

Ref. No.: MCL/MLA/PO/SOCP/2024 -25/ 20

Date : 01/01/2025

To

The Deputy Director General of Forests,

MOEF, Integrated Regional Office,

A/3, Chandrasekharpur Bhubaneswar – 751023

Sub. Submission of Half Yearly Compliance Report of the Environmental Clearance conditions in respect to Siarmal OCP, Mahalaxmi Area, MCL for the period from April 2024 to September 2024.

Respected Sir,

The undersigned is hereby submitting the Half-yearly compliance report (April 2024 to September 2024) in respect of Siarmal OCP, Mahalaxmi Area of M/s Mahanadi Coalfields Limited for your kind perusal and record.

Enclosure: As above.

Yours faithfully


01/01/2025

Project Officer,
Siarmal OCP,

Mahalaxmi Area, MCL





Copy to:

1. Director E.I.A Monitoring Cell, MoEF, Paryvaran Bhawan, CGO Complex, New Delhi – 10003 (By REGD, POST) – For kind information and necessary action.
2. General Manager (Envt.), MCL, HQ-For kind information through mail.
3. General Manager, Mahalaxmi Area – For kind information.
4. Office copy.

**SIX MONTHLY COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS
OF SIARMAL OPENCAST COAL MINING PROJECT OF MAHANADI COALFIELDS LIMITED
LOCATED IN DIST. SUNDARGARH (ODISHA)**

MoEF&CC FILE NO. J-11015/230/2014-IA-II(M) &
EC Identification NO. EC22A001OR155567 Dated 06.05.2022

(Period: April 2024 to September 2024)

S. No.	Specific EC Conditions	Compliance Status
i.	PP shall submit stage-I forest Clearance of 349.709 ha prior to grant of Environment Clearance.	MoEF&CC has accorded the Stage – I Forest Clearance in favour of Siarmal OCP, Mahalaxmi Area, MCL vide F. No. 8-25/2021-FC dated 21 st April 2022.
ii.	PP shall obtain CTO for 40 MTPA (Normative) / 50 MTPA (Peak) from State Pollution Control Board prior of commencement of mining operations.	SPCB has accorded the renewal of CTO in favour of Siarmal OCP, Mahalaxmi Area, MCL vide Consent Order No. 3038 vide letter No. 20864/IND-I-CON-6863 dated 18.12.2024 for production of 20 MTPA of Coal during for the FY 2024-2025.
iii.	PP shall implement in-pit conveyor system with silo loading facility till railway siding within 2 years (March-2024) and No road transportation shall be allowed beyond this time accordingly. SPCB shall not grant CTO for road transportation.	The engineering work of in-pit conveyor system is in progress. Conceptual Design Report has been prepared by consultant in the meantime. No coal transportation is being done through public road. Coal transportation from Siarmal OCP is being done through Sardega railway siding by dedicated Coal corridor of 5 km which is passing through the backfilled area of existing quarry of Basundhara (W) OCP.
iv.	No diversion shall be allowed for chattanjhor and Telendra stream and SPCB while granting the CTO under water Act, Shall ensure this Adequate protection measure on either side of stream bank shall be taken by PP with tree plantation. It should be ensured	No diversion will be done for Chattanjhor and Telendra stream. Adequate protection measure on either side of stream bank with tree plantation will be taken up. Status of implementation of action plan as per Basundhara River Management Plan for its protection is as follows

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	that no mine drainage except rain water shall join the stream. Action plan for its protection shall be submitted to IRO, MoEF&CC within 6 months.	<ol style="list-style-type: none"> 1. Construction of left and right bank embankment along the river as per River Management Plan: The work is currently in progress, with an expected completion date of 31.05.2025. 2. Providing Geo mattress on river-side slopes for slope protection along with the launching apron: The work is underway and is expected to be completed by 31.08.2025. 3. Providing dub grass turfing on country-side slopes for slope protection: The dub grass turfing work is in progress and is anticipated to be completed by 31.08.2025. 4. Providing bathing ghats on the banks of Basundhara River: The construction of bathing ghats on the banks of Basundhara River will be taken up whenever required once the above mentioned works are completed. 																		
v.	PP shall comply year wise Environment control measures lists submitted as per email dated 13th March, 2022 to Ministry i.e. For FY 2022-23 Rs. 2395.90 Lakhs, FY-2023-24 Rs. 1643.00 lakhs, FY 2024-26 - Rs. 758.00 Lakhs and FY 2025-26 Rs.480.40 Lakhs.	<p>The amount expensed on Environmental Control Measures that has been taken up during the FY 2024-2025 is given below.</p> <table border="1" data-bbox="866 1547 1513 2031"> <thead> <tr> <th data-bbox="866 1547 978 1648">S. No</th> <th data-bbox="978 1547 1321 1648">Measures</th> <th data-bbox="1321 1547 1513 1648">Amount in Rs.</th> </tr> </thead> <tbody> <tr> <td data-bbox="866 1648 978 1749">1</td> <td data-bbox="978 1648 1321 1749">Fixed type water sprinklers</td> <td data-bbox="1321 1648 1513 1749">6069875.97</td> </tr> <tr> <td data-bbox="866 1749 978 1805">2</td> <td data-bbox="978 1749 1321 1805">Fog Cannon 5 nos.</td> <td data-bbox="1321 1749 1513 1805">1354050.00</td> </tr> <tr> <td data-bbox="866 1805 978 1906">3</td> <td data-bbox="978 1805 1321 1906">Environmental monitoring</td> <td data-bbox="1321 1805 1513 1906">720000.00</td> </tr> <tr> <td data-bbox="866 1906 978 1973">4</td> <td data-bbox="978 1906 1321 1973">Water tankers</td> <td data-bbox="1321 1906 1513 1973">2345250.00</td> </tr> <tr> <td data-bbox="866 1973 978 2031">5</td> <td data-bbox="978 1973 1321 2031">Plantation at Pit office</td> <td data-bbox="1321 1973 1513 2031">150000.00</td> </tr> </tbody> </table>	S. No	Measures	Amount in Rs.	1	Fixed type water sprinklers	6069875.97	2	Fog Cannon 5 nos.	1354050.00	3	Environmental monitoring	720000.00	4	Water tankers	2345250.00	5	Plantation at Pit office	150000.00
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S. No.	Specific EC Conditions	Compliance Status	
		Total	10639175.97
vi.	PP shall limit the activities of mining in its mine lease area only. No OB Dumping and infrastructure activity should be proposed and dumped on forest land Accordingly revised Mine plan Should be Submitted (if required) and submitted to Ministry.	<p>The strategy for mining within Siarmal OCP has been prepared considering minimum damage to land & ecology, maximization of internal dumping & minimum transport of OB outside mine. The Mining plan has been prepared by CMPDI based on scientific and techno economic considerations with due regard to the safety aspects. No outside block & lease area has been proposed for mining, dumping & other associated activities.</p> <p>It is to be noted that the Forest land required for Siarmal OCP is 349.709 Ha out of the total mining lease area of 2290.449 Ha. Thus the forest land is about 15.26%. Out of the total 349.709 Ha of forest land, 264.699 Ha is required for quarry excavation, 66.528 Ha for Safety, embankment & infra and only 18.482 Ha of forest patches is involved for OB dumps which are located in the area in scattered manner and exclusion of which is unavoidable. In reply to the observation of Forest Advisory Committee (FAC) meeting, justification for locating OB dumps, embankment and other necessary infrastructure on forest land has been submitted to MoEF&CC through Principal Chief Conservator of Forest (PCCF) duly recommended by District Forest Officer (DFO), Sundargarh.</p> <p>The reply was duly accepted by FAC and accordingly, Stage-I clearance has been granted vide letter dated 21.04.2022.</p>	
vii.	PP shall provide about 120 ha of grazing near the proposed R & R site and 20 ha of water bodies to be created in the form of ponds.	Sarangijharia and Chhatenpali are the two R&R sites for Siarmal OCP. Provision of 10 Ha of grazing land has been provided.	

