 32.13 MT.(As on 01 April-2022) Stripping ratio: 3.40 cum/t;
	b. Mining Technology	Open cast Mining (Shovel-dumper/tipper system of mining for O B removal and Coal seam is extracted with the help of Surface Miner as well as conventional drilling and blasting combined system.)
	c. Of the Environment	Capital cost of Env. Mgmt (As per EMP for expansion of 2.5Mty).—1656.56 Lakhs Resettlement & rehabilitation , Pollution abatement measure cost, Effluent treatment cost, Compensatory afforestation, Arboriculture, Peripheral development, Rain water harvesting etc.
7.	Breakup of the project area:	
	a. Submergence area (Forest and Non-Forest)	721.29ha
	b. Others	
8.	Break-up of project affected population : With enumeration of those losing houses/dwelling units only, both dwelling units and agriculture land and landless labourers/ artisans	Nil
	a. SC, ST/Adivasis	Nil
	b. Others	Nil
9.	Financial Details:	
	a. Project cost as originally planned and incremental Subsequently estimates and the year of price reference.	43.6 cr. for 1 MTPA and then capacity expansion for 3 MTY As per P.R.. Again 50% capacity expansion as per Govt. Notification.
	a. Allocation made for environmental and year wise break up	Rs 43.6 cr. for 1 MTPA and then incremental capacity expansion for 3MTY and 4.5 MTY As per P.R.

		Rs 1656.56 lakhs (As per Chapter-9 PR for management plans, with item-wise expansion of 3.0Mty) . The different heads are resettlement & rehabilitation, land reclamation, Air pollution measures, Water pollution measures, compensatory afforestation and other misc cost etc. Now project is working in 50% expansion within same leasehold area.
	b. Benefit cost ratio/ internal rate of return and the year of assessment	Total Cost of production Rs :880.11 per ton Profit Rs : 68.52 per ton (As per cost sheet of LOCP. for the year 2021-22)
	c. Whether 9(c) includes the cost of environmental management plan so far.	Yes
	d. Actual expenditure incurred on the Project so far (capital) till 31.03.2022	Rs.440.11 Cr.
	e. Actual expenditure incurred on the Env't. Mgtm plans, during 2020-21	Rs.13.609 cr.
10.	Forest land requirements	
	a. The status of approval of adiversion of forest land for non-forestry use.	FC has been granted to this project vide Ref. no.- 8- 28/2014-FC , Date-29.08.2014 and no-10F (CON) 219 / 2015 / 10345/F&E, Bhubaneswar, Dt.31.05.16 for diversion of 159.18 ha forest land including 2.51 ha coming with in safety zone.
	b. The status of Tree felling	Completed
	c. Comments on the viability and Sustainability programme in the light of actual fields experience so far	Viable
11.	Status of construction:	
	Date of commencement (Actual and/or planned)	This is an Expansion Project planned initially for 1Mty now extended for 4.5Mty.
	Date of completion (Actual and/ or planned)	NA
12.	Reason for the delay if the project is yet to start	Not Applicable
13.	Date of Site visit	
	The date on which the project was monitored By the Regional Office, If any.	25.11. 2021
	Date of visit for this monitoring report	-
14.	Details of correspondence with project authority for obtaining action plan, information and status of compliance to safeguard.	To MOEF, &OSPCB


 PROJECT OFFICER
 LAJKURA OCP



FORM-II

PROFORMA FOR PROVIDING INFORMATION ON REHABILITATION

(For the year 2020-2021 till date)

1.No.of village affected : Nil

2.Families affected : SC ST OTH Total Nil

3.Compensation package offered per family:

State/Centre norms

As per State Govt.Package

4.Budget/estimate for rehabilitation. : NIL

a)Total outlay :

b)Amount paid/used :

5.Employment details

a)Total employment to be provided :

b)Employment given so far. :

6.Rehabilitation &Resettlement details. : No Shifting

a)Nos.of families rehabilitated : NA

i)Name of the site : NA


iv)Families rehabilitated. : SC ST OTH TOTAL - NA

b).families yet to be rehabilitated : NA

i) Name of site : NA

ii).No.of families : SC ST OTH TOTAL - NA

Any other information. : NO


12/05/2020
PROJECT OFFICER
LAJKURA OCP



FORM-III

FORMATE FOR PROVIDING PARTICULARS ON GREEN BELT/PLANTATION UNDER F(C)ACT1980ANDE(P)ACT1986.

1. a. Name of Organization : MAHANADICOALFIELDS LIMITED
- b. Env't clearance order No. : **J-11015/423/2008-1A-11(M)dated -30.01.2015**
- c. Forest clearance order No. : FC has been granted to this project vide Ref. no.- 8-28/2014-FC , Date-29.08.2014 and no. 10F(CON)219/2015/10345/F&E Bhubaneswar, Dt. 31.05.2016 for Diversion of 159.18ha forest land including 2.51ha Coming within safety zone.

2. Location, Block/Sub Division/Distt./State : Vill/Mauja-Brajrajnagar, Unit-I ; Jharsuguda, Sub-division – Jharsuguda, Dist:-Jharsuguda(Odisha).

3. Address for communication : Lajkura OCP, P.O.Lamtibahal, Brajrajnagar, Dist:-Jharsuguda(Odisha).PIN-768216.

4. Existing vegetation in the area/region:
 - a. Species (Trees/shrub/Grasses/climbers). : Planted Trees, shrub, Grasses and climbers. (Within 1.0 MTY boundary)
 - b. major prevalent species of each type : Mahua, Char, Neem and other local species

5. Land coverage by the project
 - a. Total area under the project : 721.29 Ha
 - b. Area covered for basic infrastructure (road/building/factory etc.) : 112.39 Ha (Approx)

6. Details about natural vegetation
 - a. Name and number of tree/species felled. : NA
 - b. Name and number of plants species till Available in the area : NA
 - c. By protecting the area will indigenous stock come up : Yes
 - d. Extent of green belt developed. : 33.3Ha (External Dump) +27.03 (Internal)+7.2ha on Back filled OB slope Remaining in colony and other place

7. Plantation required to be carried out as per

a. Condition of Environment

: As per specific condition Xvi
the density of the tree shall be around
2500 plants per ha.

b. Acondition of forest(C)Act

: NA.

Forest clearance in Ha/Nos

c. Voluntarily in Ha./Nos

: NA.

8. Details about plantation

a. Total area available for plantation in 2021-22:
in each category.

Greenbelt	Ext. Dumps	B/F area	Road sides	Blocks plantation
Nil	Nil	nil	Nil	Nil

b. Plantation details(Category wise& Methodology used)

Year of Plantation	Species planted	Spacing	Height Attained	Total area Covered till date	Proposed plantation Programme in2022-23 (in Ha.)
1991toTill date	Wood plants, fruit bearing and medicinal plants.	As per norms	Self Sustainable	41.03 % of broken up area.	4 ha in back filled slope.

c. Survival% of plantation (for last five years): 75%-80% after 3 years of operation.

9. Agency carrying out plantation and maintenance: Nil

10. Inspection of plantation by field

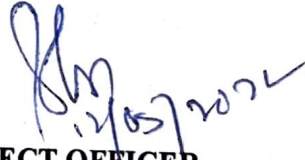
: Officers from OSPCB and Dist. Forest observation committee

Experts and their comments and follow up action

11. Remarks/any other information.

: ----

Date 12.05.2022


PROJECT OFFICER
LAJKURA OPENCASST PROJECT
IB VALLEY AREA, MCL

