

**SIX MONTHLY REPORT  
OF  
EMP CLEARANCE  
[J-1 1015/227/2007-IA-II(M)pt]**

**for the period April 23 – September '23**  
**(1<sup>st</sup> December 2023)**

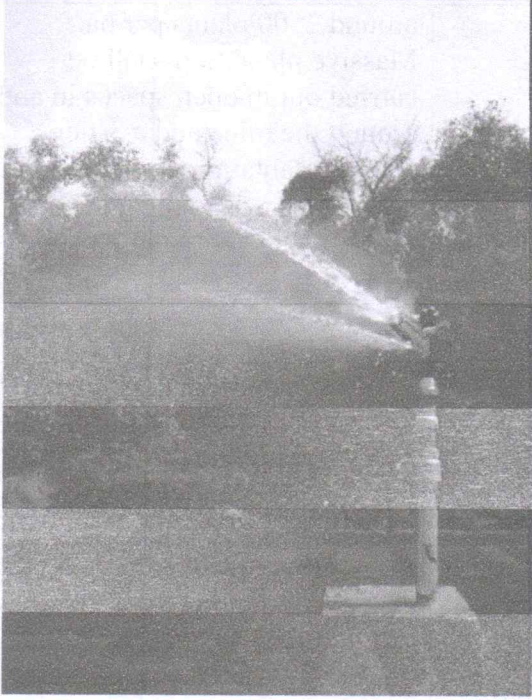


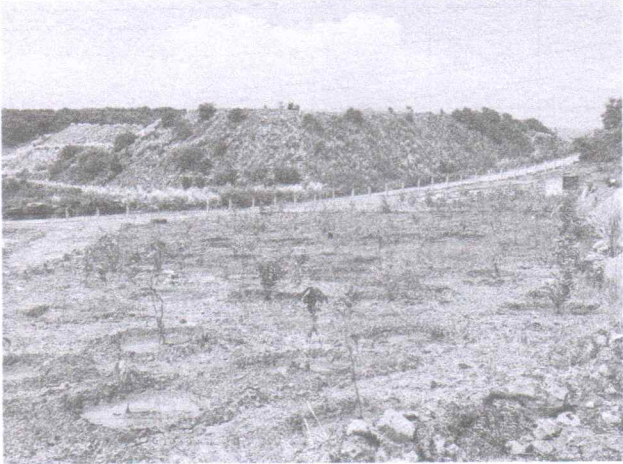
**ROHINI OPENCAST EXPANSION PROJECT  
N K AREA**

**CENTRAL COALFIELDS LIMITED**  
*(A Miniratna Company)*

*Status of compliance of the terms and conditions given in the Environmental clearance letter No. J-1 1015/227/2007-IA-II(M)pt dt. 21.02.2017 issued by MOEF, Govt. of India New Delhi for Rohini Opencast Expansion Coal Mine Project (expansion from 2.3 MTPA to 3.3 MTPA ) for period April 23 to September 23*

<b>A. SPECIFIC CONDITIONS</b>																						
<b>S.No.</b>	<b>Condition</b>	<b>Status</b>																				
i	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC	<p>The maximum production capacity of mines is capped at 3.30 MTPA.</p> <p>The production of last eight years is as follows:</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Coal (MT)</th> </tr> </thead> <tbody> <tr> <td>2015-16</td> <td>505118</td> </tr> <tr> <td>2016-17</td> <td>2794367</td> </tr> <tr> <td>2017-18</td> <td>2528078</td> </tr> <tr> <td>2018-19</td> <td>3299994</td> </tr> <tr> <td>2019-20</td> <td>2944272</td> </tr> <tr> <td>2020-21</td> <td>1484099</td> </tr> <tr> <td>2021-22</td> <td>681326</td> </tr> <tr> <td>2022-23</td> <td>313730</td> </tr> <tr> <td>2023-30.09.2023</td> <td>30740</td> </tr> </tbody> </table>	Year	Coal (MT)	2015-16	505118	2016-17	2794367	2017-18	2528078	2018-19	3299994	2019-20	2944272	2020-21	1484099	2021-22	681326	2022-23	313730	2023-30.09.2023	30740
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ii	The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier	The project has obtained Environmental Clearance vide ref no. J-11015/227/2007 -IA.II(M) dt.21/02/2017. Valid till 20.02.2025																				
iii	The project proponent shall obtain Consent to Operate from the State Pollution Control Board for the existing production capacity of 2.30 MTPA and also the Consent to Establish for the proposed capacity of 3.30 MTPA prior to enhancing the production capacity	<p>The project has obtained Consent to operate from JSPCB vide reference no SPCB/HO/RNC/CTO-15768851/2023/1210 dated 15.07.2023 for period till 31.12.2023</p> <p>and Consent to establish vide ref no JSPCB/HO/RNC/CTE-1309023/2018/284 dated 26-03-2018.</p>																				
iv	Transportation of coal should be carried out by covered trucks. Mitigative measures to be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient numbers of water sprinklers	<p>Transportation of coal is carried out by covered trucks .One Mobile water sprinklers of 28 KL is used for fugitive emissions control.</p> <p>63 nos of fixed water sprinklers have been installed in the coal transportation road</p>																				

			
		Fixed water sprinkler along transportation road	
v	Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured	PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2023. Details of PME/ IME of last five years enclosed as annexure A	
vi	Controlled blasting techniques should be adopted to control ground vibration and fly rocks.	<p>Nonels of different sizes and CED are used for controlled blasting. All steps suggested in EMP for mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders is being implemented</p> <p>Blasting carried out in controllable manner between 14:00- 15:00 hrs</p>	
vii	A progressive afforestation plan shall be implemented covering an area of 161.47 Ha at the end of mining, which includes reclaimed External 08 dump area (nil Ha), Internal OB dump area (156.47 Ha) and Green belt (5 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	<p>Progressive mine closure plan has been made by CMPDIL. An amount of Rs 2205 lakh have been deposited in the ESCROW account till March 2021 <b>Rs.1997.75082 Lakhs</b>.An amount of 580 lakh ahs been refunded from escrow account by Government of India</p> <p>Continuous plantation of trees is being done on the technically reclaimed area with the collaboration of State forest Department. The density of the trees is around 2500 plants per ha. Plantation in 15 Ha of reclaimed land has been completed in year 2017-18 Details about yearwise plantation are given in</p>	

	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.	annexure 1																								
viii	An estimated total 35.76 Mm <sup>3</sup> of OB will be generated during the entire life of the mine. there will be no external dump. 35.76 Mm <sup>3</sup> of will be one internal OB dump in covering an area of 156.47 ha. The maximum height of internal OB dump will not exceed 20 m above GL. 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 MOEFCC and its Regional Office on yearly basis.	<p>No external OB dump will be created for the expansion project. Planting of trees is done through State forest department. Monitoring and management is done for 3 years by state forest department and there after it is taken care by CCL.</p>  <p>OB dump reclamation with proper benching. The maximum slope of the dump does not exceed 28 degrees.</p>																								
ix	Of the total quarry area of 204.05 ha, the backfilled quarry area of 156.47 ha shall be reclaimed with plantation and there will be no void left at the end of the mining operations. The land after mining shall be restored for agriculture purpose	<p>Agreed. This condition will be fully complied by the end of project life. The current status of reclamation is as follows:</p> <table border="1"> <thead> <tr> <th>S.No</th> <th>Details</th> <th>Area (Ha)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Leasehold Area</td> <td>255.68</td> </tr> <tr> <td>2</td> <td>Quarry Area</td> <td>204.05</td> </tr> <tr> <td>3</td> <td>Broken Area (mined out area)</td> <td>202</td> </tr> <tr> <td>4</td> <td>Technically Reclaimed Area</td> <td>162</td> </tr> <tr> <td>5</td> <td><b>Technically Reclaimed Area %</b></td> <td><b>80.19%</b></td> </tr> <tr> <td>6</td> <td>Biologically Reclaimed Area</td> <td>99</td> </tr> <tr> <td>7</td> <td><b>Biologically Reclaimed Area %</b></td> <td><b>~61.11%</b></td> </tr> </tbody> </table>	S.No	Details	Area (Ha)	1	Leasehold Area	255.68	2	Quarry Area	204.05	3	Broken Area (mined out area)	202	4	Technically Reclaimed Area	162	5	<b>Technically Reclaimed Area %</b>	<b>80.19%</b>	6	Biologically Reclaimed Area	99	7	<b>Biologically Reclaimed Area %</b>	<b>~61.11%</b>
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<b>General conditions</b>																										
<b>a. Mining</b>																										

i	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change	No change in mining technology is done. Mining is carried out by shovel-dumper combination
ii	No change in the calendar plan including excavation, quantum of coal and waste should be made.	No change is made in calendar plan of production plan including excavation, quantum of coal and waste
iii	Mining shall be carried out as per the provisions outlined in approved mining plan as well as by abiding to the relevant laws related to coal mining and the circulars issued by Directorate General Mines Safety (DGMS).	Mining is carried out as per DGMS regulations
iv	A progressive Mine Closure Plan duly approved by the Ministry of Coal should strictly be complied with. A compliance report in this regard shall be submitted to Regional Office/ MOEF&CC every six month from the date of commencement of mining operations	Mine Closure Plan is complied with
<b>b. Land Reclamation</b>		
i	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change its Regional Office	The land use pattern map is prepared by CMPDIL, Ranchi every three years and the same is timely submitted to MOEF The latest report is available at <a href="https://www.coalindia.in/media/documents/Sat_Monitoring_of_Reclamation_more_than_5_MCM_for_2021-22.pdf">https://www.coalindia.in/media/documents/Sat_Monitoring_of_Reclamation_more_than_5_MCM_for_2021-22.pdf</a>
ii	The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adopted to that micro climate	Scientific reclamation of the waste dumps is being done. After technical reclamation, top soil is sprayed on the dumps on which local species plants are grown
iii	Final mine void depth should not be more than 40 m. The void area should be converted into water body. The remaining area should be back filled up to the ground level and covered with about a	Agreed, this condition will be complied at the end of the mine life

	meter thick top soil. The land after mining should be restored for agriculture use	
iv	The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The overburden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.	Top soil is being used for reclamation and development of green belt. Top soil preservation site of area 1 ha has been constructed. However as the project is not excavating new areas as such top soil has not been generated by the project in 2022-23
v	Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years	Continuous plantation of trees is being done on the technically reclaimed area with the collaboration of State forest Department. The density of the trees is around 2500 plants per ha. Details about yearwise plantation are given in annexure 1
<b>c. Emissions, Effluents, and Waste Disposal</b>		
i	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points.	One Mobile water sprinklers of 28 KL is used for fugitive emissions control  Water sprinklers are also installed at crushers to control fugitive emissions.

	<p>Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.</p>	<p>63 nos of fixed water sprinklers have been installed in the coal transportation road. Solvent with water is used for Dust Suppression.</p>
ii	<p>Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM25, SO2 and NOx 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, etc carried out at least once in six months</p>	<p>Air quality monitoring station has been established at PO office, intake well pump, Ashok Vihar colony and workshop for monitoring SPM, RPM, SO<sub>2</sub>, NOx and heavy metals such as Hg, Pb, Cr, As, etc.</p>
iii	<p>Data on ambient air quality (PM10, PM 2.5, SO2 and NOR) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report.</p>	<p>Data on ambient air quality and water quality are being submitted regularly. The above monitoring is being done by CMPDI, which is the independent laboratory recognized by EP Rules, 1986.</p>
iv	<p>Transportation of the coal by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the coal so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying</p>	<p>A separate transportation road has been constructed for transportation of the same. There are no villages in the vicinity of the project through which the transportation is carried out</p>

	capacity of such roads. Furthermore, transportation of coal by road should be carried out by covered trucks only. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.	
v	The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centres	Departmental water sprinklers/tankers (01 no. of 28 KL ) is deployed for dust suppression.  The PUC certificate for the vehicles has been obtained
vi	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. Crusher and material transfer points should invariably be provided with Bag filters and or dry fogging system. Belt-conveyors should be fully covered to avoid air borne dust. Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured. Drills shall be wet operated.	Departmental water sprinklers/tankers (01 no. of 28 KL ) is deployed for dust suppression.  Water sprinklers are also installed at crushers to control fugitive emissions  All the drills are wet operated  63 nos of fixed water sprinklers have been installed in the coal transportation road
vii	The Project Proponent should not alter the major channels around the site. Appropriate embankment should be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along the river/nallah boundary should be of suitable dimensions and critical patches should be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.	An embankment of 1200 m have been constructed along the river. The embankment have been stabilized by plantation
viii	There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with	The scheme for rain water harvesting in official buildings in under process.  Rain water harvesting pit construction has been completed at ATC, NK area.  Also all runoff water in the mine is collected in 2 mine sumps (Total capacity ~ 150



	Central Ground Water Board	Million gallons) acting as siltation ponds and ground water recharge ponds
ix	The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors.	Proper care is taken for gullies formed on slopes. The dozers are employed for compacting of the slopes
x	Sufficient number of Gullies to be provided for better management of water. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals. Dimension of the retaining wall to be constructed at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data	Garland drains and sump capacity has been designed taking due care of sudden rainfall and water make of the nearby area. One new Sedimentation pond has been proposed. Area = 90000 m <sup>2</sup>  Rainfall data is been taken into consideration for construction of retaining wall as and where necessary.  Toe wall/ retention wall of about 400 m length have been constructed in the project.
xi	Industrial waste water (CHP, workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as	Oil and grease trap has been installed in the workshop for treatment of effluent. Timely cleaning of the oil and grease trap is being done. However, those will be demolished in shifting and expansion of mine.

	amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents. Sewage treatment plant of adequate capacity shall be installed in the existing colony and offices	
<b>d. Noise &amp; Vibration Control</b>		
i	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Adequate measures are being taken. Noise levels are regularly monitored and kept below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operation of HEMM etc are provided with ear plugs/muffs.
ii	Controlled blasting techniques should be practiced with use of delay detonators to mitigate ground vibrations and fly rocks.	Nonels of different sizes and CED are used for controlled blasting. All steps suggested in EMP for mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders is being implemented  Blasting carried out in controllable manner between 14:00- 15:00 hrs.
iii	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.	The orientation of lights does not point towards the villages also the noise levels are well within the prescribed limits for day light/night hours.
iv	Measures should be taken for control of noise levels below 85 cIBA in the work environment. Workers engaged in operations of Coal Handling Plants and HEMM, etc. should be provided with ear plugs / muffs.	Noise levels are regularly monitored and kept below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operation of HEMM etc are provided with ear plugs/muffs.
<b>e. Occupational Health &amp; Safety</b>		

i	<p>Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.</p>	<p>PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2022.</p> <p>Details of PME/ IME of last five years enclosed as annexure A</p>
ii	<p>Besides carrying out regular periodic health check-up of their workers, 20% 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>health check-up for occupational diseases and hearing impairment is being carried out by hospitals of CCL</p>
iii	<p>Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Supervisory staff shall be held responsible for ensuring compulsory wearing of dust mask.</p>	<p>Personnel working in dusty areas have been provided with protective respiratory devices and provided with adequate training and information on safety and health aspects</p>
iv	<p>Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.</p>	<p>The infrastructure and facilities such as fuel for cooking, safe drinking water, toilet and medical health care have been constructed for the labours within site and will be removed after mine life</p>
v	<p>In case of outsourcing of work through MDO, the project proponent shall ensure the strict compliance enforcement of the</p>	<p>The same conditions are enforced on outsourcing agency also</p>

	above conditions.											
f. Biodiversity												
i	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	As per EMP report no endangered flora and fauna has been spotted / present in the mining zone. Hence a wildlife plan is not required.  Also The project proponent is taking all precautionary measures during mining operations										
g Implementation of Action Plan as Per Public Hearing & CSR Activities												
i	Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing. Land oustees should be compensated as per the norms laid out R&R Policy of the Company or the National R&R Policy or R&R Policy of the State Government, whichever is higher.	Implementation of action plan on the issues raised during public hearing has been ensured										
ii	The Board of every company, shall ensure that the company spends, in every financial year, at least two per cent. of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy under Section 135 of the Companies Act, 2013, for the Socio Economic Development of the neighborhood Habitats which could be planned in consultation with the Panchayat of the local administration, and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. A report, in consonance with the format prescribed in Annexure of the Companies (Corporate	A detailed yearly CSR plan is prepared for and in consultation with the local communities by CCL management. CSR scheme has been implemented. An amount of Rs 147.8 lakh has been spent on different CSR activities by NK Area for the year 2022-23 The CSR activities are approved by CCL CSR committee with consultation of local communities The details of CSR activities is as follows:  <table border="1"> <thead> <tr> <th></th> <th><b>Total Expenditure</b></th> </tr> <tr> <th><b>Year</b></th> <th><b>(In lakhs)</b></th> </tr> </thead> <tbody> <tr> <td>2017-18</td> <td>51.0</td> </tr> <tr> <td>2018-19</td> <td>58.5</td> </tr> <tr> <td>2019-20</td> <td>30.6</td> </tr> </tbody> </table>		<b>Total Expenditure</b>	<b>Year</b>	<b>(In lakhs)</b>	2017-18	51.0	2018-19	58.5	2019-20	30.6
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2017-18	51.0											
2018-19	58.5											
2019-20	30.6											