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		The project is in process of identifying more grazing land by 31.12.2024.												
viii.	PP shall comply with the recommendation of sub-committee's site visit report which is proposed in the case of EC of Basundhara West OCP.	Recommendation of sub-committee's site visit report which is proposed in the case of EC of Basundhara West OCP and the compliance is in progress and will be complied by 31.03.2025.												
ix.	PP to install 2 continuous ambient air quality monitoring stations at suitable locations in consultation of SPCB. The real time data so generated shall be uploaded on company website. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display. Data shall be linked to website of SPCB/CPCB. Monitoring station shall be installed within 1 year period and action taken report shall be submitted to IRO with photographs.	2 nos. of CAAQMS have already been installed, out of which one has been linked to OSPCB and linking of the other is in process.												
x.	PP shall make use of advanced computer simulation techniques for design and execution of blasting operation in the mine. PP shall make use of Electronic Delay-Detonators for optimal blasting in coal and OB rock to minimize the environmental impacts of blasting such as ground vibration, Fly rocks and excessive dust generation.	The permission for controlled blasting has been obtained and the same is herewith the report as Annexure 1 . Coal is being excavated by the means of eco-friendly surface miners.												
xi.	PP shall deploy at least 20% of overall fleet of dumpers/trucks as electrical or CNG/LNG based dumpers/trucks for transportation of coal/OB etc.	<p>EV trucks will be deployed at least 20% of present fleets for transportation of coal / OB by 31.03.2025. Electrical or CNG/LNG based vehicles deployed are as follows</p> <table border="1" data-bbox="831 1765 1465 2042"> <thead> <tr> <th data-bbox="831 1765 1082 1877">Vehicle Types</th> <th data-bbox="1082 1765 1257 1877">Nos.</th> <th data-bbox="1257 1765 1465 1877">Electrical or CNG/LNG</th> </tr> </thead> <tbody> <tr> <td data-bbox="831 1877 1082 1933">Tipper</td> <td data-bbox="1082 1877 1257 1933">64</td> <td data-bbox="1257 1877 1465 1933">HSD</td> </tr> <tr> <td data-bbox="831 1933 1082 1989">Excavators</td> <td data-bbox="1082 1933 1257 1989">3</td> <td data-bbox="1257 1933 1465 1989">Electrical</td> </tr> <tr> <td data-bbox="831 1989 1082 2042">Surface Miners</td> <td data-bbox="1082 1989 1257 2042">3</td> <td data-bbox="1257 1989 1465 2042">HSD</td> </tr> </tbody> </table>	Vehicle Types	Nos.	Electrical or CNG/LNG	Tipper	64	HSD	Excavators	3	Electrical	Surface Miners	3	HSD
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xii.	PP shall engage third party independent expert agency for monitoring/auditing of compliance of EC conditions every year.	Third party independent NABL Accredited expert agency has been hired for monitoring /auditing of compliance of EC conditions and audit report prepared.
xiii.	No village road shall be used for transportation of coal and no road transport route shall be adopted, which is passing through any sensitive location such as schools, Hospitals etc. PP shall take legal undertaking form its consumers accordingly.	No village road will be used for transportation of coal. The Transport route is not passing through any sensitive location such as School, Hospital etc.
xiv.	PP to develop public redressal system due to project activates through manual entry, whatsapp number or any other mean which is convenient to local people. The complaints so gathered shall be disposed of at GM project level on monthly basis.	A public redressal system has been set up by the project proponent and addressal of complaints are on the basis of manual entry. There have been no complaints since the start of the mines.
xv.	PP shall implement all listed activities which includes Fixed type sprinklers trolley mounted and mobile fog cannons of 40 mts throw, wind barrier at coal stockyard, Plantation etc with different timeline till December, 2023. Six monthly report should be supported with photograph to comply with this condition.	5 numbers of trolley mounted fog canons have already been procured and installed around the coal stock yard. Installation of 2 more fog canons will be completed by 31.01.2025. 168 Fixed sprinklers have been procured and installation is in progress along the haul road and around the coal stock yard.
xvi.	PP shall plant 150,000 no's of native trees with broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.	50000 numbers of native trees with broad leaves will be planted by 31.03.2025 along the transportation route through a third-party agency under direct supervision of MCL in consultation with District Forest Officer. Total 1,50,000 numbers of tree plantation will be completed within three years starting 31 st March, 2023.
xvii.	PP shall deploy only 40-50 tones covered trucks/dumper to reduce fleet size till Rapid	Higher capacity trucks/dumper of 100 tons have been deployed to reduce fleet size till Rapid

S. No.	Specific EC Conditions	Compliance Status
	loading system and conveyor belt system is commenced (i.e. till March, 2024).	loading system and conveyor belt system is commenced.
xviii.	PP shall engage dedicated agency for plantation in mine site by April, 2022 instead of depending on state Forest Department. PP may seek inputs and expertise from forest department.	Hiring of dedicated agency for plantation in mine site will be done by 31.12.2024. Plantation will be carried out by hired agency in consultation with State Forest Department.
xix.	The detail of the activity proposed community Development for peripheral Villages as proposed of Rs. 30.75 Lakh with time bound action plan to be provided to Ministry IRO.	The details of the activity for proposed Community Development for peripheral Villages as proposed for Rs. 30.75 Lakh with time bound action plan is under preparation and it will be submitted with next EC compliance report by 1 st May 2025.
xx.	An amount of Rs 984.89 lakh proposed for wildlife conservation plan should be submitted to the Govt. of Odisha, Forest & Environment Dept and the copy of receiving to be submitted to Ministry's IRO.	An amount of Rs 874.14 lakh as proposed for wildlife conservation plan has been submitted to the State Specific Account No. 1508253832796370 of Union Bank of India, IFSC Code UBIN0903710 on 09.06.2022 through RTGS Mode vide UTR No. SBIN222160788520.
xxi.	PP shall protect the pond/ water body present towards the south eastern boundary and make it for sustainable use for villages with consultation with gram panchayat. The cost occurring in this regard shall be borne by the company.	Action plan is under preparation and the same is being prepared in consultation with the Local Gram Panchayat Office. An amount of Rs. 4,06,000.00 has already been expended on the renovation of ponds at Naktideol village and Gopalpur village for making it sustainable. The cost of Rs. 4,06,000.00 has been borne by the company.
xxii.	PP shall prepare Basundhara River conservation plan with respect to its quality check, beautification, plantation along the boundary and construction of over bridge if required and converge with plan of state government prepared for river rejuvenation.	Status of implementation of action plan as per Basundhara River Management Plan for its protection is as follows 1. Construction of left and right bank embankment along the river as per River Management Plan: The work is

S. No.	Specific EC Conditions	Compliance Status
		<p>currently in progress, with an expected completion date of 31.03.2025.</p> <p>2. Providing Geo mattress on river-side slopes for slope protection along with the launching apron: The work is underway and is expected to be completed by 31.08.2025.</p> <p>3. Providing dub grass turfing on country-side slopes for slope protection: The dub grass turfing work is in progress and is anticipated to be completed by 31.08.2025.</p> <p>4. Providing bathing ghats on the banks of Basundhara River: The construction of bathing ghats on the banks of Basundhara River will be taken up whenever required once the above mentioned works are completed.</p>
xxiii.	PP shall implement Peripheral tree plantation along the mine lease area with miyawaki method of 50 mts width within 2 years through independent expert.	<p>Hiring of dedicated agency for plantation in mine site will be done by 31.12.2024.</p> <p>Peripheral tree plantation along the mine lease area with miyawaki method of 50 mts width will be carried out in phased manner by 31.03.2025.</p>
xxiv.	PP shall explore an action plan for implementation of sand segregation plant to extract sand and aggregate (since quantity of OB is higher) to reduce agricultural land degradation.	Study will be carried out for implementation of sand segregation plant to extract sand and aggregate to reduce agricultural land degradation, on the basis of study action plan will be prepared by 15.01.2025.
xxv.	PP also to provide drinking water facilities like installation of RO with proper water, supply pipe fittings to nearby rural areas and also to install hand pumps by seeking consent form panchayat of the villages located within the study area of 10km radius buffer zone	5 KL/day of drinking water is being provided to Naktideol village and Haldibahal village respectively from May 2023 onwards and at present, 28 KL/day is being provided. However, drinking water facilities like installation of RO with proper water supply of pipe fittings to

S. No.	Specific EC Conditions	Compliance Status
	within two years.	nearby rural areas will be completed by 31.12.2024.
xxvi.	PP to install solar lights within 1 year from the grant of this EC along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year.	4 nos. Solar light have been procured and installed in the mining area. Proposals for installation of solar lights along the coal transportation roads have already been initiated and it will be completed by 31.03.2025. Identification of appropriate rural area for installation of solar lights will be done in consultation with the local Gram Panchayat.
xxvii.	PP to provide sanitation facility like bio toilets to the villages located within the study areas within 1 year from the grant of this EC.	Sanitation facility like bio toilets to the villages located within the study areas will be provided at identified location by 31.12.2024.
xxviii.	PP shall construct new multispecialty (50 beds) hospital in the 10 km of the project area within 3 years for local people out of approved budget. This shall be done in consultation of DM of the district.	A new multispecialty (50 beds) hospital will be constructed at a village within 10 km radius of the project area in consultation of DM of the district.
xxix.	Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examinations 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 Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented. The prevention measure for burns, malaria and provision of anti-snake venom including all other	An Occupational Health Specialist will be appointed for Regular and Periodical medical examinations of the workers by 31.03.2025.

S. No.	Specific EC Conditions	Compliance Status
	paramedical safeguards may be ensured before initiating the mining activities.	
xxx.	Chattanjhor stream may disturb the catchment area of that water body so it was asked by PP not to disturb it and to protect it and check its quality regularly.	Chattanjhor stream will not be disturbed and will be protected. The water quality will be checked regularly. A strategic Framework for Conservation of Basundhara River from Coal Mining Hydrological regime viz Basundhara River and its rivulets has been undertaken in consultation with the Water Resource Department, Government of Odisha at the project cost. The same is being implemented at project cost 31.08.2025.
xxxii.	PP shall conduct need base assessment survey in study area in one year from the date of issue of EC and accordingly, Persons of nearby villages shall be given training on livelihood and skill development to make them employable.	Need based assessment survey process has been initiated and at present 651 people have been employed from the nearby villages after imparting requisite training. as applicable.
xxxiii.	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 biological clock of the villages is not being disturbed. However, orienting as well as masking away the floodlights from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours as per permissible standards are being practiced. Ambient Noise level monitoring is being carried out at 10 stations to assess the impact of noise pollution, if any.
xxxiii.	PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.	Farmers will be paid for agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.

S. No.	Specific EC Conditions	Compliance Status
xxxiv.	Hon'ble Supreme Court in an Writ Petition(s) Civil No 114/2014, Common Cause vs Union of India & Ors vide its judgment dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent" The implementation report of the above said Condition shall be sent to the Regional Office of the MoEF&CC.	Will be strictly adhered to.

S. No.	Standard EC Condition	Compliance Status
a.	Statutory compliance	
i.	Project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose the project.	MoEF&CC has accorded the FC Stage II clearance in favour of Siarmal OCP, Mahalaxmi Area, MCL vide F. No. 8-25/2021-FC dated 3 rd November 2022.
ii.	The project proponent shall obtain clearance from the National Board for Wildlife if applicable.	Not applicable
iii.	The project proponent shall prepare a Site-Specific Conservation Plan/Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of	Site Specific Conservation Plan and Wildlife Management Plan has been approved by the Office of the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden,

S. No.	Standard EC Condition	Compliance Status
	the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of Schedule-I species in the study area).	Odisha vide Order No. 3958/CWLW- FDWC-FD-0127-2021 dated 7 th May 2022.
iv.	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act. 1974 from the concerned State pollution control Board/Committee.	OSPCB has accorded the Consent to Establish vide letter no. 18096//IND-II-CTE-6764 dated 28/09/2022 for Coal production of 50 MTPA (Peak) over Mining leased area of 2290.449 Ha. OSPCB has accorded the renewal of Consent to Operate vide letter no. 3957/IND-I-CON-6863 dated 20/03/2024 for production of 12 MTPA Coal for the FY 2024-25.
v.	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	NOC for withdrawal of 2622 KL/day of Ground Water had been obtained from Central Ground Water Authority, Govt. of India NOC No. CGWA/NOC/MIN/ORIG/2020/9246 dated 09.12.2020 which was valid for 2 years. Mining activity has not been commenced during these two years. Application for extension of NOC for further period of another two years have been submitted vide letter No. MCL/MLA/SOCP/PO/2022-23/383 dated 13.02.2023. It is under process and will be obtained soon.
vi.	Soil/hazardous waste generated in the mines needs to addressed in accordance to the solid waste Management Rules,2016/Hazardous & Other Waste Management Rule, 2016.	The application for HW Authorization was submitted at OSPCB vide letter No. MCL/MLA/SOCP/2024-25/559(R) dated 05.09.2024 in accordance to the Hazardous & Other Waste Management Rule, 2016 to OSPCB.

S. No.	Standard EC Condition	Compliance Status
b	Air Quality, Monitoring and Preservation	
i.	<p>Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. 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. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals, such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six month.</p>	<p>2 nos. of CAAQMS have already been installed out of which one has been linked to OSPCB and linking of the other is in process.</p>
ii.	<p>The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25 September, 2000 and as amended from time to time by the Central Pollution Control Board Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/ SPCB.</p>	<p>NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to conduct the monitoring in the 4 core stations and 4 buffer zone stations, as per the directive of the CTO order.</p> <p>The Ambient Air Quality monitoring reports for the period from April 2024 to September 2024 is attached herewith as Annexure 2A.</p>
iii.	<p>Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors Effective control measures such as regular water/ mist sprinkling/Rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of</p>	<p>Transportation of coal is being carried out by covered trucks.</p> <p>The Mining operations is being commenced from the month of February 2023 and since then, 2 nos. of 28 KL water tankers and 11 nos. of 15 KL water tankers have been deployed at the mines to</p>

S. No.	Standard EC Condition	Compliance Status
	<p>PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points Fugitive dust emission from all sources shall be controlled regularly It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.</p>	<p>abate fugitive dust emission.</p> <p>7 nos. of trolley mounted fog canons have also been procured out of which 5 nos. are installed at the coal stock yard. NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to conduct the monitoring in the 4 core stations and 4 buffer zone stations, as per the directive of the CTO order.</p> <p>The Ambient Air Quality monitoring reports for the period from April 2024 to September 2024 is attached herewith as Annexure 2A.</p>
iv.	<p>The transportation of coal shall be carried out as per the provisions and rest envisaged in the approved Mining Plan or environment monitoring plan Transportation of the coal through the existing road passing through any village shall be avoided In case, it is proposed to construct a bypass road, it should be so constructed so that the impact of sound dust and accidents could be appropriately mitigated.</p>	<p>No village road is being used for transportation of coal.</p> <p>The transportation route does not pass through any sensitive location such as School, Hospital etc. and this is an exclusively separate road for the transportation of coal.</p>
v.	<p>Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.</p>	<p>It is being ensured that the vehicles entering the mining lease area are having valid PUC certificates. PUC certificates of some vehicles is attached here as Annexure 3.</p>
vi.	<p>Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt - conveyors shall be fully covered to avoid air</p>	<p>Will be complied once the said infrastructure is constructed.</p> <p>5 nos. of drills are equipped with water injection</p>