	<p>2014, shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.</p>	<p><b>2022-23</b>                      <b>147.8</b></p> <p>The main activities of CSR program of NK Area are as follows:</p> <ul style="list-style-type: none"> <li>• Health camps conducted at area level</li> <li>• CCL Laal and Laadli – meritorious students are selected and given 2 years of education, fooding &amp; lodging, coaching for engineering preparation after 10<sup>th</sup> standard free of cost. Many students have become engineers or chosen other successful career path since inception. One such student qualified and is working at NK area as an officer</li> <li>• CCL Covid crisis scholarship-students who lost their parents during covid are being provided scholarships to study. 4 are from NK Area</li> <li>• Children have been selected and trained at JSSPS khelgaon Ranchi, along with free education , fooding and lodging and monthly stipend. Sports cadets from JSSPS have won more than 100 medals at state, national and international level</li> <li>• HMV training with license have been provided to youths. 10 from NK area</li> <li>• ITI at BTTI Bhurkunda</li> <li>• Diploma programme from CIPET Ranchi</li> <li>• Machine operating training at Jharkhand tool room has started</li> <li>• Dairy and fishery training has been conducted at NK Area</li> <li>• Consensus with BAU and ICAR ranchi to start farming training for beneficiaries</li> </ul>
iii	<p>The project proponent shall follow the mitigation measures provided in Office Memorandum No.Z-11013/57/2014-1A.11 (M), dated 29th October, 2014,</p>	<p>Agreed</p>

	titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".	
iv	The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.	Not applicable
<b>h. Corporate Environment Responsibility</b>		
i	The Company should have a well laid down Environment Policy approved by the Board of Directors.	The company has environmental policy. Annexure B
ii	The Environment Policy should prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.	The Environment Policy contains necessary standard operating process
iii	The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions should be displayed on website of the Company.	The provision for display of hierarchical system has been made in the project. annexure C
iv	To have proper checks and balances, the Company should 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.	Well laid down system of reporting has been made

v	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	A separate environmental cell has been established and put under charge of senior Executive, who is looking after the environmental problems. He is reporting directly to Head of Company.
vi	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.	The funds earmarked for environmental protection measures are not being diverted for other purpose. Year wise expenditure will be reported to ministry and its Regional office
i. Statutory Obligations		
i	Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law, if any, as may be applicable to this project.	Agreed
ii	This Environmental Clearance is subject to obtaining requisite NBWL Clearance from the Standing Committee of National Board for Wildlife, if any, as applicable for this Mining project	Agreed
iii	The Project Proponent shall obtain Consent to Establish and Consent to Operate from the concerned State Pollution Control Board prior to commencement of mining operations and effectively implement all the conditions stipulated therein.	The project has obtained Consent to operate from JSPCB vide reference no SPCB/HO/RNC/CTO- 15768851/2023/1210 dated 15.07.2023 for period till 31.12.2023 and Consent to establish vide ref no JSPCB/HO/RNC/CTE-1309023/2018/284 dated 26-03-2018
iv	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.	Agreed
v	Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table. The intersecting ground water table can only be	Agreed

	commence after conducting detailed hydrogeological study and necessary permission from the CGWA. The Report on six monthly basis on changes in Ground water level and quality shall be submitted to the Regional Office of the Ministry, CGWA and State Pollution Control Board.	
j. Monitoring of Ambient Air & Water Quality and Reporting		
i	Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board. The critical parameters as per the Notification such as PM10, PM25, NOx, and SOx etc. in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-1A.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	Monitoring of ambient air quality as per notification 2009 is being carried out by CMPDIL Ranchi for the project
ii	The Proponent shall install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and turbidity meters at discharge points of STP and ETP and also at water storage ponds in the mining area may be made. Project Proponent should display the result digitally in front of the main Gate of the mine site	This condition will be complied in due time
iii	Regular monitoring of ground water level	Regular monitoring of the underground

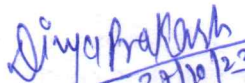


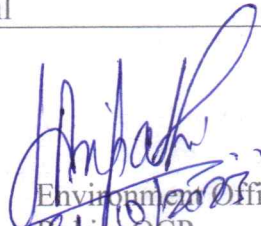
	<p>and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board</p>	<p>water level is being carried out by a network of existing wells located in nearby villages /peripheral areas</p> <p>Provision for installation of new piezometers as required has been made in and around the core and buffer zone</p> 
iv	<p>Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table</p>	<p>water bodies/ streams which are flowing in an around the village, have not been disturbed. The project has installed peizometers for ground water monitoring. Also water level of wells in and around the project is also monitored and recorded quarterly</p>
v	<p>Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central</p>	<p>Agreed</p>


	Pollution Control Board.	
vi	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board	Agreed
vii	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Agreed
viii	The activities pertaining to development of green belt/ horticulture shall be reported to concerned DFO/Collector on six monthly basis from the date of commencement of mining operations.	The activities pertaining to development of green belt will be reported to DFO/collector
k. Miscellaneous		
i	For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years and submitted to the concerned authorities within 2 months of the completion of periodicity of monitoring. Similarly, the annual reports for the financial year should reach the office of the concerned authority on or before 1 June of following year	The compliance reports are submitted six monthly
ii	Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy	Efforts are made to reduce consumption of energy
iii	The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work	Agreed , it will be duly informed
iv	A copy of clearance letter will be marked to concerned Panchayat local NGO, if any, from whom suggestion / representation has been received while processing the proposal	A copy of Environment Clearance has been given to Tumang, Karketta and Nawadih village Panchayats

	any, from whom suggestion / representation has been received while processing the proposal	village Panchayats
v	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office! Tehsildar Office for 30 days.	Copy of clearance letter has been sent to Jharkhand State pollution control Board.
vi	A copy of the EC letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office! Tehsildar Office for 30 days.	Copy of clearance letter has been sent to Jharkhand State pollution control Board.
vii	The EC 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 public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM10, PM25, SO2 and NO (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	Copy of clearance letter is displayed on CCL website (link: <a href="http://www.centralcoalfields.in/sutbs/envr_clrnce.php">http://www.centralcoalfields.in/sutbs/envr_clrnce.php</a> )
viii	The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue 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 also at web site of the Ministry of Environment, Forest and Climate Change at <a href="http://www.environmentclearance.nic.in">www.environmentclearance.nic.in</a> and a copy of the same should be forwarded to the Regional Office.	complied
ix	The Environmental Statement for each financial year ending 31 March in Form-V is mandated to be submitted by the PP for the concerned State Pollution Control	Environmental Statement is submitted to JSPCB in form-V every year. Arrangement of its uploading is being made.

<p>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 compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&amp;CC by e-mail</p>	
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Nodal Officer (Env't)  
NK Area

  
Environment Officer/ IC  
Rohini OCP  
NK Area

  
Project Officer  
Rohini OCP  
NK Area

**Details of reclamation are as given below**

S.No	Details	Area (Ha)
1	Leasehold Area	255.68
2	Quarry Area	204.05
3	Broken Area (mined out area)	202
4	Technically Reclaimed Area	162
<b>5</b>	<b>Technically Reclaimed Area %</b>	<b>80.19%</b>
6	Biologically Reclaimed Area	97
<b>7</b>	<b>Biologically Reclaimed Area %</b>	<b>~59.87%</b>

S.No	Land details(All area in Ha)				Technically Reclaimed area (in Ha)	Bio-Reclaimed Land (in Ha)			Remarks
	Forest Land	Non-Forest Land	Total Land	Total mined out area		Forest Land	Non-Forest Land	Total Reclaimed Land	
1	154.41	103.76	258.17	202	162	38	61	99	Plantation started from 1994-95

Name of Project	Year of Plantation	Area in Ha	Category of Land	No. of Plants	Main species
Rohini OCP	1994-95	11.00	OB dump	27500	Acacia, Gamhar, seashamsubbabul, Karanj, Kathasagwan, Chakundi, Eucalyptus, Ber, Amla, Emli, Babul Bamboo, Menzium, etc. With about 60% survival
	2000-01	18.00		45000	
	2003-04	9.00		22500	
	2005-06	5.00		12500	
	2006-07	8.00		20000	
	2007-08	13.00		32500	
	2008-09	14.00		35000	
	2012-13	4.00		10000	
	2017	15.00		37500	
	2021	2.00		3000	
	<b>Total</b>	<b>99.00</b>		<b>245500</b>	

**Wet drilling at Rohini OCP**



**Water sprinkling in Rohini OCP**



**Dust Control on Coal Transport Road**



**Water Sprinkler on haul road of Rohini OCP**





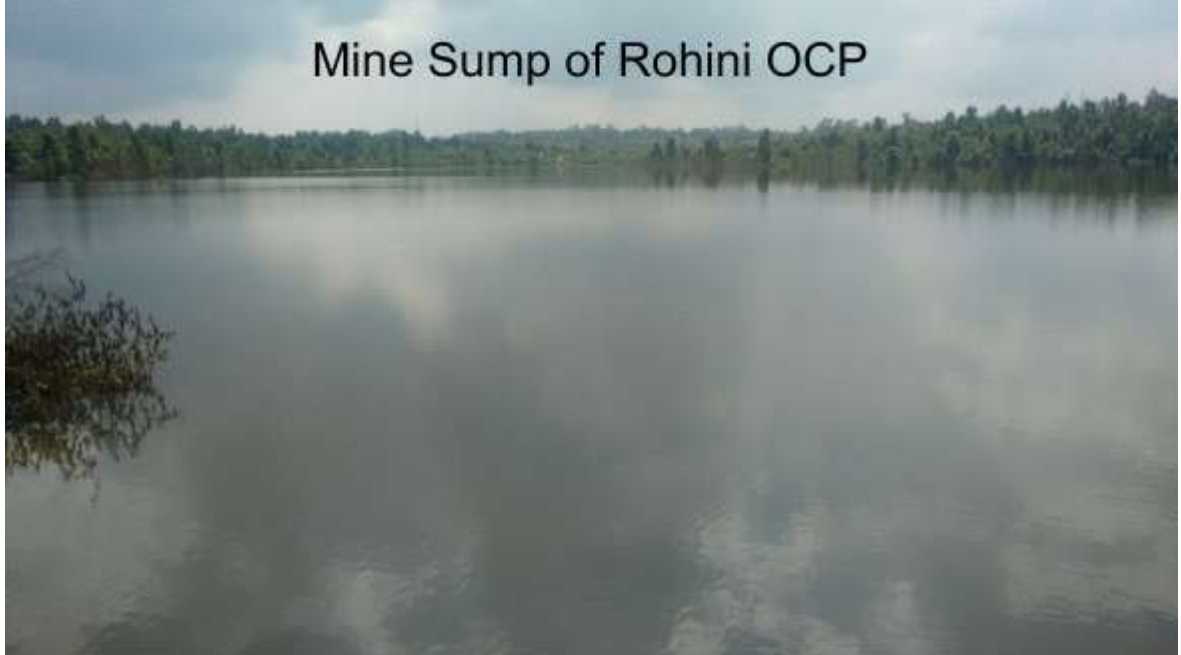
**Fixed water sprinklers in Coal transportation road**







Mine Sump of Rohini OCP



## Plantation Photographs of Rohini OCP



Plantation done in Monsoon  
2017



Rohini OCP : Plantation (2012-13)









**Toe wall/ retention Walls in Rohini OCP**



Pisciculture in mine sump of Rohini OCP



## CSR activities in NK Area

NK Area carries out CSR activities in 14 different panchayats of Khalari and Tandwa circle. Some of CSR activities are as follows:

### Drinking Water

3 Deep borings, 9 wells, 6 handpumps, 3 water purifiers at Khalari & Mcluskieganj railway station and khalari block





# Quarantine library



# Graameen Football



## शेखर, प्रकाश एंडरिजम में आयोजित ग्रामीण फुटबॉल प्रतियोगिता का प्रारंभ, जिला की महिला खिलाड़ियों को उपलब्ध करायेंगे बेहतर कोच

शेखर, प्रकाश एंडरिजम में आयोजित ग्रामीण फुटबॉल प्रतियोगिता का प्रारंभ, जिला की महिला खिलाड़ियों को उपलब्ध करायेंगे बेहतर कोच

जिला खेल विकास बोर्ड के अध्यक्ष जयदीप सिंह ने शुभारंभ करते हुए कहा कि ग्रामीण स्तर पर खेल को बढ़ावा देने के लिए जिला सरकार द्वारा विभिन्न कार्यक्रमों का आयोजन किया जा रहा है।

इस अवसर पर जिला खेल विकास बोर्ड के सदस्यों ने खिलाड़ियों को प्रोत्साहित किया और उन्हें बेहतर प्रदर्शन के लिए शुभकामनाएं दीं।

## बालिका वर्ग में गणेश स्पोर्टिंग क्लब राय त बालक वर्ग में विश्रामपुर की टीम विजयी

गणेश स्पोर्टिंग क्लब के बालिका वर्ग में राय त बालक वर्ग में विश्रामपुर की टीम विजयी

जिला स्तर पर आयोजित फुटबॉल प्रतियोगिता में गणेश स्पोर्टिंग क्लब के बालिका वर्ग में राय त बालक वर्ग में विश्रामपुर की टीम विजयी हुई।

इस अवसर पर जिला खेल विकास बोर्ड के अध्यक्ष जयदीप सिंह ने विजेता टीम को प्रोत्साहित किया और उन्हें बेहतर प्रदर्शन के लिए शुभकामनाएं दीं।



# Distribution of sports items



# Swachhta Hi Sewa 2019

1000 cloth bag distribution, social message and branding with help of 3000 pamphlets depicting restriction on use of single use plastic at houses, shops and public places in NK Area



# Tricycles for physically challenged

39 tricycles for physically challenged



# Village/School health Camps

Total -175 Camps









Community hall constructed under CSR scheme of NK Area



Installation of Hand pipes



Construction of well at Mcluskiganj





**Construction of road and bridge near Purnadih village**



भारत सरकार  
Government of India

कोयला मंत्रालय

Ministry of Coal

कोयला नियंत्रक का कार्यालय

Office of the Coal Controller

1, कौंसिल हाउस स्ट्रीट, कोलकाता-700 001.

1, Council House Street, Kolkata - 700 001

दिनांकित / Dated : 7<sup>th</sup> April, 2020

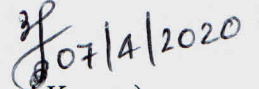
सं / No.CC/MCPS/CCL/20-21/

### ORDER

#### **Release of amount standing in Escrow Accounts of Mine of CCL**

In pursuance of the Minutes of the CCO Review Meeting under the Chairmanship of Secretary (Coal) on dated 01.04.2020, it is decided to release 50% of the claimed amount for progressive mine closure activities for the mines which submitted claims along with audit report prepared by 3<sup>rd</sup> party Government Institutions. Rest of the claimed amount shall be released after technical inspection/scrutiny by the Technical Committee of CCO Hq.

As such an amount of Rs. 1,46,23,10,688 (Rupees One hundred forty six crore twenty three lakh ten thousand six hundred eighty eight only) may please be released from the Escrow Accounts of the mines of Central Coalfields Limited as given in Annexure – I to the Nominated Owner within 10 days of the receipt of this order. An intimation including latest bank statement in this regard may please be sent to this office after release of the said amount by the Escrow Agent.

  
(Anjani Kumar)  
Coal Controller

Branch Manager, United Bank of India, Ranchi Branch - Post Box No.94, Main Road, Ranchi - 834 001 (Jharkhand).

#### **रिपोर्ट की प्रतिलिपि प्रेषित :**

1. Joint Secretary (Coal), MOC, Shastri Bhawan, New Delhi- 110 001 for information please.
2. CMD, CCL, Darbhanga House, Ranchi- 834029 (Jharkhand).
3. Director Technical, CIL, Coal Bhawan, Premise No. 04 MAR, Plot No. AF-III, Action Area-1A, New Town, Raharhat, Kolkata- 700156.
4. Director Finance, CIL, Coal Bhawan, Premise No. 04 MAR, Plot No. AF-III, Action Area-1A, New Town, Raharhat, Kolkata- 700156.
5. Director (Technical), (Oprn.), CCL, Darbhanga House, Ranchi- 834029 (Jharkhand).
6. Director (Finance), CCL, Darbhanga House, Ranchi- 834029 (Jharkhand).
7. Director (Technical), MOC, Shastri bhawan, New Delhi- 110 001.
8. TS to CMD, CCL, Darbhanga House, Ranchi- 834029 (Jharkhand).
9. OSD, Ranchi, CMPDIL Campus, Gondwana Place, Kanke Rd, ranchi-834008.
10. GM, HOD (Env), CCL Darbhanga House, Ranchi- 834029 (Jharkhand).
11. GM (F), CCL, Darbhanga House, Ranchi- 834029 (Jharkhand).
12. Office order File, CCO, Kolkata.

## ANNEXURE - I

Sl. No.	Name of Company	Name of Mine	Escrow A/c No.	Name of Bank	Claim Amount (in Rs.)	Reimbursed amount in Rs.
1	CCL	Pundi OCP	0059101073678	United Bank of India	14,77,71,168	7,38,85,584
2	CCL	Karo OCP	0059101073881	United Bank of India	6,99,21,724	3,49,60,862
3	CCL	Ashok OC	0059101074109	United Bank of India	24,02,21,975	12,01,10,988
4	CCL	Purnadih OCP	0059101073933	United Bank of India	11,86,87,040	5,93,43,520
5	CCL	Khas Mahal OC	0059101073872	United Bank of India	6,30,14,424	3,15,07,212
6	CCL	Piparwar OC	0059101074084	United Bank of India	50,70,98,260	25,35,49,130
7	CCL	Rohini OC	0059101074057	United Bank of India	11,60,00,049	5,80,00,025
8	CCL	Topa OC	0059101074251	United Bank of India	4,27,29,176	2,13,64,588
9	CCL	Tarmi OCP	0059101073915	United Bank of India	9,58,22,779	4,79,11,390
10	CCL	Amlo OCP	0059101073906	United Bank of India	9,32,71,409	4,66,35,705
11	CCL	Dhori OCP	0059101074172	United Bank of India	13,97,68,384	6,98,84,192
12	CCL	Tāpin OCP	0059101073766	United Bank of India	6,66,90,742	3,33,45,371
13	CCL	North Urimari OCP	0059101073793	United Bank of India	7,77,34,992	3,88,67,496
14	CCL	Parej East OCP	0059101073739	United Bank of India	16,89,28,429	8,44,64,215
15	CCL	Urimari OCP	0059101074145	United Bank of India	11,10,82,493	5,55,41,247
16	CCL	Saunda UGP	0059101073827	United Bank of India	94,283	47,142
17	CCL	Saunda D UGP	0059101073818	United Bank of India	2,00,196	1,00,098
18	CCL	Sarubera UGP	0059101073696	United Bank of India	2,71,025	1,35,513
19	CCL	Sayal D UGP	0059101073845	United Bank of India	52,36,716	26,18,358
20	CCL	Central Saunda UGP	0059101073836	United Bank of India	6,00,353	3,00,177
21	CCL	Kedla OC	0059101073757	United Bank of India	9,97,02,568	4,98,51,284
22	CCL	Kathara OC Project	0059101074066	United Bank of India	62,28,70,792	31,14,35,396
23	CCL	Govindpur Ph.II OC	0059101073632	United Bank of India	5,71,23,736	2,85,61,868
24	CCL	Jharkhand OCP	0059101073748	United Bank of India	7,51,93,900	3,75,96,950
25	CCL	Dhori (K) UG Project	0059101073924	United Bank of India	24,22,005	12,11,003
26	CCL	Konar OCP	0059101073890	United Bank of India	10,31,070	5,15,535
27	CCL	Tetariakhas OCP	0059101073863	United Bank of India	11,31,688	5,65,844
	<b>Total</b>				<b>2,92,46,21,376</b>	<b>1,46,23,10,688</b>

J. Janda  
27/4/2020

27/4/2020

K. P. J. J.  
07/04/2020

**CENTRAL COALFIELDS LIMITED**  
**DARBHANGA HOUSE: RANCHI**

**Sub: Forwarding Minutes of the 480<sup>th</sup> (No. 12 of 2019)  
Meeting of the Board of Directors held on 16.11.2019.**

Extract from the final confirmed minutes of the above meeting, in respect of following item, is appended below:

**Item No. 480.3(4): Proposal seeking approval of Corporate Environment Policy for Central Coalfields Limited, based on the Corporate Environment Policy (CEP) 2018 of Coal India Limited.**

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The Board was apprised of the subject proposal seeking approval of Corporate Environment Policy for Central Coalfields Limited, based on the Corporate Environment Policy (CEP) 2018 of Coal India Limited.

It was further apprised that based upon the observation of CAG in its Draft Performance Audit Report on "Assessment of Environmental Impact due to Mining activities and its mitigation in Coal India Limited and its subsidiaries", CIL had reviewed its Corporate Environment Policy in 2018 and the same had been approved in the 377<sup>th</sup> CIL Board Meeting held on 20<sup>th</sup> December 2018. Also, as per the directions of 2<sup>nd</sup> Apex Committee meeting dtd: 18.10.2019 presided by Additional Secretary, Ministry of Coal, the Environment Policy-2018 of CIL also needs be approved by CCL Board.

After detailed deliberations, the Board approved the subject proposal as brought out in the agenda note.

*Submitted for immediate necessary action to ensure compliances of the directives of the Board. ATR, may please be submitted within 08 days, so that it can be placed before the Board at least 07 days in advance of the next Board Meeting.*

**HOD(E&F)**

**D(T/P&P)**

**No. CS/BM/480/2019/ 410**

  
**Company Secretary**

**Date: 10-12-2019**



# **COAL INDIA LIMITED**



## **CORPORATE ENVIRONMENT POLICY**

**2018**



## **Environmental Policy Statement:**

*Coal India Limited(CIL) is committed to promote sustainable development by protecting the environment through integrated project planning & design, prevention / mitigation of pollution, conservation of natural resources, restoration of ecology & biodiversity, recycling/ proper disposal of wastes, addressing climate change and inclusive growth. It also aims to bringing awareness amongst its stakeholders for continual improvement in environmental performances following best practices.*

## **OBJECTIVES:**

### **Coal India Limited shall endeavor to:**

- 1. Plan & design projects with due consideration to environmental concerns for Sustainable Development.*
- 2. Conduct mining and associated operation in an environmentally responsible manner to comply with applicable laws and other requirements related to environmental aspects.*
- 3. Prevent pollution of surrounding habitation by continuous monitoring and adopting suitable measures for environment protection.*
- 4. Implement Environment Management Plans in all our mines /projects effectively to mitigate pollution, conservation of natural resources and restoration of ecology & biodiversity.*
- 5. Ensure compliance of all applicable Environmental Clearance& Forestry Clearance conditions and other statutory conditions issued by regulatory agencies.*
- 6. Recycling of wastes on the principle of REDUCE, REUSE and RECYCLE.*
- 7. Put special thrusts on efficient energy utilization / renewable energy as a measure to reduce carbon foot-print.*
- 8. Strive for continual improvement in our environmental performances by setting targets, measuring progress and taking corrective action.*
- 9. Taking measures to render productive post mining land use.*
- 10. Implementation of activities applicable to CIL arising out of International Conventions.*
- 11. Create environmental awareness among the employees and the local communities through pro-active communication and training.*

## **STRATEGIES FOR IMPLEMENTATION OF ENVIRONMENTAL POLICY:**

### **Back Ground:**

Coal India Limited subscribes to the view of Sustainable Development. Unless the environment can sustain all the developmental activities, any pursuit of development in isolation can cause irreparable damage to the ecosystem and associated environmental attributes. Keeping this view in mind, Coal India Limited attaches top priority towards sustainable development and approved its 'Corporate Environmental Policy' in December 1995, which was subsequently revised in 2012. However the present policy is the amendment of the 2012 Policy and is complimentary to the National Environmental Policy, 2006.

This modification in the present policy is the outcome of the experience gained since 2012 keeping in view the modifications / amendments made time to time in environmental policies and additional stipulation notified by MoEF&CC (Ministry of Environment, Forest& Climate Change) and other organisations concerning mine closure, reclamation of degraded land, environmental clearance etc. and also with the objective of revisiting the corporate policy.

This Policy has a vision of Green Mining and mission of 100% compliance of environmental statutes applicable to coal mining industry.

**Strategies:** Coal India adopts the strategies appended below for effective implementation:

### **1. MINE/ PROJECT PLANNING & DESIGN FOR SUSTAINABLE DEVELOPMENT:**

- a) Coal being a non-renewal energy source, extraction shall be planned prudently to meet national requirement in a planned way. The projects shall be designed on the principle of Sustainable Development with due consideration to environment, mine closure ,safety and aspirations of the stakeholders at the planning& design stage itself with due regard to mine closer plan.
- b) While preparing the Mining plan/project reports, the effort shall be to incorporate latest mining technologies and equipment's with optimal capacity, which are more environment friendly.

- c) All Mining Plan/ project reports will be provided with detailed provisions for ensuring environmental compliances.

## **2. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) & ENVIRONMENT MANAGEMENT PLAN (EMP)**

- a. All mine planning and design shall be environmentally acceptable and operation shall be carried out in such a way as to facilitate the compliance of stipulated environmental standards.
- b. EIA& EMP for all projects shall be formulated as per the approved ToR (Terms of Reference) and public consultations for obtaining Environmental Clearance (EC) from MoEF&CC. Similarly, in the existing projects needing enhancement of production capacities with or without increase in land, change of technology, renewal of lease and change in land use etc. fresh EC is required to be sought as per norms. The projects shall be operated after obtaining Consent to Establish (CTE)/Consent to Operate (CTO) from State Pollution Control Boards (SPCB).
- c. Detailed Mine Closure Plans shall be prepared for all existing and new mines as per the MoC (Ministry of Coal) guidelines.

## **3. COMPLIANCE OF THE STATUTORY REQUIREMENTS:**

The implementation of EMP and fulfillment of all other statutory requirements like conditions of EC, FC and consents to establish & operate, including timely submission of returns to statutory bodies and various agencies, are to be ensured at all levels.

## **4. MEASURES TO MITIGATE POLLUTION:**

### **a) Air Pollution:**

- i) Generation of dust is to be controlled at the source to the possible extent with necessary control measures during drilling, blasting, loading, unloading, CHP transfer points etc.
- ii) Deployment of eco-friendly mining technologies.
- iii) Dust generation is to be minimized along coal / waste transportation routes.
- iv) Mechanized transportation of coal to be encouraged.
- v) Green belt is to be created around the source of dust.

**b) Water pollution:**

- i) The mine water and other effluent shall be treated to ensure the discharge norms as per statute. The treated effluent shall be utilized to the extent possible with a view to achieve maximum water conservation.
- ii) Oil & grease from the effluent shall be removed by Oil & Grease Traps for proper disposal.

**c) Noise / ground vibration:**

- i) All measures to minimize noise pollution will be taken including maintenance of HEMM, equipment and provision of PPE where required.
- ii) Suitable controlled blasting techniques shall be followed to reduce ground vibration as well as noise pollution.

**d) Land reclamation:**

- i) Progressive and concurrent reclamation of mined out areas will be carried out as per approved EIA/EMP and Mine Closure Plan (MCP).
- ii) Slopes of external dumps are the important area to be suitably graded / terraced for effective reclamation and plantation.
- iii) Preservation of top soil is required for future use. Old as well as existing non-active dumps are to be technically and biologically reclaimed.
- iv) Monitoring of reclamation work of all opencast mines will be done through Satellite Surveillance. The outcome shall be put in the websites.

**e) Mine closure plans:**

Mine Closure Plan (MCP) shall be prepared for each mine. MCP are being delineated in two phases viz. progressive and final mine closure. Appropriate funds are set aside and deposited under a special Escrow fund every year as per MoC guidelines, to be utilized for proper and final mine closure.

For mines closed prior to issuance of MoC guidelines (i.e. 27<sup>th</sup> August, 2009) suitable action to be taken as per provisions of Mines Act 1952.

**f) Mine fire**

CIL shall endeavour to reduce occurrence of mine fire and subsidence due to mining activity. Monthly report shall be submitted to top management of the subsidiary and CIL and Quarterly to company board. Action Plan for mine fire control shall be implemented. Monitoring will be done through Satellite Surveillance/other suitable technology.

**g) Monitoring:**

- I. All receptors in and around the mining projects shall be monitored regularly to assess the efficacy of the pollution control / mitigation measures within stipulated standards.
- II. Effect of mining on the hydrology of the area will be monitored through measurement of water level and its quality of nearby wells and bore holes provided for this purpose. Conservation of water through rainwater harvesting shall be taken up.
- III. Area and Unit environmental cells shall have regular interaction with the people in and around the coal mines and other allied units on matters related to environment to take necessary and timely corrective actions.
- V. Environmental initiatives and monitoring through self and third party environment audit shall be conducted for generating useful data for taking corrective actions and mitigation measures as per guidelines.

**h) Other measures:**

- I. Special emphasis shall be given to undertake R&D related to various facets of coal mine environmental management in collaboration with Central Mine Planning and Design Institute (CMPDI) and other competent institutions.
- II. Besides ensuring statutory compliance, the CIL desires to set high standards and continual improvement.
- III. A number of mines and establishments of CIL are ISO 14001 certified and balance mines & establishments shall be ISO 14001 certified in phased manner.
- IV. CSR and R&R policies of CIL are to be incorporated for better planning and implementation of the socio-economic issues of coal mining areas.
- V. The coal mining environmental issues are complex and require multi-disciplinary approach to address the same. CIL will endeavor to enter into MoUs with expert agencies of repute to assist in environment issues and also help in capacity building of CIL executives.
- VI. CIL conduct periodical medical examination (PME) of its work force on routine basis in compliance of the requirement mining rules and regulation, additional test will be done as and when require.

**5. PRESERVATION OF BIO-DIVERSITY:**

- a) This will start from mine planning including technically and biologically reclamation of mined out areas in collaboration with State Forest Departments, Wild Life Divisions, NGOs etc. working in the fields of bio-diversity conservation.

- b) The selection of species for plantation shall be done in consultation with the local community to include the local species and their preferences, if any.

## **6. COAL BENEFICIATION / COAL WASHERIES:**

- a) For beneficiation of Runoff Mines (ROM) coal, washeries are being set up in a phased manner as per requirement and statutes.
- b) Slurry Management System (SMS) in all washeries shall be organized to ensure collection of fines, gainful utilization of rejects viz. power generation in Fluidized Bed Combustion (FBC) plants, selling to brick manufacturers or adopting other environmental friendly disposal options as feasible.
- c) The reject dumps and tailings shall be suitably handled to avoid any contamination.
- d) The effluent from washeries including tailings pond shall be suitably treated and reused to minimize water consumption with zero discharge concept.

## **7. CONSERVATION AND CLEAN TECHNOLOGY:**

- a) R&D projects shall be taken up to promote clean coal technology and improve the existing technologies.
- b) Energy saved is energy produced. Voluntary energy audit to be done for corrective action to reduce carbon footprint.
- c) Clean Development Mechanisms will be explored for reducing emission of Green House Gases by exploration, identification, preparation of projects reports for extraction of methane from Coal Bed, Coal Mine, Abandoned Mine, Ventilation Air, UG Coal Gasification, generation and utilization of renewable energy etc.

## **8. AWARENESS PROGRAMME:**

- a) Publicity to generate awareness through exchange & communication of information, newsletters and periodicals on environment, seminars, workshops, celebration of World Environment Day etc. at CIL / Subsidiary HQs, Areas & units to be undertaken. Regular training programs to be organized at various levels to inculcate awareness among employees.
- b) Courses on environmental and forestry laws and Environmental Protection Measures and the Corporate Policy to be organized for project executives for improving knowledge.
- c) CIL to give annual awards for achieving excellence in environment related

issues and activities. These awards will be in recognition for implementation of EMP, land reclamation and compliance of statutes, proper maintenance of air & water quality and noise level.