S. No.	Standard EC Condition	Compliance Status
	borne dust Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.	system to minimize dust generation at the source.
vii.	Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters Environmentally friendly sustainable technology should be implemented for mitigating such parameters.	Will be complied once the CHP is constructed.
C	Water Quality Monitoring and Preservation	
i.	The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25 September, 2000 and as amended from time to time by the Central Pollution Control Board.	<p>NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to carry out the Routine Environmental Parameters monitoring as per the directive of CTO Order.</p> <p>The construction of ETP for Workshop has been completed in the month of April 2024.</p> <p>The quality of effluent water being monitored thereafter from the month of April 2024 and the parameters within norms as per CTO order is granted by OSPCB.</p>
ii.	The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No J-20012/1/2006-IA II (M) dated 27 th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	Will be complied.
iii.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of	NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the

S. No.	Standard EC Condition	Compliance Status
	existing wells and constructing new piezometers during the mining operations The monitoring of ground water levels shall be carried out four times a year i e pre-monsoon, monsoon, post-monsoon and winter The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.	agency to carry out the Routine Environmental Parameters monitoring as per the directive of the CTO Order. The monitoring report of ground water quality and ground water level for the period from April 2024 to September 2024 is attached herewith as Annexure 2B & 2C respectively.
iv.	Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of going data shall be maintained and submitted to the Ministry of Environment Forest and Climate Change/Regional Office.	NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to carry out the Routine Environmental Parameters monitoring as per the directive of the CTO Order. The monitoring report of Surface water quality for the period from April 2024 to September 2024 is attached herewith as Annexure 2D .
v.	Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.	Ground water, excluding mine water, are not being used for mining operations. A RWHS provided at the mines pit office and the other RWHS will be constructed by 28 th February 2025.
vi.	Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so	4.3 km long garland drain have been constructed along the periphery of the excavation area so that the runoff will be properly channelized into Settling Ponds. A Settling Pond of capacity 24,000 CuM has been constructed. 5 nos. of check dams are being constructed to check the flow of water and impart proper sedimentation to the runoff.

S. No.	Standard EC Condition	Compliance Status
	constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field / habitation / water bodies.	
vii.	Adequate groundwater recharge measures shall be taken up for augmentation of ground water the project authorities shall meet water requirement of nearby villager(s) after due treatment conforming to the specific requirement (standards).	A RWHS is provided at the mines pit office and the other RWHS will be constructed by 28 th February 2025.. The design of the Rainwater Harvesting Structures will be as per the guidelines of CGWB. 28 KL of drinking water is being provided to Naktideol village, Haldibahal and other villages.
viii.	Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time-to-time Adequate ETP/STP needs to be provided.	The workshop has been provided with an ETP. The construction of ETP is completed and is in operative. The quality of the water stored in the tank is being confirm as per the standards prescribed. A STP having capacity of 100 KLD has been provided and is in operation.
ix.	The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz watering the mine area, roads,	4.3 km long garland drain have been constructed along the periphery of the excavation area so that the runoff will be properly channelized into

S. No.	Standard EC Condition	Compliance Status
	green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.	<p>Settling Ponds.</p> <p>A Settling Pond of capacity 24,000 CuM has been constructed.</p> <p>5 nos. of check dams are being constructed to check the flow of water and impart proper sedimentation to the runoff.</p> <p>The drains are being regularly desilted and maintained properly.</p>
x.	<p>The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations considering the presence of river/rivulet/pond/lake etc. shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.</p>	<p>Report of Surface runoff and other wastewater generation and management system has been prepared by M/s Pollution Control and Management System, Paragon City, Bhubaneswar- 752101. The recommendations of the study will be strictly implemented.</p> <p>A strategic Framework for Conservation of Basundhara River from Coal Mining Hydrological regime viz Basundhara River and its rivulets has been undertaken in consultation with the Water Resource Department, Government of Odisha at the project cost. The same is being implemented at project cost 31.08.2025.</p>
xi.	<p>The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/water resource department in the state government.</p>	<p>Status of implementation of action plan as per Basundhara River Management Plan for its protection is as follows</p> <ol style="list-style-type: none"> <li data-bbox="911 1715 1509 1966">1. Construction of left and right bank embankment along the river as per the River Management Plan: The work is currently in progress, with an expected completion date of 31.05.2025. <li data-bbox="911 2011 1509 2045">2. Providing Geo mattress on river-side

S. No.	Standard EC Condition	Compliance Status
		<p>slopes for slope protection along with the launching apron: The work is underway and is expected to be completed by 31.08.2025.</p> <p>3. Providing dub grass turfing on country-side slopes for slope protection: The dub grass turfing work is in progress and is anticipated to be completed by 31.08.2025.</p> <p>4. Providing bathing ghats on the banks of Basundhara River: The construction of bathing ghats on the banks of Basundhara River will be taken up whenever required once the above mentioned works are completed.</p>
d	Noise and Vibration monitoring and prevention	
i.	<p>Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations. Operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.</p>	<p>NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to carry out the Routine Environmental Parameters monitoring as per the directive of CTO Order.</p> <p>The Noise Level Measurement report for the period from April 2024 to September 2024 is attached herewith as Annexure 2E.</p> <p>Workers engaged in blasting and drilling operations, Operation of HEMM, etc are provided with personal protective equipment (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard.</p> <p>Adequate awareness program for workers is being conducted on periodical basis.</p>

S. No.	Standard EC Condition	Compliance Status
ii.	Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.	The permission for controlled blasting has been obtained and the same is attached herewith the report. Coal is being excavated by the means of eco-friendly surface miners.
iii.	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.	<p>NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to carry out the Routine Environmental Parameters monitoring as per the directive of CTO Order.</p> <p>The Noise Level Measurement report for the period from April 2024 to September 2024 is attached herewith as Annexure 2E.</p>
e	Mining Plan	
i.	Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.	Mining is being carried out as per Approved Mining Plan under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
ii.	Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).	All mining activities are being carried out as per Approved Mining Plan only. All relevant circulars issued by Directorate General Mines Safety (DGMS) are being followed.
iii.	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.	<ul style="list-style-type: none"> • MoEF&CC has accorded the FC Stage I clearance in favour of Siarmal OCP, Mahalaxmi Area, MCL vide F. No. 8-25/2021-FC dated 21st April 2022. • MoEF&CC has accorded the FC Stage II clearance in favour of Siarmal OCP, Mahalaxmi Area, MCL vide F. No. 8-

S. No.	Standard EC Condition	Compliance Status
		25/2021-FC dated 3 rd November 2023.
iv.	Efforts should be made to reduce energy and fuel consumption by conservation. Efficiency improvements and use of renewable energy.	To minimize energy consumption, LED lights inside the Lease area, Office building and other working places have been provided. In addition to this, solar lights will be set up along the coal transportation route from Mines to Sardega Railway siding.
f	Land Reclamation	
i.	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).	The Digital Survey Map in 1:50,000 scale and report of entire lease hold area/core zone using Satellite Remote Sensing survey will be submitted before 31 st March 2025 to MoEF&CC/Integrated Regional Office (IRO) for monitoring the land use pattern.
ii.	The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m. adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.	Will be followed.
iii.	The entire excavated area, backfilling, external OB dumping (including top soil) and	Will be followed

S. No.	Standard EC Condition	Compliance Status
	<p>afforestation plan shall be in conformity with the during mining "post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.</p>	
iv.	<p>Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification Issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time-to-time Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any. along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MOEF&CC. CPCB and SPCB.</p>	Will be followed
v.	<p>Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes Active OB dumps shall be stabilized with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine</p>	Topsoil dump has been created and the grassing is being done on the top soil dump. As there is no active OB dump at present.