## 9. WASTE MANAGEMENT:

CIL will undertake appropriate action for safe handling, storage and disposal of solid waste and hazardous waste generated from its industrial set up and colonies as per relevant rules. The biomedical waste generated from hospitals and dispensaries will be collected and disposed in appropriate facilities created as per statutes. E-waste management and handling of various types of e-waste generated in its operations will be done as per rule.

## 10. CORPORATE ENVIRONMENT RESPONSIBILITY:

Corporate Environment Responsibility (CER) is mandatory for issuing environmental clearance for all the Greenfield and Brownfield projects as per directives of MoEFCC with effect from 1st May, 2018 (O.M.No.22-65/2017-IAIII dt. 19.06.2018). Budgetary provisions should be kept for implementation of provisions of CER for all the projects which will be submitted to MoEFCC for grant of environmental clearance.

## 11. INCORPORATION OF VIEWS OF STAKEHOLDERS:

CIL will critically examine and incorporate the viewpoints of various stakeholders like PAPs/PAFs, Parliamentary Committees, Standing Sub-Committees, NGOs etc. CIL being a listed entity with stock exchange, it will also take into consideration the observations/viewpoints of international investors.

## 12. IMPLEMENTATION OF POLICY:

- i) **Manpower:** CIL shall have environmental divisions at decision making & operational levels in its structure. The environment department shall be set up and strengthened at:
  - i) CIL Corporate HQ at Kolkata
  - ii) Subsidiary HQs
  - iii) Areas / Units / Collieries / Workshops /Washeries
  - iv) CMPDI (HQ) & CMPDI Regional Institutes
- ii) **Roles and Responsibilities:** The environmental department, set up at company HQs, Areas and Unit levels with appropriate manpower and resources, shall be responsible for implementation of policy, obtaining EC, FC, consent to establish

& operate, statutes requirements and undertaking mitigation measures besides preparation of action plan every year and also to intimate the status of implementation to the management regularly.

**iii) Annual Environment Budget (Revenue & Capital):** The Annual Environment Budget (revenue & capital) shall be prepared based on the action plan including monitoring of various bench marks and the budget utilization. The year wise funds earmarked for environmental protection measures shall be kept in separate accounts with Environmental cost code.

### **13. FLEXIBILITY TO THE SUBSIDIARY COMPANIES:**

CEP 2018 will be applicable for all subsidiaries of CIL. The subsidiary company Boards have been authorized to approve necessary modifications in CEP 2018 with reference to unique conditions prevailing at the concerned subsidiary.

### **REVIEW OF ENVIRONMENTAL POLICY:**

In view of the present fast changing social, economic and environmental scenario, this Policy shall be reviewed every 5 years to incorporate the changes in the legal, technical, environmental, economic and social inputs prevailing at that time. Whenever, there is change in National Environmental Policy or other National / State relevant policies, Acts etc, this Corporate Environmental Policy would be reviewed and suitably revised.

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## CENTRAL COALFIELDS LIMITED

(A subsidiary of Coal India Limited)

OFFICE OF THE GENERAL MANAGER

NK AREA



Ref No: PO/RH/Committee (E&F)/2019-20/2210

Dated: 15/12/2019

### OFFICE - ORDER

As per the directives of CCL HQ, Ranchi a Pit Environment Committee in respect of Rohini Project is hereby constituted consisting of following officials.

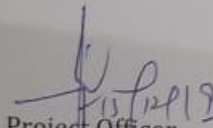
- |  |   |                           |
|--|---|---------------------------|
| 1. Project Officer, Rohini OCP                 | - | Chairman of the Committee |
| 2. Colliery Manager, Rohini OCP                | - | Member                    |
| 3. Project Engineer (E&M), Rohini OCP          | - | Member                    |
| 4. Project Engineer (Excav.), Rohini OCP       | - | Member                    |
| 5. Safety Officer, Rohini OCP                  | - | Member                    |
| 6. P.E(Civil)/ Nodal Officer (E&F), Rohini OCP | - | Member                    |
| 7. Sr. Surveyor, Rohini OCP                    | - | Member                    |

#### Special Invitees :-

1. The Staff Officer (P&P), NK Area
2. The Area Nodal Officer (Envt. & Forest), NK Area

The above committee will meet every Friday at the office of the undersigned at 4:00 P.M to discuss compliances of various statutory provisions related to environment such as EC,FC, CTO, hazardous waste and other issues.

This issues with the approval of the competent authority.

  
Project Officer  
Rohini OCP

#### Copy to:

1. The All Committee members.
2. The Special Invitees.

#### Copy for kind information :-

1. The General Manager, NK Area
2. The HoD(E&F), CCL, Ranchi


CD No - 164  
9/5/23

CENTRAL Hospital information (History, facilities, staff, etc)

Details of IME/PME of last 5 years from the Area

NK AREA DAKRA

S. No.	Year	Man Power	Target	PME		Total	IME		Total
				Below 45 Yrs	Above 45 Yrs		CCL	Contractual	
1	2018		462	170	302	479	25	242	267
2	2019		664	203	313	516	50	276	326
3	2020		450	260	340	600	60	108	168
4	2021		853	455	414	869	47	246	293
5	2022		806	321	422	743	32	130	162

  
9/5/23  
Dy. Chief Medical Officer.  
C.H., Dakra  
Ranchi (JH)

Disease report of last 5 years from the Area

NK AREA DAKRA

Area	Year	Total No of PME	Hypertension	Diabetics	Eye Problem	Hearing Impairment (Partial)	Back Problem	Spinal Injuri	CA D	Dyslipidemia	Respiratory Disease	Skin Disease Detected / Reacted	Cancer Detected / Reacted	Psychiatric	Obesity	Pneumoconiosis	Sleepinsomania	CVA / Paralysis
NK AREA	2018	490	27	59	03	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
"	2019	516	06	62	04	"	"	"	"	"	"	"	"	"	"	"	"	"
"	2020	600	30	53	08	"	"	"	"	"	"	"	"	"	"	"	"	"
"	2021	869	37	70	06	"	"	"	"	"	"	"	"	"	"	"	"	"
"	2022	743	37	62	17	"	"	"	"	NIL	Asthma 01	"	"	"	"	"	"	"

  
 9/5/23  
 Dy. Chief Medical Officer,  
 C.H., Dakra  
 Ranchi (JH)

**Vocational training Centre, NK Area**

Sr. No.	Name of mine	Target						Contractual						Departmental					
		2017	2018	2019	2020	2021	2022	2017	2018	2019	2020	2021	2022	2017	2018	2019	2020	2021	2022
1	<b>KDH</b>	132	35	99	105	108	104	39	03	9	12			134	39	113	119	118	113
2	<b>Dakra</b>	64	60	65	78	73	67	17	11	10		7		81	69	82	83	90	77
3	<b>Rohini</b>	72	51	52	52	54	62	16	60	45	11	1		88	64	91	94	58	67
4	<b>Purnadih</b>	100	60	60	80	90	102	12	9	13		13		106	80	68	97	93	103
5	<b>Churi</b>	72	60	55	72	70	70	38	84	126	18	100	109	78	69	95	83	82	72
6	<b>RR shop</b>	20	20	20	15	15	12							21	20	21	21	16	14
7	<b>GMO</b>													01	08	22	14	18	14
		460	286	351	402	410	417	122	167	203	41	121	109	509	349	464	511	472	460

**CENTRAL COALFIELDS LIMITED**  
(A subsidiary of Coal India Limited)

**OFFICE OF THE V T MANAGER**  
**GROUP VOCATIONAL TRAINING CENTER**  
NORTH KARNPURA AREA, DAKRA-829210, DIST-RANCHI (JHARKHAND)

G.V.T.C., N.K.  
Dispatch No. 3403  
Date: 01.01.2023

Month: -DECEMBER 2022

To,  
The Project Officer,  
Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop/M & A/Rajhara  
Sub: - Project wise training report at GVTC, N K Area, Dakra for the month of DECEMBER 2022  
Dear Sir,

Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

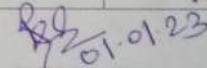
PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESSIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl
KDH	104	--	05	----	----	----	07	106	----	----	----	----	
DAKRA	67	--	15	----	----	----	10	67	----	----	----	----	
ROHINI	62	--	24	----	----	----	04	63	----	----	----	----	
PURNADIH	102	--	--	----	----	----	01	102	----	----	----	----	
CHURI	70	--	04	----	--	08	----	72	----	88	21	----	
RR Shop	12	--	03	----	----	----	02	12	----	----	----	----	
G M O	---	05	---	----	----	----	14	----	----	----	----	----	
<b>TOTAL</b>	<b>417</b>	<b>05</b>	<b>51</b>	--	--	<b>08</b>	--	<b>38</b>	<b>422</b>	--	<b>88</b>	<b>21</b>	--

M & S	----	09	----	----	----	----	54	----	----	----	----	----
A & C	----	03	----	----	----	----	22	----	----	----	----	----

RAJHARA	---	---	---	----	----	----	47	29	----	----	----	----
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<b>GRAND TOTAL</b>	<b>417</b>	<b>17</b>	<b>51</b>	--	--	<b>08</b>	--	<b>161</b>	<b>451</b>	--	<b>88</b>	<b>21</b>	--
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APPRENTICES N K	MALE	FEMALE	MONTHLY ACHIVEMENT	MALE	FEMALE	PROGRESSIVE ACHIVEMENT
I T I	06	----	06	48	----	<b>48</b>
PDPT	06	---	06	97	----	<b>97</b>
Lamp Handling	----	-----	-----	40	----	<b>40</b>
C S R	-----	-----	-----	24	20	<b>44</b>

  
 V T Manager  
 Group Vocational Training Center  
 N K Area Dakra

**Distribution: -**

1. SO (Safety), N K Area, Dakra.
2. Area Training Officer, N K Area, Dakra.

**Copy for Kind Information please: -**

1. GM (HRD), CCL, Ranchi.
2. General Manager, N.K. Area, Dakra.

भारतीय डाक  
India Post

**CENTRAL COA**  
(A subsidiary of)  
**OFFICE OF THE**  
**GROUP VOCATION**  
**NORTH KARNPURA AREA, DAKR**

To,  
The Project Officer,  
Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop

Sub:-Project wise training report at GVTC, NK Area, Dakra for the month of DECEMBER 2021.

Dear Sir,

Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESSIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl
KDH	108	---	06	---	---	---	---	08	110	---	---	---	---
DAKRA	73	05	---	---	---	---	---	17	73	---	07	---	---
ROHINI	54	---	04	---	---	---	---	04	54	---	-01	---	---
PURNADIH	90	---	---	---	---	---	---	01	92	---	---	13	---
CHURI	70	02	20	---	01	04	---	06	73	03	85	15	---
RR Shop	15	---	07	---	---	---	---	01	15	---	---	---	---
G.M.O	---	03	---	---	---	---	---	18	---	---	---	---	---
<b>TOTAL</b>	<b>410</b>	<b>10</b>	<b>37</b>	<b>---</b>	<b>01</b>	<b>04</b>	<b>---</b>	<b>55</b>	<b>417</b>	<b>03</b>	<b>93</b>	<b>28</b>	<b>---</b>

M & S	---	10	---	---	---	---	---	102	---	---	---	---	---
A & C	---	03	---	---	---	---	---	19	---	---	---	---	---

RAJHARA	---	---	---	---	---	---	---	05	15	---	30	---	---
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<b>GRAND TOTAL</b>	<b>410</b>	<b>23</b>	<b>37</b>	<b>---</b>	<b>01</b>	<b>04</b>	<b>---</b>	<b>181</b>	<b>432</b>	<b>03</b>	<b>123</b>	<b>28</b>	<b>---</b>
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ITI APPRENTICES	MALE	FEMALE	MONTHLY ACHIVEMENT	MALE	FEMALE	PROGRESSIVE ACHIVEMENT
N K	---	---	---	82	---	82
CISF	---	---	---	343	---	343

31/12/2021  
V T Manager  
Group Vocational Training Center  
NK Area Dakra

**Distribution:-**

1. SO (Safety & Training), N K Area, Dakra.

**Copy for Kind Information please:-**

1. DMS, SEZ, Ranchi Region, Ranchi
2. GM (HRD), CCL, Ranchi.
3. General Manager, N K Area, Dakra.

**CENTRAL COALFIELDS LIMITED**  
(A subsidiary of Coal India Limited)  
**OFFICE OF THE V T MANAGER**  
**GROUP VOCATIONAL TRAINING CENTER**  
**NORTH KARNPURA AREA, DAKRA-829210, DIST-RANCHI (JHARKHAND)**

Month:-DECEMBER 2020

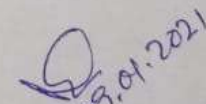
To,  
The Project Officer,  
Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop/M & A/Rajhara

Sub:-Project wise training report at GVTC, NK Area, Dakra for the month of DECEMBER 2020.

Dear Sir,  
Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl.	Basic	Refresher	Spl.
KDH	105	---	10	---	01	---	---	09	106	04	12	---	---
DAKRA	78	01	---	---	---	---	---	02	79	02	---	---	---
ROHINI	52	03	---	---	---	---	---	17	64	13	08	03	---
PURNADIH	80	01	02	---	---	---	---	13	82	02	---	---	---
CHURI	72	---	01	---	---	---	---	02	75	06	11	07	---
RR Shop	15	03	02	---	---	---	---	05	15	01	---	---	---
G M O	----	03	---	---	---	---	---	14	---	---	---	---	---
<b>TOTAL</b>	<b>402</b>	<b>11</b>	<b>15</b>	<b>---</b>	<b>01</b>	<b>---</b>	<b>---</b>	<b>62</b>	<b>421</b>	<b>28</b>	<b>31</b>	<b>10</b>	<b>---</b>
M & A	---	05	---	---	----	----	--	19	---	---	---	---	---
RAJHARA	---	03	03	---	---	---	---	08	21	---	---	---	---
<b>GRAND TOTAL</b>	<b>---</b>	<b>19</b>	<b>18</b>	<b>---</b>	<b>01</b>	<b>----</b>	<b>---</b>	<b>89</b>	<b>442</b>	<b>28</b>	<b>31</b>	<b>10</b>	<b>---</b>

ITI Apprentice	Monthly Achievement	M	F	Progressive Achievement	M	F
	Total =02	02	NIL	Total =09	08	01

  
09.01.2021  
V T Manager  
Group Vocational Training Center  
NK Area Dakra

**Distribution:-**

1. SO (Safety & Training), N K Area, Dakra.

**Copy for Kind Information please:-**

1. GM (HRD), CCL, Ranchi.
2. General Manager, N.K. Area, Dakra

V.T.C., N.K.  
Despatch No. 652  
Date: 02.01.2020



**OFFICE OF THE  
GROUP VOCATIONAL  
TRAINING CENTER  
NORTH KARNPURA AREA, DAKRA**  
*A Miniratna Co.*

E9916859471IN INR:6974916859471  
SP DAKRA COLLEERY SO 3829210  
Counter No:1,03/01/2020,10:10  
To:THE D OF N SA, KANKE ROAD RANCHI  
PIN:834008, Ranchi University S.O  
From:GROUP V T G, N K AREA DAKRA  
Wt:10gms  
Amt:41.30(Cash)/Tax:6.30  
<Track on www.indiapost.gov.in>  
<Dial 1800 266 6886>

Date: **Month:-DECEMBER 2019**

To,  
The Director of Mines Safety,  
SEZ Ranchi, Ranchi Region,  
RI-III, CMPDIL Complex, Kanke Road, Ranchi, Jharkhand, Pin-834008

**Sub:-Project wise training report at GVTC, NK Area Dakra for the month of December 2019.**

Dear Sir,

Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl.	Basic	Refresher	Spl.
KDH	99	---	---	---	---	---	---	07	103	03	07	02	---
DAKRA	65	---	---	---	---	---	---	09	66	07	06	04	---
ROHINI	52	02	02	-	05	05	---	04	52	06	33	12	---
PURNADIH	60	---	01	---	---	---	---	06	60	03	05	08	---
CHURI	55	---	---	---	08	---	---	28	66	01	98	28	---
RR Shop	20	---	04	---	---	---	---	01	20	---	---	---	---
G M O	---	---	---	---	---	---	---	22	---	---	---	---	---
<b>TOTAL</b>	<b>351</b>	<b>02</b>	<b>07</b>	<b>---</b>	<b>13</b>	<b>05</b>	<b>---</b>	<b>77</b>	<b>367</b>	<b>20</b>	<b>149</b>	<b>54</b>	<b>---</b>
<b>M &amp; A</b>	<b>---</b>	<b>01</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>35</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
<b>RAJHARA</b>	<b>---</b>	<b>---</b>	<b>07</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>53</b>	<b>24</b>	<b>---</b>	<b>16</b>	<b>---</b>	<b>---</b>
<b>GRAND TOTAL</b>	<b>---</b>	<b>03</b>	<b>14</b>	<b>---</b>	<b>13</b>	<b>05</b>	<b>---</b>	<b>165</b>	<b>391</b>	<b>20</b>	<b>165</b>	<b>54</b>	<b>---</b>

02.01.2020

V T Manager  
Group Vocational Training Center  
NK Area Dakra

**Distribution:-**

1. SO (Safety & Training), N K Area, Dakra.
2. The Project Officer-Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop/M&A/Rajhara

**Copy for Kind Information please:-**

1. GM (HRD), CCL, Ranchi.
2. General Manager, N.K. Area, Dakra



**CENTRAL COAL FIELDS LIMITED**  
**OFFICE OF THE VT MANAGER**  
**Group Vocational Training Center**  
**N.K. Area Dakra , P.O.-Dakra, PIN-829210, Dist-Ranchi**

Date: 01/11/19

To,  
 The Director of Mines Safety,  
 SEZ Ranchi, Ranchi Region,  
 RI-III, CMPDIL Complex, Kanke Road, Ranchi, Jharkhand, PIN 834008.

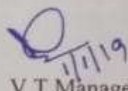
**Sub:- Project wise training report at GVTC, NK Area, Dakra for the calender year 2018.**

Dear Sir,

Please find with the training reports at Group Vocational Training Center NK Area Dakra

Project Name	Annual Target	Training during the month						Progressive					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl.	Basic	Refresher	spl	Basic	Refresher	Spl.	Basic	Refresher	Spl.
KDH	35	—	—	—	—	—	—	03	36	—	03	—	—
Dakra	60	—	—	—	06	—	—	08	61	—	07	04	—
Rohini	51	—	—	—	11	04	—	11	53	—	41	19	—
PND	60	—	07	—	—	02	—	18	62	—	02	07	—
Churi	60	—	—	02	04	—	—	02	62	05	63	21	—
RR Shop	20	—	07	—	—	—	—	—	20	—	—	—	—
Gmo	—	—	—	—	—	—	—	08	—	—	—	—	—
<b>Total</b>	<b>286</b>	—	14	02	21	06	—	50	294	05	116	51	—

M&A	—	—	—	—	—	—	—	50	—	—	—	—	—
Rajhara	—	—	10	—	—	—	—	—	10	—	—	—	—
<b>Total</b>	—	—	10	—	—	—	—	50	10	—	—	—	—

  
 V T Manager  
 Group Vocational Training Center  
 NK Area Dakra

Distribution:-

- SO(Safety&Training), NK,

Copy for Kind Information Please:-

- General Manager, N.K. Area Dakra

*etc*



COALFIELDS LIMITED  
 SF DAKRA COLLIERY <829210>  
 GSTH No: 20AAA090961L125  
 E: 3913162718 TN  
 Counter No: 1, DF-Codes P6  
 To: DIRECTOR OF MINES SA, RANCHI  
 RANCHI, PIN: 834008  
 From: MANAGER GROUP VOCATIONAL TRAINING, NK DAKRA  
 Dt: 02/01/2018 . 10:57  
 Amt: 41.00  
 REGD @ 3% SGT @ 3%



COALFIELDS LIMITED  
 (Niratna Company)  
 OF THE VT MANAGER  
 GROUP VOCATIONAL TRAINING CENTER  
 210, DIST-RANCHI (JHARKHAND)

Month-DECEMBER 2017

R R Shop/Magadh - Amrapali/Rajhara.  
 at GVTC, NK Area, Dakra.

Dear Sir,

Kindly find placed hereunder format in respect of training reports at Group Vocational Training Centre, NK Area for your kind perusal.

Project Name	Annual Target Ref)	Training during the month						Progressive					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Special	Basic	Ref.	Specil	Basic	Refresher	Special	Basic	Ref.	Special
KDH	132	---	---	----	----	----	01	133	----	28	11	----	
Dakra	64	---	---	----	----	----	15	64	02	08	09	----	
Rohini	72	---	---	----	----	03	16	72	----	13	03	----	
Purnadih	100	---	24	----	----	02	05	101	----	07	05	----	
Churi U/G	72	01	01	----	----	----	02	76	----	05	33	----	
M R S Churi	---	---	---	----	----	----	----	----	----	----	----	----	
R.R.S Dakra	20	---	02	----	----	----	01	20	----	----	----	----	
GM Unit	---	---	---	----	----	----	01	----	----	----	----	----	
Total	460	01	27	----	---	05	41	466	02	61	61	----	

M & A	----	02	----	----	----	----	21	----	----	----	----	----
Rajhara	----	----	----	----	----	----	----	14	----	----	----	----

19/1/2018

VT Manager,  
 Group Vocational Training Centre  
 N K, Area, Dakra

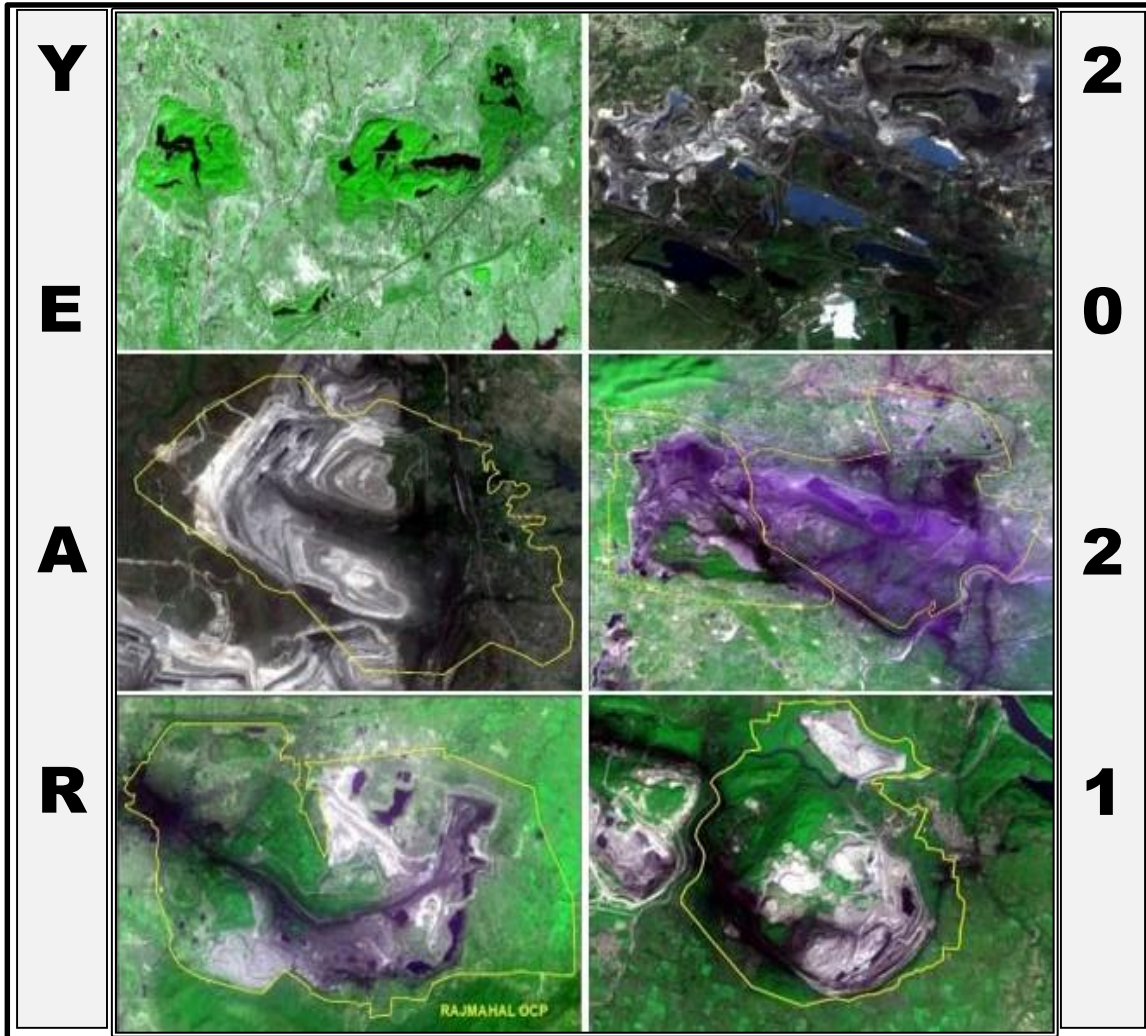
Copy to:-

1. SO (Safety)/Area Training Officer, N K Area, Dakra.

Copy for kind information:-

- 1 GM (HRD), CCL
2. General Manager, NK Area Dakra.

**Land Restoration / Reclamation Monitoring of 76 Opencast Coal Mines Projects of CIL producing more than 5 mcm (Coal+OB) annually based on Satellite Data for the Year 2021**



*cmpdi*  
A Mini-Ratna Company

**Land Restoration / Reclamation Monitoring of 76 Opencast  
Coal Mines Projects of CIL producing more than 5 mcm  
(Coal+OB) annually based on Satellite Data for the Year  
2021**

**March- 2022**



**Remote Sensing Cell  
Geomatics Division  
CMPDI, Ranchi**

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## Executive Summary

- 1.0 Project** Land restoration / reclamation monitoring of 76 opencast coal mines in different subsidiaries of Coal India Ltd. (CIL) producing 5 million cu.m. and more (Coal+OB) per year based on satellite data of year 2021 on annual basis.
- 2.0 Objective** Objective of the land restoration / reclamation monitoring is to assess the area under backfilling, plantation, social forestry, active mining area, water bodies, distribution of wasteland, agricultural land and forest in the leasehold area of the projects. This will help in assessing the progressive status of mined land reclamation and to take up remedial measures, if any, required for environmental protection.
- 3.0 Salient Findings**
- In the year 2021, amongst projects of different subsidiaries of Coal India Ltd. taken up for monitoring, WCL has included 4 more mines. CCL has included 8 more mines, SECL has included more 11 mines and MCL has included 2 more mine for monitoring from this year as per directive received from CIL. Some of these additional mines were previously monitored under Less than 5 mcm (Coal+OB) Category and some mines are new additions Hence, total of 76 mines were selected for monitoring this year instead of 51 mines that were monitored in the year 2020.
  - Out of the total mine leasehold area of 863.83 Km<sup>2</sup> of the 76 OC projects considered for monitoring during 2021-22; total excavated area is 302.65 Km<sup>2</sup>; out of which 136.23 Km<sup>2</sup> area (45.01%) is under backfilling (Technical Reclamation), 53.02 Km<sup>2</sup> area (17.52%) has been planted (Biologically Reclaimed) and 113.40 Km<sup>2</sup> area (37.47%) is under active mining. It is evident from the analysis that 189.25 Km<sup>2</sup> (62.53%) area out of the total excavated area of 302.65 Km<sup>2</sup> of the 76 OC projects is already under reclamation and balance 113.40 Km<sup>2</sup> (37.47%) area is under active mining. Company wise details are given in Table - 1 & Fig-1.
  - On comparing the status of land reclamation carried out in year 2020-21 with respect to years 2021-22 in the 76 Opencast projects of different CIL subsidiaries, it is evident from the analysis of the satellite data of the year 2021 that area under land reclamation has increased from 173.95 Km<sup>2</sup> (Yr. 2020-21) to

189.25 Km<sup>2</sup> (Yr. 2021-22), which includes both area under plantation (Biological Reclamation) and areas under backfilling (Technical Reclamation). This increase of 15.30 Km<sup>2</sup> area of land reclamation in last one year is the result of the efforts made by CIL's subsidiary companies towards land reclamation. Year wise comparison in land reclamation in different subsidiaries is given in Fig.2.

- It has been observed that in all the subsidiaries of Coal India Limited (CIL), technical reclamation has shown an increasing trend. As compared to the analysis done in the year 2020, it has been found that there has been an overall increase of 12.91 Km<sup>2</sup> in area under technical reclamation commutatively in the year 2021.
- It has been observed that in WCL, SECL, NCL, CCL & ECL area under biological reclamation has increased in comparison to previous year whereas in MCL area under biological reclamation has reduced marginally in the leasehold areas of the opencast projects selected for this study (Refer Table-1).
- It has been also observed that in subsidiaries like WCL, SECL, MCL, CCL & ECL, total area under plantation (Green Cover) which includes plantation over backfill, plantation over overburden dumps and plantation done under social forestry etc. has increased as compared to previous year. However, in NCL, there has been marginal decrease in area under green cover due to additional dump on vegetated area in Jhingurdah project. In NCL, leasehold boundaries of all the projects taken up of monitoring are updated with latest available EC boundaries which has resulted change in position and area of the projects impacting area under plantation and vegetation. Overall 18.09% of the total leasehold area of all the subsidiaries of CIL commutatively is under Green Cover as per the analysis of satellite data of the year 2021.
- Analysis of the results based on satellite data of the year 2021 also indicate that all subsidiaries of CIL, whose projects were under monitoring indicate an increasing trend for area under reclamation. It has been observed that total area under reclamation has increased from 173.95 Km<sup>2</sup> (62.16%) in 2020 to 189.25 Km<sup>2</sup> (62.53%) in the year 2021.

Commutative Status of Land Reclamation monitoring based on satellite data of the year 2021 is indicated in the Pie Chart in the

Fig. 1. Subsidiary wise status of Land Reclamation Monitoring of the projects monitored based on satellite data of the year 2021 is shown in form of Bar Chart at Fig 2. Comparison of Area under Reclamation in different subsidiaries of Coal India Limited between the years 2020 to 2021 has been shown in form of Bar-Chart in Fig 3.



**CENTRAL COALFIELDS LIMITED**

## 9.0 Land Reclamation Status in Central Coalfields Ltd.

9.1 The following 15 OC projects of Central Coalfields Ltd. producing more than 5 million m<sup>3</sup>. (Coal + OB) annually, have been taken up for land reclamation monitoring based on Satellite data of the year 2021.

No.	Name of OC Project	Coalfield Name
1	Ashok	North Karanpura (NK)
2	Piparwar	
3	KDH	
4	Amrapali	
5	Magadh	
6	Rohini *	
7	Purnadih *	
8	North Urimari *	South Karanpura (SK)
9	Rajrappa	Ramgarh
10	Parej East	West Bokaro (WB)
11	Tapin North *	
12	Kathara *	East Bokaro (EB)
13	Karo *	
14	Konar Expansion *	
15	Selected Dhorri *	

\*Yearly monitoring started from (2021-22)

9.2 Area statistics of different land use/ cover classes present in the leasehold area of the above 15 projects of CCL for the year 2021 are shown in Table 9.1. Land use/ cover maps derived from satellite data are shown in Plate 9.1 – 9.15. Report on land reclamation status of the above projects are also prepared. Year wise changes in different land use/ cover classes in the last three years (wherever applicable) based on satellite data are shown in Bar charts in Fig. 9.2 – 9.16.

- 9.3** Study based on Satellite data of the year 2021 reveals that, out of total excavated area of 36.49 km<sup>2</sup>, 25.99 km<sup>2</sup> (71.22%) has come under reclamation in the above 15 OC projects of CCL, out of which 18.01 km<sup>2</sup> (49.36%) area is under backfilling (Technical Reclamation) and 7.98 km<sup>2</sup> (21.87%) area is under plantation (Biological Reclamation).
- 9.4** Study also reveals that the area under backfilling (Technical Reclamation) has increased from 15.20 km<sup>2</sup> in 2020 to 18.01 km<sup>2</sup> in 2021.
- 9.5** Analysis of satellite data also indicates that the area under plantation (Biological Reclamation) has increased from 7.00 km<sup>2</sup> (Yr. 2020) to 7.98 km<sup>2</sup> (Yr. 2021). This increase in Biological Reclamation reflects continuous efforts on part of CCL in continuing reclamation activities for environmental protection.
- 9.6** The total area under reclamation has increased from 22.20 km<sup>2</sup> (69.05%) in 2020 to 25.99 km<sup>2</sup> (71.22%) in 2021, out of the total excavated area.
- 9.7** It is also seen that the total area under plantation (**Green Cover**) which includes plantation carried out on backfilled area, OB dumps as well as plantation done on social forestry in all the 15 mines taken together of CCL has increased from 17.32 km<sup>2</sup> in the year 2020, to 17.71 km<sup>2</sup> in the year 2021
- 9.8** Piparwar area of CCL has developed and maintained an eco-restoration park called “**Kayakalp Vatika**” at Piparwar OCP, over the reclaimed (backfilled) land. Nearby, a new eco park named ‘**Chandra Shekhar Azad Vatika**’ is also being developed from 2020.
- 9.10** Out of 15 projects of CCL taken for land reclamation monitoring in 2021-22, **Parej East** OC ranks on top for land reclamation (86.98%) followed by **KDH** (85.60%), **Piparwar** OC (82.73%), Ashok OC (82.14%), and Rajrappa OC (79.61%).
- 9.11** Eight (8) OC projects namely, Purnadih, Rohini, North Urimari, Tapin North, Kathara, Karo, Konar Expansion and Selected Dhori were added to the list of yearly reclamation

monitoring from the year 2021-22. Earlier these projects were monitored in every three year basis.