S. No.	Standard EC Condition	Compliance Status
	<p>Closure Plan Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change, Regional Office.</p>	
vi.	<p>The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.</p>	<p>The project proponent is in the process of finalization of an alternate area for livestock grazing in consultation with the District Administration.</p> <p>Provision of 10 Ha of grazing land has been provided.</p> <p>The project is in process of identifying more grazing land by 31.12.2024.</p>
g	Green Belt	
i.	<p>The project proponents shall take all precautionary measures during mining for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.</p>	<p>Site Specific Conservation Plan and Wildlife Management Plan has been approved by the Office of the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden; Odisha vide Order No.3958/CWLW-FDWC-FD-0127-2021 dated 7th May 2022.</p>
ii.	<p>Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.</p>	<p>Following stipulation are being followed;</p> <ul style="list-style-type: none"> • Plantation of trees has been undertaken from monsoon 2023 in the colony/township, over top soil dumps, OB dumps, alongside of haul road and in other areas of the mines which shall not be utilized for mining activities. • Avenue plantation and plantation in nearby village areas are being done in consultation with the DFO.

S. No.	Standard EC Condition	Compliance Status
		<ul style="list-style-type: none"> Preliminary work has already been completed for plantation. <p>Also hiring of dedicated agency for plantation in the mine site will be done by 31.03.2025.</p>
h	Public hearing and Human health issues	
i.	Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.	90% of required illumination has been achieved. This data is in conformity with the DGMS standards.
ii.	The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.	The occupational health survey for initial medical examination was done of 795 nos. personnel engaged in the project till 30.09.2024.
iii.	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	In the FY 2024-25, 439 numbers of safety shoes, 239 numbers of helmets, 487 numbers of reflective jackets, 130 numbers of dust masks, 219 numbers of hand gloves and 22 numbers of goggles have been provided to the personnel working in the Core Zone. A vocational Training Center has been setup at Siarmal OCP to impart adequate training and information on safety and health aspects to personnel before employing them in the mines.

S. No.	Standard EC Condition	Compliance Status
iv.	Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.	The present status of the implementation of the action plan on the issues raised during the public hearing is attached herewith as Annexure 4 .
v.	The project proponent shall follow the mitigation measures provided in this Ministry's OM No Z-11013/57/2014-IA II (M) dated 29 October, 2014, titled "Impact of mining activities on habitations-issues related to the mining projects where in habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area.	The compliance status of the conditions stipulated in the Ministry's OM No Z-11013/5712014-1A 11 (M) dated 29 October, 2014 is being submitted at your good office.
i	Corporate Environment Responsibility	
i.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringement / deviation / violation of the environmental / forest / wild life norms / conditions. The Company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders stake holders.	<ul style="list-style-type: none"> • The company has a well laid down Environmental Policy duly approved by the Board of Directors. • The company has a defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holder.

S. No.	Standard EC Condition	Compliance Status
ii.	A separate Environment Cell both at the project and company head quarter level, With qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Environment Management Cell has been established in an Project as well as in area and also at Head Quarter level. One Nodal Officer (E&F) (E-4) level is heading the Area Environment Cell along with a Management Trainee (E-2) level and is reporting to the General Manager, Mahalaxmi area.
iii.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	<ul style="list-style-type: none"> • Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company has already been prepared and an Environment Management Cell has been established in Project as well as in area and also at head quarter level. <p>The year wise funds have been kept in a separate account and would not be diverted for any other purposes.</p>
iv.	Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	<ul style="list-style-type: none"> • Environmental Statement Report for the FY 2023-2024 has been submitted to OSPCB vide letter No. MCL/HO/E&F/2024/1881 dated 28.09.2024. • Third party environmental audit will be carried out in every three year and report will be submitted accordingly.
j	Miscellaneous	
i.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at dies cost by prominently advertising it at least in two local	MoEF & CC has accorded the FC Stage II clearance in favour of Siarmal OCP, Mahalaxmi Area, MCL vide F. No. 8-25/2021-FC dated 3 rd November 2022. After the accordance of FC Stage II, the

S. No.	Standard EC Condition	Compliance Status
	newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	environmental clearance was published in the Statesman, Bhubaneswar on 24/11/2022 and in Odia Newspaper, Prameya, Bhubaneswar on 24/11/2022.
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in use to display the same for 30 days from the date of receipt.	The copies of the environmental clearance have been submitted to the Collector, The Sub-Collector, General Manager (District Industries Centre), Regional Officer. (SPCB), the Tahsildar (Hemgir) & the Sarpanch of Gopalpur and Tumulia Gram Panchayat respectively vide letter No MCL/MLA/PO/2033-23/85 dated 11/05/2023.
iii.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Will be strictly complied with.
iv.	The project proponent shall monitor the criteria pollutants level namely, PM10, SO ₂ , NO _x (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	<p>NABL Accredited Agency, i.e. M/s Environmental Research and Services (India) Pvt. Ltd. Bhubaneswar, has been selected as the agency to carry out the Routine Environmental Parameters monitoring as per the directive of CTO Order.</p> <p>The Ambient Air Quality monitoring reports for the period from April 2024 to September 2024 is attached herewith as Annexure 2A.</p> <p>The CAAQMS data are displayed on the display board installed at mine premises.</p>
v.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental	The Six-monthly compliance report is being submitted periodically.

S. No.	Standard EC Condition	Compliance Status
	conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	
vi.	The project proponent shall follow the mitigation measures provided in this Ministry's OM No Z-11013/5712014-1A 11 (M) dated 29 October, 2014, 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.	The compliance status of the conditions stipulated in the Ministry's OM No Z-11013/5712014-1A 11 (M) dated 29 October, 2014 has been submitted at your good office and attached as Annexure 5 .
vii.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules 1986, as amended subsequently and put on the website of the company.	Environmental Statement Report for the FY 2023-2024 has been submitted to OSPCB vide letter No. MCL/HO/E&F/2024/1881 dated 28.09.2024.
viii.	The project authorities shall inform the Regional Office of the MOEFCC regarding commencement of mining operations.	Mining operation has been commenced from 14 th February, 2023.
ix.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	All the stipulations made by the State Pollution Control Board and the State Government is being strictly followed.
x.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	The project proponent is and will abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
xi.	No further expansion or modifications in the	No expansion or modifications in the lease will be

S. No.	Standard EC Condition	Compliance Status
	plant shall be carried out without prior approval of the Ministry of Environment. Forests and Climate Change.	carried out without prior approval of the Ministry of Environment. Forests and Climate Change.
xii.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment protection Act. 1986.	Duly noted.
xiii.	The Ministry may revoke or suspend the clearance, if implementation of any of the above condition is unsatisfactory.	Duly noted.
xiv.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Duly noted.
xv.	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 require data / information / monitoring reports.	Full cooperation is being extended to the Officer(s) of the Regional Office by furnishing the required data / information / monitoring reports whenever required.
xvi.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law	Duly noted.