- 9.12** Amrapali OCP has successfully carried out plantation on OB dumps, and slopes of OB dump through seed ball throwing.

**TABLE – 9.1**  
**Project wise Land Reclamation Status in OC projects of CCL based on Satellite Data of the Year 2021**

*(Projects producing more than 5 mcm of Coal + OB annually)*

*(Area in Sq. Kms.)*

Sl. No.	Project	Total Mine Leasehold Area		Technical Reclamation		Plantation						Area under Active Mining		Total Excavated Area		Total Area under Plantation (% Green Cover Generated in Leasehold)		Total Area under Reclamation	
						Biological Reclamation		Other Plantations											
				Area under Backfilling		Plantation on Excavated / Backfilled Area		Plantation on External Over Burden		Social Forestry, Avanie, Plantation Etc.				9 (=4+5+8)		10 (=5+6+7)		11(=4+5)	
1	2	3		4		5		6		7		8		9 (=4+5+8)		10 (=5+6+7)		11(=4+5)	
		2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
1	Ashok	7.93	7.93	2.35	2.47	1.02	1.21	0.00	0.00	0.27	0.17	0.66	0.80	4.03	4.48	1.29	1.38	3.37	3.68
				58.31%	55.13%	25.31%	27.01%					16.38%	17.86%			16.27%	17.40%	83.62%	82.14%
2	Piparwar	11.20	11.20	2.91	2.75	1.45	1.85	0.42	0.19	1.18	1.18	0.98	0.96	5.34	5.56	3.05	3.22	4.36	4.60
				54.49%	49.46%	27.15%	33.27%					18.35%	17.27%			27.23%	28.75%	81.65%	82.73%
3	KDH	6.20	6.20	1.79	1.74	1.32	1.35	0.03	0.03	0.21	0.21	0.49	0.52	3.60	3.61	1.56	1.59	3.11	3.09
				49.72%	48.20%	36.67%	37.40%					13.61%	14.40%			25.16%	25.65%	86.39%	85.60%
4	Amrapali	6.20	6.20	1.20	1.32	0.00	0.00	0.05	0.08	0.02	0.02	1.07	1.10	2.27	2.42	0.07	0.10	1.20	1.32
				52.86%	54.55%	0.00%	0.00%					47.14%	45.45%			1.13%	1.61%	52.86%	54.55%
5	Magadh	17.69	17.69	0.55	0.60	0.00	0.00	0.10	0.10	0.00	0.00	0.78	0.92	1.33	1.52	0.10	0.10	0.55	0.60
				41.35%	39.47%	0.00%	0.00%					58.65%	60.53%			0.57%	0.57%	41.35%	39.47%
6	Parej East	6.20	6.20	0.72	0.75	0.69	0.72	0.05	0.05	0.09	0.09	0.22	0.22	1.63	1.69	0.83	0.86	1.41	1.47
				44.17%	44.38%	42.33%	42.60%					13.50%	13.02%			13.39%	13.87%	86.50%	86.98%
7	Rajrapa	19.82	19.82	2.37	2.40	1.3	1.27	3.02	3.02	2.02	2.02	0.80	0.94	4.47	4.61	6.34	6.31	3.67	3.67
				53.02%	52.06%	29.08%	27.55%					17.90%	20.39%			31.99%	31.84%	82.10%	79.61%
8	Rohini	2.58	2.56	1.22	1.27	0.42	0.48	0.01	0.11	0.00	0.00	0.67	0.48	2.31	2.23	0.43	0.59	1.64	1.75
				52.81%	56.95%	18.18%	21.52%					29.00%	21.52%			16.67%	23.05%	71.00%	78.48%
9	Purnadih	7.56	7.52	0.41	0.92	0.09	0.19	0.03	0.12	0.00	0.03	0.95	0.52	1.45	1.63	0.12	0.34	0.50	1.11
				28.28%	56.44%	6.21%	11.66%					65.52%	31.90%			1.59%	4.52%	34.48%	68.10%
10	North Urimari	6.68	5.17	0.50	0.25	0.16	0.14	0.01	0.07	0.00	0.00	1.32	1.00	1.98	1.39	0.17	0.21	0.66	0.39
				25.25%	17.99%	8.08%	10.07%					66.67%	71.94%			2.54%	4.06%	33.33%	28.06%
11	Tapin North		3.04		0.91		0.00		0.12		0.00		0.66		1.57		0.12		0.91
					57.96%		0.00%						42.04%				3.95%		57.96%
12	Kathara	7.93	7.71	0.61	0.65	0.32	0.33	1.04	0.96	0.89	0.83	0.77	0.62	1.70	1.60	2.25	2.12	0.93	0.98
				35.88%	40.63%	18.82%	20.63%					45.29%	38.75%			28.37%	27.50%	54.71%	61.25%
13	Karo	5.75	5.26	0.17	0.55	0.14	0.14	0.12	0.14	0.16	0.12	0.34	0.39	0.65	1.08	0.42	0.40	0.31	0.69
				26.15%	50.93%	21.54%	12.96%					52.31%	36.11%			7.30%	7.60%	47.69%	63.89%
14	Konar Exp.	7.29	4.71	0.09	0.88	0.03	0.30	0.24	0.01	0.19	0.01	0.41	0.85	0.53	2.03	0.46	0.32	0.12	1.18
				16.98%	43.35%	5.66%	14.78%					77.36%	41.87%			6.31%	6.79%	22.64%	58.13%
15	Sel Dhori	3.00	2.65	0.31	0.55	0.06	0.00	0.17	0.04	0.00	0.01	0.49	0.52	0.86	1.07	0.23	0.05	0.37	0.55
				36.05%	51.40%	6.98%	0.00%					56.98%	48.60%			7.67%	1.89%	43.02%	51.40%
	<b>TOTAL</b>	<b>116.03</b>	<b>113.86</b>	<b>15.20</b>	<b>18.01</b>	<b>7.00</b>	<b>7.98</b>	<b>5.29</b>	<b>5.04</b>	<b>5.03</b>	<b>4.69</b>	<b>9.95</b>	<b>10.50</b>	<b>32.15</b>	<b>36.49</b>	<b>17.32</b>	<b>17.71</b>	<b>22.20</b>	<b>25.99</b>
				<b>47.28%</b>	<b>49.36%</b>	<b>21.77%</b>	<b>21.87%</b>					<b>30.95%</b>	<b>28.78%</b>			<b>14.93%</b>	<b>15.55%</b>	<b>69.05%</b>	<b>71.22%</b>

*(% is calculated with respected to Excavated Area as applicable)*

<b>Note:</b>	<i>In reference of the above <b>Table-9.1</b>, different parameters are classified as follows:</i>
1	<i>Leasehold area as per the respective environmental clearance (EC) boundary</i>
2	<i>Yearly monitoring of <b>Eight (8)</b> more Projects namely, <b>Rohini, Purnadih, North Urimari, Kathara, Tapin North, Konar, Karo &amp; Sel Dhori</b> started from current year (2021-22)</i>
3	<i>Area under <b>Biological Reclamation</b> includes Area under Plantation done on Backfilled area only</i>
4	<i>Area under <b>Technical Reclamation</b> includes Area under Backfilling only</i>
5	<i>Area under <b>Active Mining</b> includes Coal Quarry, Quarry filled with water &amp; Advance Quarry Site, if any. Coal dump is excluded</i>
6	<i>Social Forestry and Plantation on External OB dumps are not included in Biological Reclamation, and are put under separate categories</i>
7	<i>(%) calculated in the above table is in respect of total excavated area only, except for "<b>Total area under Plantation</b>" where % is in terms of Leasehold Area.</i>