S. No.	Standard EC Condition	Compliance Status
	relating to the subject matter of Law relating to the subject matter.	

W
01/01/2025

Project Officer

Siarmal OCP, Mahalaxmi Area, MCL

Sundar

Project Officer
Siarmal OCP

2025

FORM -I

MONITORING PROFORMA-I (DATA SHEET)

1	Project Type: River-Valley/Mining Industry/Thermal/Nuclear/Other (Specify)	Mining		
2	Name of the Project.	Siarmal OCP		
3	Clearance Letter(s) No. OM No. & Date.	J-11015/230/2014-IA-II(M) , dated 05.05.2022.		
4	Location: (a) District(s), State(s).	Sundargarh, Odisha		
5(a)	Address of concerned Project Chief Engineer (with pin code & Telephone/Telex/Fax No.).	General Manager (Mining), Project Officer, Address: O/o The Project Officer, Siarmal OCP, Mahalaxmi Area, MCL, Dist.- Sundargarh, Odisha - 770076 Email: po-siarmalp.mcl@coalindia.in Contact no: 8109899035		
(b)	Address of Executive Project Engineer/ Manager (with pin code Telephone/Telex/Fax No.)	Chittaranjan Pati, Manager, Address: O/o The Project Officer, Siarmal OCP, Mahalaxmi Area, MCL, Dist.- Sundargarh, Odisha – 770076. Email id: cpati@coalindia.in Mobile No.: 9438879833		
6	Salient features of the Project:			
(a)	Of the Project	Project with sanctioned capital outlay of Rs.3,756.36 Crores (Project Cost). The main purpose of this project is to meet the overall deficit of coal availability over demand of MCL.		
(b)	Environmental Management Plan	Submitted along with Form 2 for accordance of EC. EIA-EMP measures are being implemented in a phased manner.		
7	Breakup of the Project Area	<table border="1" style="width: 100%;"><tr><td style="width: 50%;">a.) ML Area</td><td style="width: 50%; text-align: right;">2290.45 Ha</td></tr></table>	a.) ML Area	2290.45 Ha
a.) ML Area	2290.45 Ha			

		Excavation Area	1546.32 Ha
		External OB dump	386.08 Ha
		Infrastructure	42.82 Ha
		Embankment	28.30 Ha
		Safety zone	18.59 Ha
		Roads	182.00 Ha
		b.) Out of ML Area	290.00
		Residential colony	56.00 Ha
		R&R colony	182.00 Ha
		Total Project Area	2580.45 Ha
(a)	Submergence Area (Forest land & Non-Forest Land)	Nil	
(b)	Others	Nil	
8	Break – up of Project affected population when enumeration of those losing houses/dwelling House only, agriculture land & land less laborer / artisans.	2427 (Provisional)	
9	Finance Details.		
(a)	Project cost as originally planned & subsequent Revised estimates and the years of price reference.	Project with sanctioned capital outlay of Rs.3756.36 Crores (Project Cost)	
(b)	Allocation made for Environmental Management Plans, with item – wise and Year-wise break – up.	<u>Particulars</u>	<u>Cost</u>
		Rehab & Resettlement	Rs 67804.13 lakh
		Dust suppression cost	Rs 597.39 lakh
		ETP & STP	Rs. 1105.22 lakh

		Garland and storm water drainage	Rs 1464.43 lakh															
		Compensatory afforestation cost	Rs. 2391.61 lakh															
		Arboriculture including avenue plantation	Rs 374.67 lakh															
		Rainwater harvesting	Rs. 30.75 lakh															
		Peripheral village community development	Rs. 30.75 lakh															
		Environment Data generation	Rs 27.06 lakh															
		Total	Rs. 73,826.01 lakh															
(c)	Benefit cost ratio / internal rate of return and the year of assessment.	FIRR: 24.38 at 100% production level, prepared in 2018.																
(d)	Whether (a) includes the cost of Environmental Management as shown in (b) Above.	Yes																
(e)	Actual expenditure incurred on the project So far.	Rs. 3,35,274.91 Lakhs																
(f)	Actual expenditure incurred on the Environmental Management Plan.	<table border="1"> <thead> <tr> <th>S. No</th> <th>Measures</th> <th>Amount in Rs.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Fixed type water sprinklers</td> <td>6069875.97</td> </tr> <tr> <td>2</td> <td>Fog Cannon 5 nos.</td> <td>1354050.00</td> </tr> <tr> <td>3</td> <td>Environmental monitoring</td> <td>720000.00</td> </tr> <tr> <td>4</td> <td>Water tankers</td> <td>2345250.00</td> </tr> </tbody> </table>		S. No	Measures	Amount in Rs.	1	Fixed type water sprinklers	6069875.97	2	Fog Cannon 5 nos.	1354050.00	3	Environmental monitoring	720000.00	4	Water tankers	2345250.00
S. No	Measures	Amount in Rs.																
1	Fixed type water sprinklers	6069875.97																
2	Fog Cannon 5 nos.	1354050.00																
3	Environmental monitoring	720000.00																
4	Water tankers	2345250.00																

		5	Plantation at Pit office	150000.00
		Total		10639175.97
10	Forest land requirements.			
(a)	The date & status of approval for a diversion of forest land for non-forestry purpose.	Forest land 349.709 ha. Stage-II approval obtained on dated. 03 November 2022		
(b)	The status of clear felling in forest and non-forest land	Tree felling done by OFDC, Odisha: Forest – 4223 trees & Non forest – 2064 trees		
(c)	Comments on the viability and sustainability of Compensation afforestation program in the light of actual field experience so far.	Compensatory afforestation cost deposited in CAMPA fund. After approval of the compensatory afforestation scheme by forest dept. Govt of Orissa.		
11	Status of construction.			
(a)	Date of commencement (Actual and/or planned)	29.09.2022		
(b)	Date of completion (Actual and/or planned)	20.03.2023		
12	Reason for the delay if project is yet to start	No delay		
13	Date of site visits			
(a)	The dated on which the project was monitored by the regional office on previous occasional if any.	N.A.		
(b)	Date of site visit for this monitoring	N.A.		
14	Details of correspondence with project Authorities for obtaining action plans information & status of compliance to safeguards	The Project Officer, Siarmal OCP, Mahalaxmi Area, MCL, Dist.- Sundargarh, Odisha – 770076. Email: mcl.mahalaxmi2019@gmail.com Contact no: 8109899035		

W 20
01/01/2025
Project Officer,

Project Officer
Siarmal OCP

Siarmal OCP, Mahalaxmi Area, MCL.

Siarmal OCP

icv

FORM – II

PROFORMA FOR PROVIDING FOR IMPLEMENTATION OF REHABILITATION

1	No. of village affected	6 (Siarmal, Gopalpur, Tumulia, Ratansara, Jhupruna and Kulda)		
2	Families affected	2427 (Provisional)		
3	Compensation package offered per families	As per R&R policy, 2006 of Odisha Government.		
State / Central Norms		As per State and CIL norms		
4	Budget estimate for rehabilitation			
(a)	Total outlay Amount	Rs. 74763.13 Lakhs (includes Land and R&R)		
(b)	paid /under	Rs. 275559.39 Lakhs		
5	Employment details			
(a)	Total employment to be provided	758 (Gopalpur-628 and Siarmal -130). In case of villages Tumulia, Jhupruna and Ratansara – list will be finalized as per order of the Supreme Court dated 03.11.2023.		
(b)	Employment given so far	Details as follows:		
		Name of the Village	Employment provided	Under consideration
		Siarmal	123	7
		Gopalpur	528	100
		Kulda	Provided, Part area is required for Siarmal OCP	
		Tumulia	As per order of Supreme Court on dated 03.11.2023. It to be finalized.	
		Jhupruna		
		Ratansara		
6	Rehabilitation & Resettlement details	Total PDF (Project displacement families)		
		Village	Total Nos. of PDF	

		Gopalpur	1031
		Siarmal	196
		Village – Tumulia, Jhupruna, Ratansara As per order of Supreme Court on dated 03.11.2023. It to be finalized.	
(a)	No. of families rehabilitated	Village Gopalpur – 353 (Sanctioned) PDF Village Siarmal - 157 (Sanctioned) PDF	
(b)	Name of the site	Siarmal OCP, Mahalaxmi Area, Tikilipara AT/P.O.- Basundhara	
7	Any other information	---	