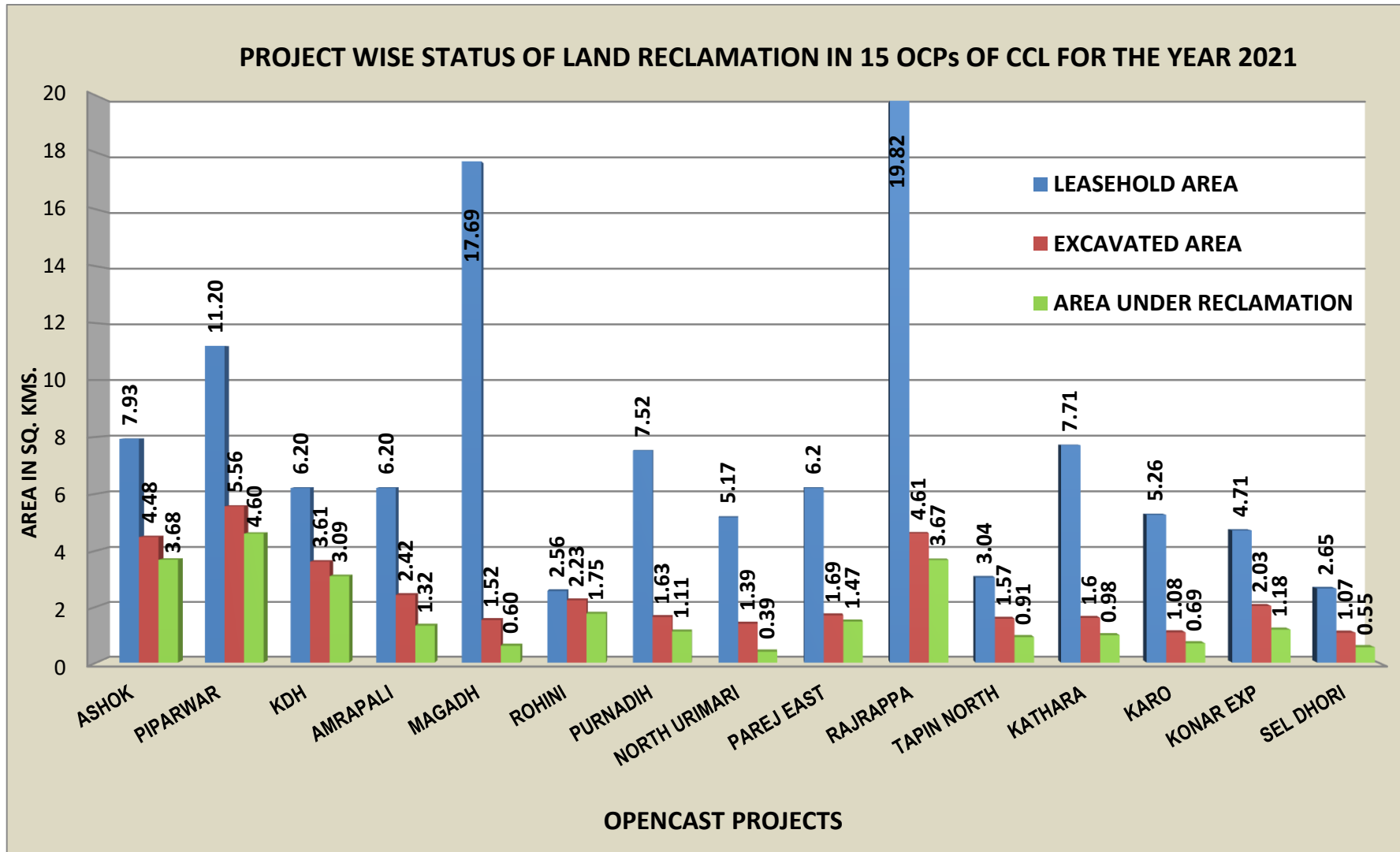


Fig. 9.1: Project wise Land Reclamation Status in Year 2021

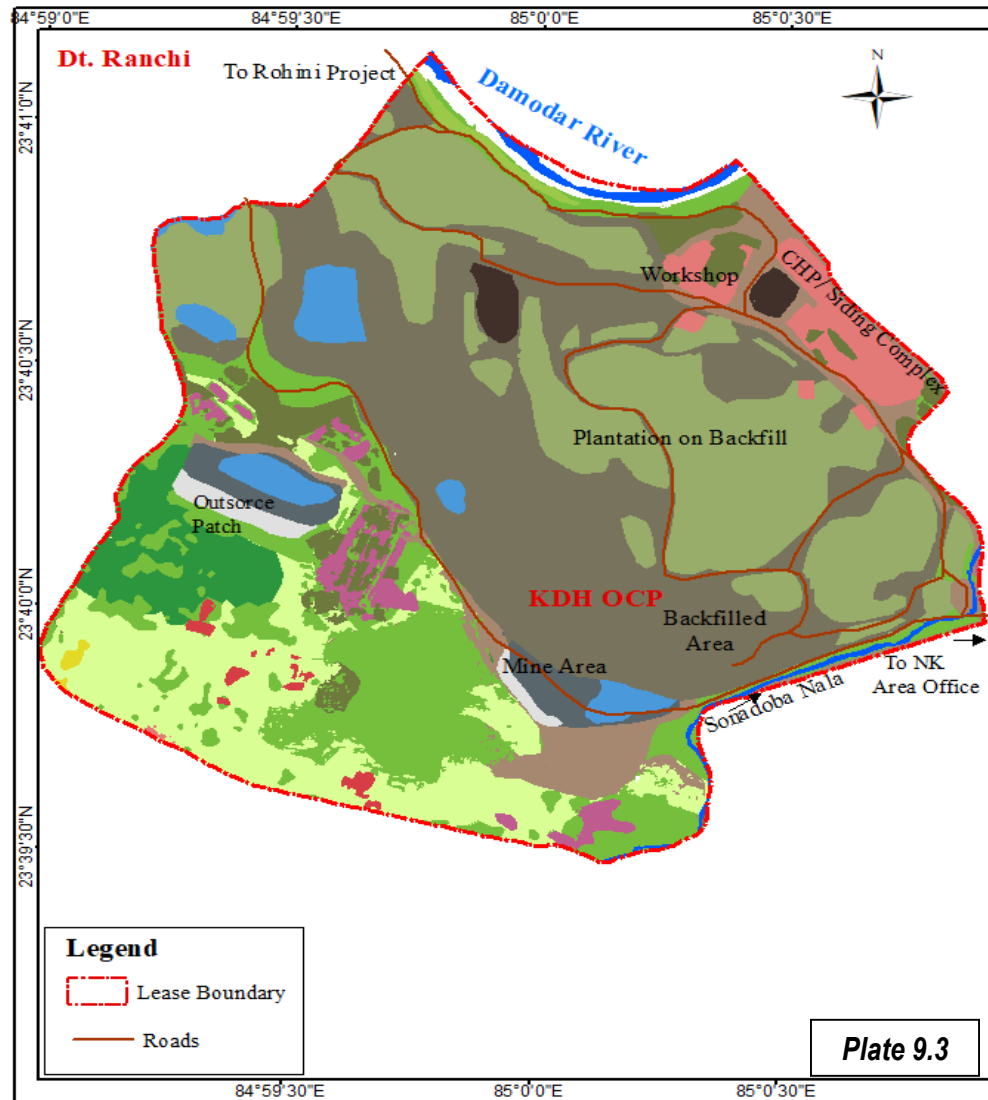


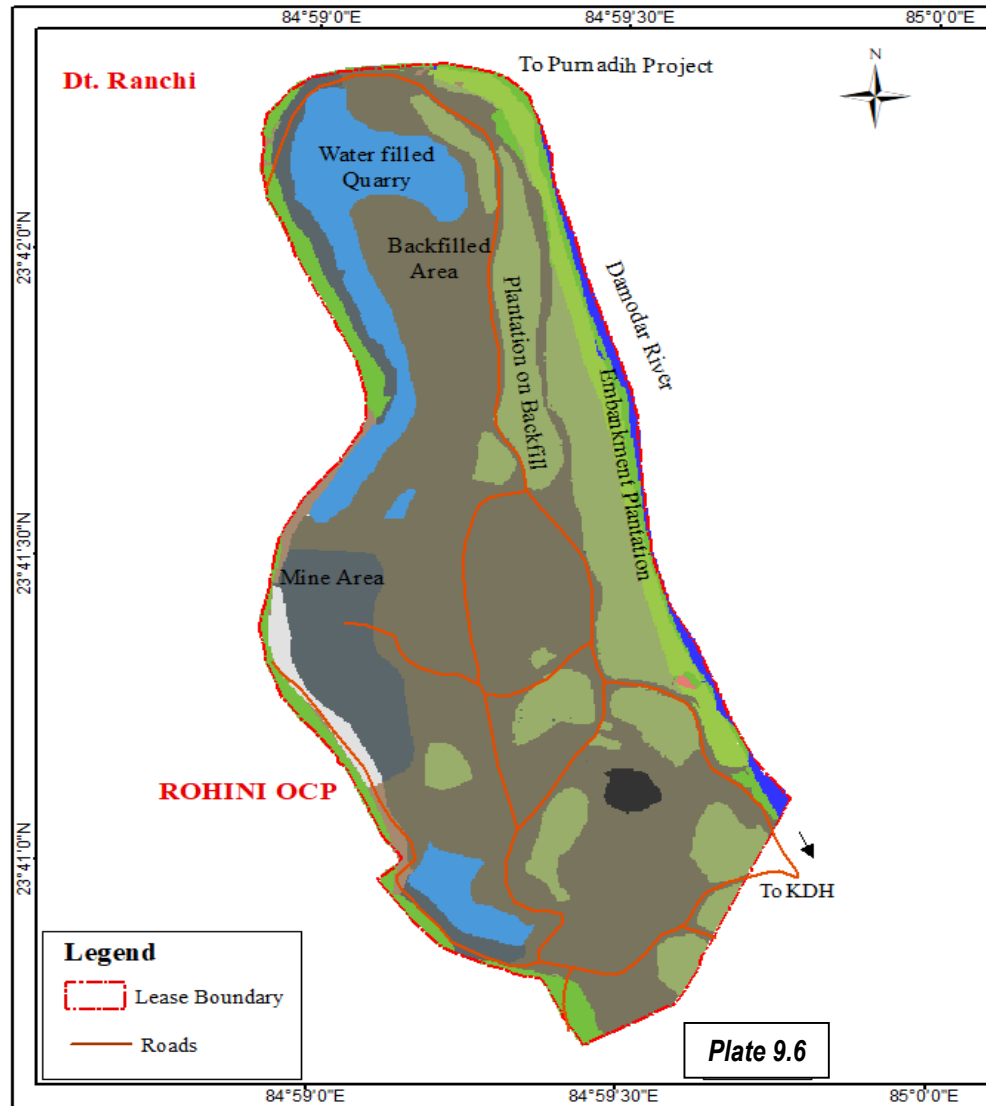
Plate 9.3

Area Statistics - KDH OCP (2021)			
Classes		Colour	Area
Level-I	Level-II		(Km <sup>2</sup> ) % of Total
Forest Area	Dense Forest		0.00 0.00
	Open Forest		0.20 3.23
	<b>Total Forest Area</b>		<b>0.20 3.23</b>
Scrub	Scrub		0.75 12.10
	Social Forestry		0.21 3.39
	Plantation on Backfill		1.35 21.77
Plantation	Plantation on OB Dump		0.03 0.48
	<b>Total Plantation</b>		<b>1.59 25.65</b>
	<b>Total Vegetation Area</b>		<b>2.54 40.97</b>
Agriculture	Crop Land		0.00 0.00
	Fallow Land		0.62 10.00
	<b>Total Agriculture Area</b>		<b>0.62 10.00</b>
Waste Land	Waste Land		0.28 4.52
	Sand Body		0.04 0.65
	<b>Total Waste Land</b>		<b>0.32 5.16</b>
Mining Area	Coal Quarry		0.16 2.58
	Barren OB Dump		0.03 0.48
	Area Under Backfilling		1.74 28.06
	Water Filled Quarry		0.30 4.84
	Coal Dump		0.05 0.81
	Advance Quarry Site		0.06 0.97
<b>Total Mining Area</b>		<b>2.34 37.74</b>	
Settlements	Rural Settlement		0.02 0.32
	Urban Settlement		0.11 1.77
	Industrial Settlement		0.18 2.90
<b>Total Settlement Area</b>		<b>0.31 5.00</b>	
Water Body	River, Ponds		0.07 1.13
<b>Total</b>			<b>6.20 100.00</b>

Customer		Central Coalfields Limited		
Title		Land Reclamation Monitoring of OC Projects		Job No. 561410027
Subject Land Reclamation Status of KDH OCP based on Satellite Data (RS-2/L-IV) of the year 2021	Activity	Name	Designation	Signature
	Prepared	Hariharalal B	Ch. Mgr(System)	<i>Hariharalal B</i>
	Checked	Tilak Mandal	Ch. Mgr(RSC)	<i>Tilak Mandal</i>
Approved	R. Kumar	GM(Geomatics)	<i>R. Kumar</i>	
Scale:		0 0.25 0.5 1 km		Sheet 1
Drg No.		HQ REM 21 3 A4 03		Rev No.0







Area Statistics - Rohini OCP (2021)				
Classes		Colour	Area	
Level-I	Level-II		Area (Km <sup>2</sup> )	% of Total
Forest Area	Dense Forest		0.00	0.00
	Open Forest		0.00	0.00
	<b>Total Forest Area</b>		<b>0.00</b>	<b>0.00</b>
Scrubs	Scrubs		0.11	4.30
	Social Forestry		0.00	0.00
Plantation	Plantation on Backfill		0.48	18.75
	Plantation on OB Dump		0.11	4.30
	<b>Total Plantation</b>		<b>0.59</b>	<b>23.05</b>
<b>Total Vegetation Area</b>			<b>0.70</b>	<b>27.34</b>
Agriculture	Crop Land		0.00	0.00
	Fallow Land		0.00	0.00
<b>Total Agriculture Area</b>			<b>0.00</b>	<b>0.00</b>
Waste Land	Waste Land		0.06	2.34
	<b>Total Waste Land</b>		<b>0.06</b>	<b>2.34</b>
Mining Area	Coal Quarry		0.22	8.59
	Barren OB Dump		0.00	0.00
	Area Under Backfilling		1.27	49.61
	Water Filled Quarry		0.24	9.38
	Coal Dump		0.01	0.39
	Advance Quarry Site		0.02	0.78
<b>Total Mining Area</b>			<b>1.76</b>	<b>68.75</b>
Settlements	Rural Settlement		0.00	0.00
	Urban Settlement		0.00	0.00
	Industrial Settlement		0.00	0.00
<b>Total Settlement Area</b>			<b>0.00</b>	<b>0.00</b>
Water Body	River, Ponds		0.04	1.56
<b>Total</b>			<b>2.56</b>	<b>100.00</b>

<b>Customer</b>		Central Coalfields Limited			
<b>Title</b>		Land Reclamation Monitoring of OC Projects			Job No. 561410027
<b>Subject</b> Land Reclamation Status of Rohini OCP based on Satellite Data (RS-2/L-IV) of the year 2021	Activity	Name	Designation	Signature	
	Prepared	Hariharalal B	Ch. Mgr(System)	<i>[Signature]</i>	
	Checked	Tilak Mandal	Ch. Mgr(RSC)	<i>[Signature]</i>	
Approved	R. Kumar	GM(Geomatics)	<i>[Signature]</i>		
Scale:		0 125 250 500 Meters			Sheet 1
Drg.No.		HQ REM 21 3 A4 06			Rev No.0



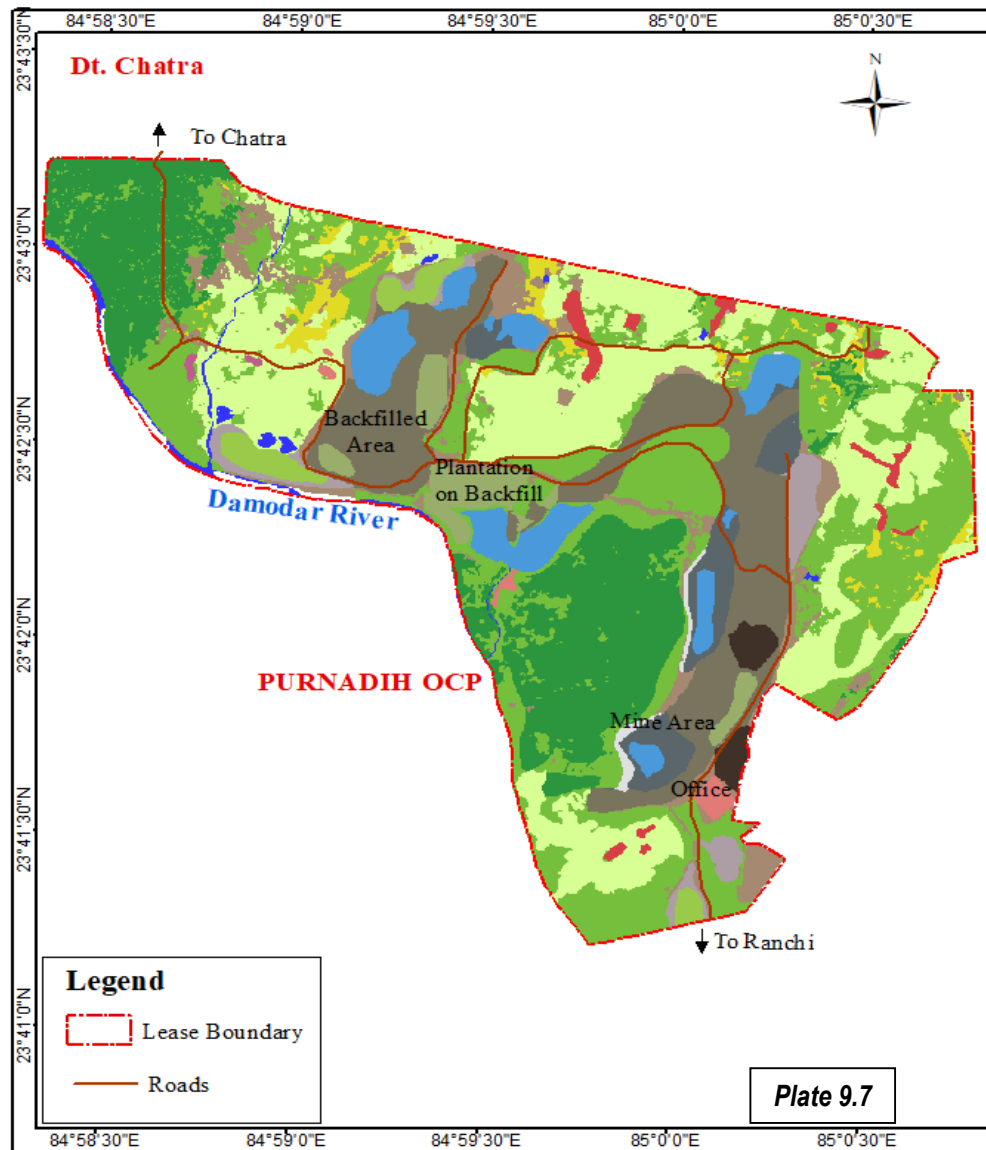


Plate 9.7

Area Statistics - Purnadih OCP (2021)				
Classes		Colour	Area	
Level-I	Level-II		Area (Km <sup>2</sup> )	% of Total
Forest Area	Dense Forest		0.00	0.00
	Open Forest		1.15	15.29
<b>Total Forest Area</b>			<b>1.15</b>	<b>15.29</b>
Scrubs	Scrubs		2.03	26.99
	Social Forestry		0.03	0.40
Plantation	Plantation on Backfill		0.19	2.53
	Plantation on OB Dump		0.12	1.60
	<b>Total Plantation</b>		<b>0.34</b>	<b>4.52</b>
<b>Total Vegetation Area</b>			<b>3.52</b>	<b>46.81</b>
Agriculture	Crop Land		0.19	2.53
	Fallow Land		1.51	20.08
	<b>Total Agriculture Area</b>		<b>1.70</b>	<b>22.61</b>
Waste Land	Waste Land		0.42	5.59
	<b>Total Waste Land</b>		<b>0.42</b>	<b>5.59</b>
Mining Area	Coal Quarry		0.20	2.66
	Barren OB Dump		0.17	2.26
	Area Under Backfilling		0.92	12.23
	Water Filled Quarry		0.30	3.99
	Coal Dump		0.06	0.80
	Advance Quarry Site		0.02	0.27
<b>Total Mining Area</b>			<b>1.67</b>	<b>22.21</b>
Settlements	Rural Settlement		0.09	1.20
	Urban Settlement		0.01	0.13
	Industrial Settlement		0.04	0.53
<b>Total Settlement Area</b>			<b>0.14</b>	<b>1.86</b>
Water Body	River, Ponds		0.07	0.93
<b>Total</b>			<b>7.52</b>	<b>100.00</b>

Customer		Central Coalfields Limited			
Title		Land Reclamation Monitoring of OC Projects			Job No. 561410027
Subject	Activity	Name	Designation	Signature	
Land Reclamation Status of Purnadih OCP based on Satellite Data (RS-2/L-IV) of the year 2021	Prepared	Hariharalal B	Ch. Mgr(System)		
	Checked	Tilak Mandal	Ch. Mgr(RSC)		
	Approved	R. Kumar	GM(Geomatics)		
Scale:					Sheet 1
Drg.No.		HQ REM 21 3 A4 07			Rev No.0



*cmpdi*  
*A Mini-Ratna Company*

## Central Mine Planning & Design Institute Ltd.

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## TEST REPORT

<b>06/23 Test Report No. Metal / 01</b>		<b>Job No 094322160</b>	2023-24
Type of Sample	Ambient Air	Quarter Ending	June' 2023
Customer	CCL	Date of Receipt of Sample:	17/04/2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/06/23-14/07/23
Sampling Protocol:	USEPA IO-3.2: 1999, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

### TEST RESULT

The sample has been tested with the following results: -

<b>Area :</b>	<b>North Karanpura</b>	<b>Project:</b>	<b>Rohini OCP</b>
<b>Stations:</b>	1. P.O.Office 2. Ashok Vihar Colony 3. Intake Well Pump 4. Workshop		<b>Date of Sampling:</b> 03-04/04/2023 03-04/04/2023 03-04/04/2023 03-04/04/2023

S.No	Test Parameters	Units	Test Result				Method detection Limit	Limit (NAA QS-2011)	Test Method
			1	2	3	4			
Stations:			1	2	3	4			
1	Conc. of As in Air	ng/m <sup>3</sup>	0.87	0.45	0.57	1.14	0.1	6.00	USEPA IO-3.2:1999
2	Conc. of Ni in Air	ng/m <sup>3</sup>	0.48	0.32	0.51	1.77	0.1	20.00	USEPA IO-3.2:1999
3	Conc. of Pb in Air	µg/m <sup>3</sup>	0.009	0.017	0.014	0.016	0.005	1.0	USEPA IO-3.2: 1999
4	Conc. of Cu in Air	ng/m <sup>3</sup>	0.2	0.19	0.11	0.26	0.1	-	USEPA IO-3.2: 1999
5	Conc. of Cd in Air	ng/m <sup>3</sup>	0.022	<0.02	0.031	0.032	0.02	-	USEPA IO-3.2: 1999
6	Conc. of Cr in Air	ng/m <sup>3</sup>	0.23	0.52	0.52	0.14	0.1	-	USEPA IO-3.2: 1999
7	Conc. of Hg in Air	ng/m <sup>3</sup>	<0.005	<0.005	<0.005	<0.005	0.005	-	USEPA IO-3.2: 1999



**TEST REPORT**

06/23 Test Report No. 2200	Job No. 094322160	Year	FY2023-24
Type of Sample	Ambient Air	Quarter Ending	June-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters NAAQS (8 Hourly Average)			Wind Direction (from) & Weather
				Ammonia (in µg/m <sup>3</sup> )	CO (in mg/m <sup>3</sup> )	Ozone (in µg/m <sup>3</sup> )	
Apr.'23 1st FN	03/04/23	03/04/23	03/04/23	<20	0.487	<19.62	E to W
Apr.'23 2nd FN	17/04/23	17/04/23	17/04/23	<20	0.513	<19.62	E to W
May'23 3rd FN	02/05/23	02/05/23	02/05/23	<20	0.464	<19.62	E to W
May'23 4th FN	16/05/23	16/05/23	16/05/23	<20	0.441	<19.62	E to W
June'23 5th FN	01/06/23	01/06/23	01/06/23	<20	0.584	<19.62	E to W
June'23 6th FN	16/06/23	16/06/23	16/06/23	<20	0.522	<19.62	E to W