12/11/2025
 Project Officer,
 Siarmal OCP,

Mahalaxmi Area, MCL

Sundar Patel

20/11

FORM –III

FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT / PLANTATION

UNDER FOREST CONSERVATION ACT-1980 & ENVIRONMENT PROTECTION ACT-1986

1 (a)	Name of the project	Siarmal OCP	
(b)	Environment / Forest clearance under NOC	J-11015/230/2014-IA-II(M), dated 05.05.2022, EC dtd. 05.05.2022	
2	Location, Block / Sub-Division / State	Hemgir, Sundargarh, Orissa	
3	Address for communication	Project officer, Siarmal OCP AT/PO: Mahalaxami-770076 Distt: Sundargarh (Orissa)	
4	Existing vegetation in the Area/ Region		
(a)	Species (Trees/Shrubs/Climber)	<i>Acacia nilotica (L.) Willd. ex Delile, Buchanania cochinchinensis (Lour.) M.R. Almeida, Chloroxylon swietenia DC, Alstonia scholaris (L.) R.Br etc.</i>	
(b)	Major prevalent species of each tree	<i>Acacia nilotica (L.) Willd. ex Delile, Buchanania cochinchinensis (Lour.) M.R. Almeida, Chloroxylon swietenia DC, Alstonia scholaris (L.) R.Br etc.</i>	
5	Land coverage by the project		
(a)	Total area under the project	2580.45Ha	
(b)	Area covered for basic infrastructure (Road/Building/Factory etc.)	a.) ML Area	2290.45Ha
		Excavation Area	1546.32Ha
		External OB dump	386.08Ha
		Infrastructure	42.82Ha
		Embankment	28.30Ha
		Safety zone	18.59Ha
		Roads	182.00Ha
		b.) Out of ML Area	2290 ha
		Residential colony	56.00Ha

		R&R colony	182.00Ha
		Total Project Area	2580.45Ha
6	Details about natural vegetation		
(a)	Name and number of tree/ species felled	Forest – 4223 & Non forest - 2064	
(b)	Name and number of plant species still available in the area	Total number of plant species is 53,458 and the plant species as given in EIA/EMP report still exist.	
(c)	By protecting the area will indigenous stock come up	Partially may come up.	
(d)	Extent of green belt development	Nil	
7	Plantation required to be carried out as per.		
(a)	Conditions of environmental Clearance in Ha./Nos.	Plantation to be carried out with 1,50,000 nos. of native trees with broad leaves along the transportation routes within Three Years.	
(b)	Conditions of Forest Conservation Act. Clearance in Ha./Nos.	Safety zone plantation.	

8. Details about plantation:

(a) Total area of plantation in each category. Siarmal OCP: 6100 nos.



(b) Plantation Details (Category wise and methodology used): Avenue plantation.


 01/01/2025
Project Officer,
Project Officer
Siarmal OCP,

Mahalaxmi Area, MCL





 <p>भारत सरकार Govt. of India भारत का रक्षण मंत्रालय Ministry of Labour & Employment सुरक्षा एवं रक्षण महाविद्यालय Directorate-General of Mines Safety</p> 	
<p>NO: 11165 SEZ Bhubaneswar Region 2 Perm 2023 257760</p>	<p>Bhubaneswar, Date:12.09.2023</p>

From

Director of Mines Safety
Bhubaneswar Region 2

To

Agent
Siarmal Opencast Mine
M/s Mahanadi Coalfields Ltd.
At-Siarmal, PO-Basundhara,
Distict-Sundargarh-770076 (Odisha)

Sub: Permission under Regulation 196(3) & (4) of the Coal Mines Regulations, 2017 to conduct deep hole blasting beyond 100 m and within 500 m from the Siarmal village & the diverted public road at Siarmal Opencast Project of M/s Mahanadi coalfields Limited.

Sir,

Please refer to your online application No.257760, dated 20.07.2023, Plans No. MCL/MLA/SOCP/SURVEY/24 dated 18.06.2023, No. MCL/MLA/SOCP/SURVEY/SUR/KP/01/21 dated 18.06.2023 and copy of scientific study report submitted in connection with the above mentioned subject.

The matter has since been examined on the basis of information and particulars furnished in your application and the plans submitted therewith. In exercise of the powers conferred on the Chief Inspector of Mines (also designated as Director- General of Mines Safety) under Regulation 196(3) of the Coal Mines Regulations, 2017, and by virtue of authorization granted to me by the Chief Inspector of Mines (also designated as Director General of Mines Safety) under Section 6(1) of the Mines Act, 1952, I grant the permission under Regulation 196(3) of Coal Mines Regulations, 2017 for conducting controlled deep hole blasting within 500m but beyond 100m from the dwellings/houses of Siarmal village & the diverted public road at Siarmal Opencast Project of M/s Mahanadi coalfields Limited, not belonging to the owner of the mine in an area bound by change points "CB01, CB02, CB03.....CB44, CB01" as shown in green colour bold lines on Plan No. MCL/MLA/SOCP/SURVEY/24 dated 18.06.2023, subject to the strict compliance of the following conditions:

1.0 The blasting shall be carried out in close collaboration with the engaged Scientific Agency and further monitoring shall be done on the effects of blasting in quarry and on surface including vibration level, air over pressure etc at least up to a distance of 100m, 150m, 300m and 500m all around from the place of blasting.

2.0 The peak particle velocity of blast-induced ground vibrations, at the boundary of the villages and surface features shall be measured with every blast, and it shall not exceed 10mm/sec. For the purpose, required instrument/seismograph/vibrograph, triggered by geo-phone and capable of giving digital output, shall be made & kept available at the mine.

3.0 No mining shall be done within horizontal distance of 15m from either side of any jore/nallah without obtaining permission from this Directorate and suitable embankment shall also be constructed and

4.0 The restricted zones of 100m, 300m & 500m from the nearest dwelling/structure, not belonging to owner, shall be clearly demarcated on the plans as well as on the ground by conducting actual surveys.

5.0 No blasting shall be done within 100 m from the dwellings houses of Siarmal village & the diverted public road at Siarmal Opencast Project of M/s Mahanadi coalfields Limited, as shown on Plan No. MCL/MLA/SOCP/SURVEY/24 dated 18.06.2023.

6.0 The Manager of the mine shall specify the size, depth, spacing, burden of hole, explosive charges and sequence of delays etc., on the basis of the recommendations of the report of blasting studies done by NIT Rourkela, vide their report dated May-2023 so as to minimize ground vibration and occurrence of any flying fragments to a dangerous extent beyond a distance of 10m.

7.0 Drilling, charging, stemming and blasting operations connected with this permission shall be placed under overall charge of a person holding First Class Manager's Certificate of Competency granted under the Coal Mines Regulations, 1957 or Coal Mines Regulations, 2017. He shall be assisted with adequate number of trained supervisors.

8.0 Notwithstanding anything contained in the Coal Mines Regulations, 2017, the preparation of charges and the charging and stemming of deep-holes shall be carried out by or under the personal supervision of a person possessing Manager's or Overman's Certificate trained in controlled blasting techniques, in this regulations referred to as a "shot-firer" who shall fire the shots himself.

9.0 Following Blast design parameters recommended in the Scientific study report May – 2023, dated: 29.05.2023, done by NIT, Rourkela shall be judiciously followed.