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

06/23 Test Report No. 2201	Job No. 094322160	Year	FY2023-24
Type of Sample	Ambient Air	Quarter Ending	June-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters NAAQS (8 Hourly Average)			Wind Direction (from) & Weather
				Ammonia (in µg/m <sup>3</sup> )	CO (in mg/m <sup>3</sup> )	Ozone (in µg/m <sup>3</sup> )	
Apr.'23 1st FN	03/04/23	03/04/23	03/04/23	<20	0.453	<19.62	E to W
Apr.'23 2nd FN	17/04/23	17/04/23	17/04/23	<20	0.431	<19.62	E to W
May'23 3rd FN	02/05/23	02/05/23	02/05/23	<20	0.419	<19.62	E to W
May'23 4th FN	16/05/23	16/05/23	16/05/23	<20	0.407	<19.62	E to W
June'23 5th FN	01/06/23	01/06/23	01/06/23	<20	0.472	<19.62	E to W
June'23 6th FN	16/06/23	16/06/23	16/06/23	<20	0.486	<19.62	E to W

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

06/23 Test Report No. 2202	Job No. 094322160	Year	FY2023-24
Type of Sample	Ambient Air	Quarter Ending	June-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters NAAQS (8 Hourly Average)			Wind Direction (from) & Weather
				Ammonia (in µg/m <sup>3</sup> )	CO (in mg/m <sup>3</sup> )	Ozone (in µg/m <sup>3</sup> )	
Apr.'23 1st FN	03/04/23	03/04/23	03/04/23	<20	0.415	<19.62	E to W
Apr.'23 2nd FN	17/04/23	17/04/23	17/04/23	<20	0.397	<19.62	E to W
May'23 3rd FN	02/05/23	02/05/23	02/05/23	<20	0.442	<19.62	E to W
May'23 4th FN	16/05/23	16/05/23	16/05/23	<20	0.329	<19.62	E to W
June'23 5th FN	01/06/23	01/06/23	01/06/23	<20	0.462	<19.62	E to W
June'23 6th FN	16/06/23	16/06/23	16/06/23	<20	0.453	<19.62	E to W

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

06/23 Test Report No. 2203	Job No. 094322160	Year	FY2023-24
Type of Sample	Ambient Air	Quarter Ending	June-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters NAAQS (8 Hourly Average)			Wind Direction (from) & Weather
				Ammonia (in µg/m <sup>3</sup> )	CO (in mg/m <sup>3</sup> )	Ozone (in µg/m <sup>3</sup> )	
Apr.'23 1st FN	03/04/23	03/04/23	03/04/23	<20	0.493	<19.62	E to W
Apr.'23 2nd FN	17/04/23	17/04/23	17/04/23	<20	0.511	<19.62	E to W
May'23 3rd FN	02/05/23	02/05/23	02/05/23	<20	0.438	<19.62	E to W
May'23 4th FN	16/05/23	16/05/23	16/05/23	<20	0.421	<19.62	E to W
June'23 5th FN	01/06/23	01/06/23	01/06/23	<20	0.561	<19.62	E to W
June'23 6th FN	16/06/23	16/06/23	16/06/23	<20	0.477	<19.62	E to W

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>06/23 Test Report No. 2200</b>	<b>Job No. 094322160</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample	Ambient Air	Quarter Ending	Jun-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Apr-23 1st FN</b>	03/04/23-04/04/23	17-04-2023	17/04/23-22/04/23	243	105	44	< 25	< 6	East Sunny
<b>Apr-23 2nd FN</b>	17/04/23-18/04/23	02-05-2023	02/05/23-09/05/23	215	115	55	< 25	< 6	East Sunny
<b>May-23 3rd FN</b>	02/05/23-03/05/23	16-05-2023	16/05/23-22/05/23	144	76	42	< 25	< 6	East Sunny
<b>May-23 4th FN</b>	16/05/23-17/05/23	01-06-2023	01/06/23-09/06/23	261	146	72	< 25	< 6	East Sunny
<b>Jun-23 5th FN</b>	01/06/23-02/06/23	16-06-2023	16/06/23-21/06/23	336	143	69	< 25	< 6	East Sunny
<b>Jun-23 6th FN</b>	16/06/23-17/06/23	03-07-2023	03/07/23-07/07/23	317	143	70	< 25	< 6	East Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

06/23 Test Report No. 2201	Job No. 094322160	Year	FY2023-24
Type of Sample	Ambient Air	Quarter Ending	Jun-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
Apr-23 1st FN	03/04/23-04/04/23	17-04-2023	17/04/23-22/04/23	151	50	32	< 25	< 6	East Sunny
Apr-23 2nd FN	17/04/23-18/04/23	02-05-2023	02/05/23-09/05/23	186	80	42	< 25	< 6	East Sunny
May-23 3rd FN	02/05/23-03/05/23	16-05-2023	16/05/23-22/05/23	181	73	46	< 25	< 6	East Sunny
May-23 4th FN	16/05/23-17/05/23	01-06-2023	01/06/23-09/06/23	161	81	50	< 25	< 6	East Sunny
Jun-23 5th FN	01/06/23-02/06/23	16-06-2023	16/06/23-21/06/23	150	78	34	< 25	< 6	East Sunny
Jun-23 6th FN	16/06/23-17/06/23	03-07-2023	03/07/23-07/07/23	211	80	47	< 25	< 6	East Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>06/23 Test Report No. 2202</b>	<b>Job No. 094322160</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample	Ambient Air	Quarter Ending	Jun-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Apr-23 1st FN</b>	03/04/23-04/04/23	17-04-2023	17/04/23-22/04/23	186	85	48	< 25	< 6	East Sunny
<b>Apr-23 2nd FN</b>	17/04/23-18/04/23	02-05-2023	02/05/23-09/05/23	219	126	69	< 25	< 6	East Sunny
<b>May-23 3rd FN</b>	02/05/23-03/05/23	16-05-2023	16/05/23-22/05/23	165	69	36	< 25	< 6	East Sunny
<b>May-23 4th FN</b>	16/05/23-17/05/23	01-06-2023	01/06/23-09/06/23	137	75	36	< 25	< 6	East Sunny
<b>Jun-23 5th FN</b>	01/06/23-02/06/23	16-06-2023	16/06/23-21/06/23	225	95	52	< 25	< 6	East Sunny
<b>Jun-23 6th FN</b>	16/06/23-17/06/23	03-07-2023	03/07/23-07/07/23	233	97	54	< 25	< 6	East Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

06/23 Test Report No. 2203	Job No. 094322160	Year	FY2023-24
Type of Sample	Ambient Air	Quarter Ending	Jun-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter ( $\text{PM}_{10}$ + $>\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_x$ )	
<b>Apr-23 1st FN</b>	03/04/23-04/04/23	17-04-2023	17/04/23-22/04/23	315	160	54	< 25	< 6	East Sunny
<b>Apr-23 2nd FN</b>	17/04/23-18/04/23	02-05-2023	02/05/23-09/05/23	217	136	73	< 25	< 6	East Sunny
<b>May-23 3rd FN</b>	02/05/23-03/05/23	16-05-2023	16/05/23-22/05/23	237	107	52	< 25	< 6	East Sunny
<b>May-23 4th FN</b>	16/05/23-17/05/23	01-06-2023	01/06/23-09/06/23	212	89	51	< 25	< 6	East Sunny
<b>Jun-23 5th FN</b>	01/06/23-02/06/23	16-06-2023	16/06/23-21/06/23	229	112	58	< 25	< 6	East Sunny
<b>Jun-23 6th FN</b>	16/06/23-17/06/23	03-07-2023	03/07/23-07/07/23	219	118	64	< 25	< 6	East Sunny

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

06/23 Test Report No. 2204	Job No. 094322160	Year	FY2023-24
Type of Sample:	Noise	Quarter Ending	Jun-23
Customer	CCL		
Testing/ Sampling Protocol:	'The noise pollution (Regulation and Control), Rules,2000, LQR 34		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results: -

**Area :****North Karanpura****Project:** Rohini OCP

Station Name	Noise Level dB(A) Leq					
	Apr-23 1st FN	Apr-23 2nd FN	May-23 3rd FN	May-23 4th FN	Jun-23 5th FN	Jun-23 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	03-04-2023	17-04-2023	02-05-2023	16-05-2023	01-06-2023	16-06-2023
<b>1. P.O.Office</b>	69.9/63.8	70.3/64.4	70.6/64.5	69.7/63.6	69.8/63.6	69.7/63.8
Date of recording	03-04-2023	17-04-2023	02-05-2023	16-05-2023	01-06-2023	16-06-2023
<b>2. Ashok Vihar Colony</b>	67.7/61.6	68.6/62.5	68.7/62.4	67.8/61.5	67.7/61.5	67.5/61.6

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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**TEST REPORT**

06/23 Test Report No. 2205	Job No. 094322160	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Jun-23
Customer	CCL	Date of Receipt:	17-04-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.04.23-14.07.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP  
**Stations:** 1. Damodar U/S of Kendua Conf. **Date of Sampling:** 08-04-2023  
 2. Damodar D/S of Kendua Conf. 08-04-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.3	2.5			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	12	10			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	5.7	6.3			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.48	0.49			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	1.06	0.68			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.3	8.3			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	22	20			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	194	184			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	16	19			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.053	0.019			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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**TEST REPORT**

<b>09/23 Test Report No. 2200</b>	<b>Job No. 094323120</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample	Ambient Air	Quarter Ending	Sep-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>x</sub> )	
<b>Jul-23 1st FN</b>	03/07/23-04/07/23	17-07-2023	17/07/23-24/07/23	193	94	42	< 25	< 6	East Sunny
<b>Jul-23 2nd FN</b>	17/07/23-18/07/23	01-08-2023	01/08/23-05/08/23	185	86	38	< 25	< 6	East Sunny
<b>Aug-23 3rd FN</b>	01/08/23-02/08/23	16-08-2023	16/08/23-22/08/23	140	72	33	< 25	< 6	East Rain
<b>Aug-23 4th FN</b>	16/08/23-17/08/23	01-09-2023	01/09/23-09/09/23	170	81	35	< 25	< 6	East Rain
<b>Sep-23 5th FN</b>	01/09/23-02/09/23	18-09-2023	18/09/23-20/09/23	147	76	40	< 25	< 6	East Cloud
<b>Sep-23 6th FN</b>	18/09/23-19/09/23	03-10-2023	03/10/23-11/10/23	215	108	53	< 25	< 6	East Cloud

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>09/23 Test Report No. 2201</b>	<b>Job No. 094323120</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample	Ambient Air	Quarter Ending	Sep-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP **Stations:** Ashok Vihar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_x$ )	
<b>Jul-23 1st FN</b>	03/07/23-04/07/23	17-07-2023	17/07/23-24/07/23	135	48	22	< 25	< 6	East Sunny
<b>Jul-23 2nd FN</b>	17/07/23-18/07/23	01-08-2023	01/08/23-05/08/23	173	62	33	< 25	< 6	East Sunny
<b>Aug-23 3rd FN</b>	01/08/23-02/08/23	16-08-2023	16/08/23-22/08/23	164	58	28	< 25	< 6	East Rain
<b>Aug-23 4th FN</b>	16/08/23-17/08/23	01-09-2023	01/09/23-09/09/23	155	70	38	< 25	< 6	East Rain
<b>Sep-23 5th FN</b>	01/09/23-02/09/23	18-09-2023	18/09/23-20/09/23	142	52	26	< 25	< 6	East Cloud
<b>Sep-23 6th FN</b>	18/09/23-19/09/23	03-10-2023	03/10/23-11/10/23	165	60	30	< 25	< 6	East Cloud

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>09/23 Test Report No. 2202</b>	<b>Job No. 094323120</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample	Ambient Air	Quarter Ending	Sep-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP **Stations:** Intake Well Pump

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_x$ )	
<b>Jul-23 1st FN</b>	03/07/23-04/07/23	17-07-2023	17/07/23-24/07/23	156	61	33	< 25	< 6	East Sunny
<b>Jul-23 2nd FN</b>	17/07/23-18/07/23	01-08-2023	01/08/23-05/08/23	174	76	43	< 25	< 6	East Sunny
<b>Aug-23 3rd FN</b>	01/08/23-02/08/23	16-08-2023	16/08/23-22/08/23	144	58	27	< 25	< 6	East Rain
<b>Aug-23 4th FN</b>	16/08/23-17/08/23	01-09-2023	01/09/23-09/09/23	132	52	22	< 25	< 6	East Rain
<b>Sep-23 5th FN</b>	01/09/23-02/09/23	18-09-2023	18/09/23-20/09/23	148	62	36	< 25	< 6	East Cloud
<b>Sep-23 6th FN</b>	18/09/23-19/09/23	03-10-2023	03/10/23-11/10/23	162	69	40	< 25	< 6	East Cloud

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>09/23 Test Report No. 2203</b>	<b>Job No. 094323120</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample	Ambient Air	Quarter Ending	Sep-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura      **Project:** Rohini OCP      **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				Total Particulate Matter ( $\text{PM}_{10}$ + $>\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_x$ )	
<b>Jul-23 1st FN</b>	03/07/23-04/07/23	17-07-2023	17/07/23-24/07/23	215	106	50	< 25	< 6	East Sunny
<b>Jul-23 2nd FN</b>	17/07/23-18/07/23	01-08-2023	01/08/23-05/08/23	208	98	48	< 25	< 6	East Sunny
<b>Aug-23 3rd FN</b>	01/08/23-02/08/23	16-08-2023	16/08/23-22/08/23	196	85	41	< 25	< 6	East Rain
<b>Aug-23 4th FN</b>	16/08/23-17/08/23	01-09-2023	01/09/23-09/09/23	185	80	37	< 25	< 6	East Rain
<b>Sep-23 5th FN</b>	01/09/23-02/09/23	18-09-2023	18/09/23-20/09/23	206	92	44	< 25	< 6	East Cloud
<b>Sep-23 6th FN</b>	18/09/23-19/09/23	03-10-2023	03/10/23-11/10/23	216	102	55	< 25	< 6	East Cloud

**Note:**

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

<b>09/23 Test Report No. 2204</b>	<b>Job No. 094323120</b>	<b>Year</b>	<b>FY2023-24</b>
Type of Sample:	Noise	Quarter Ending	Sep-23
Customer	CCL		
Testing/ Sampling Protocol:	'The noise pollution (Regulation and Control), Rules,2000, LQR 34		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP

Station Name	Noise Level dB(A) Leq					
	Jul-23 1st FN	Jul-23 2nd FN	Aug-23 3rd FN	Aug-23 4th FN	Sep-23 5th FN	Sep-23 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	03-07-2023	17-07-2023	01-08-2023	16-08-2023	01-09-2023	18-09-2023
<b>1. P.O.Office</b>	68.3/62.4	68.8/62.7	69.7/63.5	70.3/64.2	68.3/62.5	69.5/63.4
Date of recording	03-07-2023	17-07-2023	01-08-2023	16-08-2023	01-09-2023	18-09-2023
<b>2. Ashok Vihar Colony</b>	66.5/60.2	66.3/60.2	66.4/60.3	67.7/61.6	66.6/60.2	66.2/60.3

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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**TEST REPORT**

09/23 Test Report No. 2205	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Sep-23
Customer	CCL	Date of Receipt:	17-07-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.07.23-07.10.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

**TEST RESULT**

The sample has been tested with the following results: -

**Area :** North Karanpura **Project:** Rohini OCP  
**Stations:** 1. Damodar U/S of Kendua Conf. **Date of Sampling:** 08-07-2023  
 2. Damodar D/S of Kendua Conf. **08-07-2023**

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl <sup>-</sup> ), mg/l	8	10			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.6	6.5			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F <sup>-</sup> ) mg/l	0.56	0.55			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	0.06			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO <sub>3</sub> <sup>-</sup> ), mg/l	0.67	0.64			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.4	8.3			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO <sub>4</sub> <sup>-2</sup> ) mg/l	22	22			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	192	205			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	14	18			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	0.005	0.007			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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