Distance form blasting face (m)	Hole Diameter (mm)	Hole depth (m)	Spacing and Burden (m)	MCPD(Kg) (for 5 mm/sec)	MCPD(Kg) (for 10 mm/sec)	MCPD(Kg) (for 15 mm/sec)
50	159	7	5m X 4m	11.27	26.43	43.50
75	159	7	5m X 4m	25.36	59.46	97.87
100	159	7	5m X 4m	45.09	105.71	173.99
125	159	7	5m X 4m	70.46	165.17	271.87
150	159	7	5m X 4m	101.46	237.84	391.49
175	159	7	5m X 4m	138.10	323.73	532.86
200	159	7	5m X 4m	180.37	422.83	695.98
225	159	7	5m X 4m	228.28	535.14	880.85
250	159	7	5m X 4m	281.83	660.67	1087.47
275	159	7	5m X 4m	341.01	799.40	1315.83
300	159	7	5m X 4m	405.83	951.36	1565.95
325	159	7	5m X 4m	476.29	1116.52	1837.82
350-500	159	7	5m X 4m	552.38	1294.90	2131.43

9.1 All other recommendations mentioned in the Scientific study report May – 2023, dated: 29.05.2023, done by NIT, Rourkela shall be strictly complied with.

10.0 It shall be ensured that ground vibrations are within permissible limits at foundation level of structures in mm/s as prescribed by DGMS (Tech) Circular No.7 of 1997 which is given below.

Type of structure	Dominant Excitation Frequency (Hz)		
	<8 Hz	8-25Hz	>25 Hz
(A) Building/structure not belonging to owner	mm/S	mm/S	mm/S
(i) Domestic houses/structures (Kuchha Brick in cement)	5	10	15

(iii) Object of historical importance and domestic structures	2	5	10
(B) Building belonging to owner with limited span of life			
(i) Domestic houses/structures (Kuchha Brick and cement)	10	15	25
(ii) Industrial building (RCC) and framed structures	15	25	50

11.0 A proper record of blasting parameters like spacing & burden of holes, hole depth, number of holes fired in the round, charge/hole, charge/delay, and charge/round, length of explosive column(s) & stemming column length(s), initiation pattern (with proper sketches wherever called for), manner of muffling, results of ground vibration observed (PPV, frequency & air over pressure) and distance up to which flying fragments projected due to blasting shall be maintained in a bound paged book kept for the purpose for each round of blast. The records shall be duly signed by the Blasting Officer and countersigned by the Manager of the mine.

12.0 Proper sequence of initiation system should be followed in order to restrict ground vibration, control of fly rock and better fragmentation. Delay interval between holes in a row shall be 17 or 25 milli second whereas between the rows it shall be 42 milli second and DTH delay shall be 250ms /450ms.

13.0 Blasting shall be done only during daylight hours. No blasting shall be done under overcast sky and after sun set.

14.0 Air overpressures during blasting shall not exceed the value as prescribed for structural damage.

15.0 (a) A Code of practice for blasting shall be framed by the Manager for the purpose, which shall strictly be followed.

(b) The manager shall fix the time of blasting and the same shall be circulated to all concerned, including to habitants of structures and dwellings, not belonging to M/s Mahanadi Coalfields Limited. The timings shall also be posted at conspicuous places.

16.0 (a) Before shots are charged stemming and fired, sufficient warning by siren or other suitable means shall be given to warn persons within a radius of 500 m, including to the habitants of structures and dwelling. The Code of blasting signals as framed by the mines manager shall be strictly followed. It shall be ensured that no person inadvertently enters or remain within the danger zone by posting adequate number of guards. No sleeping holes are permitted.

(b) It shall be ensured that no person remains in the dwellings/structures falling within a radial distance of 500m of the place of firing at the time of blasting, unless the dwelling/structure provides adequate/proper shelter from flying fragments resulting out of blasting. Guards shall be posted to ensure that no person inadvertently enters the danger zone, and to ensure that all persons within the danger zone have taken proper shelter. All precautions provided under Regulation 196 of the Coal Mines Regulations, 2017, regarding taking shelter, shall be complied with.

(c) No blasting in the mine shall be carried out within 500m of diverted public roads till such time the blasting incharge has ensured that no persons/vehicles passes on such roads during the time of blasting. For the purpose, drop bar barrier shall be provided on both side of such road at a distance of 500m from the place of firing of shots in the proposed limit of quarry and during blasting, guard shall be posted on the barrier and persons/vehicles shall not be allowed to pass on the said road during blasting and till the time all clear signal after blasting is obtained.

17.0 All the HEMM such as shovel, drill machine, Dumpers including cables switches etc. shall be shifted to safe places before commencement of charging and blasting operation. Blast holes shall not be allowed to sleep after charging.

17.1 (a) Charging of explosives shall be such as to ensure continuity of the explosive column. Where deck charging is done, continuity shall be ensured for each deck of explosive charge.

(b) The cartridges of explosives shall be lowered carefully into the shot holes so as to avoid sticking of

close contact with each other and there is no air gap between any two cartridges of explosives. In case, the length of uncharged portion of the hole is not as per the calculation, thereby indicating the presence of airspace, attempt may be made to push down the charge in case of slurry explosives only. Remaining hole shall then be stemmed with moist sand before blasting the shot-hole.

18.0 All mobile telephones and other VHF/UHF transmitters must be switched off in the blasting area at the time of handling, charging and blasting of explosives. Two-way communication by wireless or walkie-talkie sets shall be provided to the Assistant Manager incharge of blasting, shot-firers, and to the assistants of the shot-firer. The sets shall remain switched off during handling and charging of explosives.

19.0 Provisions of clause (b) & (c) of Regulation 196 (2) of the Coal Mines Regulation, 2017 shall be complied within 500m of the place of blasting.

20.0 Blasting with small diameter shot holes or secondary blasting shall not be done.

21.0 The management shall indemnify any person who may be affected and owner of any surface structure in case of damage or loss to any life or property arising out of aforesaid mining operation. Guards shall be posted on both sides of the public roads falling within danger zone to stop movement of vehicles and persons on the public roads during blasting hours.

22.0 No detonator or explosive shall be brought or kept within 15m of electrical conductors of overhead lines to prevent dangers due to induction.

23.0 Flying fragments due to blasting shall not be allowed to project beyond a distance of 10 m from the place of firing and it shall be ensured by observing following precautions:

- a. No shot hole shall be fired in crushed, broken or fractured ground/strata.
- b. The shot hole shall be stemmed with only moist sand and the length of stemming column shall not be less than 1.2 times the burden.
- c. Only such stemming material that is free from pebbles and stone chips shall be used. Moist sand shall be used for stemming of deep-holes.
- d. The area falling within a distance of 100cm from the collar of each blast hole shall be cleaned of loose stones, drill cuttings, debris and other loose material.
- e. Electronic/Nonel initiation system for site specific as recommended in scientific study report shall be used for detonation of explosives in the shot hole. Only SME explosives shall be used.
- f. Variation in inclination of shot-holes shall be within 5 degrees to avoid variation in crest and to burden.
- g. In case water is encountered in any shot-hole, the shot hole shall be dewatered by blowing compressed air into the hole before charging.
- h. Initiation of charge shall be done in a manner that detonation waves progress away from structures not belonging to the Owner.
- i. Blasting shall be conducted with muffling arrangement. Muffling shall be done in such a manner that blasting projectile shall not be able to project beyond a distance of 10 m from the site of blasting. Muffling of holes shall be done with wire netting pieces of size 1.8 m X 1.2 m overlain by 3 to 4 sand bags each of 40 kg by weight over each such hole.

24.0 Except where otherwise provided for in this exemption, all provisions of the Coal Mines Regulations, 2017, relating to opencast workings, use of explosives and machineries, etc., and shall be strictly complied with

the above permission/relaxation. Intimation of completion of the mining operations shall also be intimated promptly and in any case not later than one month thereof.

25.0 In addition to the above, your special attention is drawn towards the following:

25.1 The conditions for deep-hole blasting in opencast coal mine specified under the Gazette Notification No. G.S.R. 985(E) dated 1st October 2018 shall be complied with.

25.2 The conditions for conducting blasting in fire areas in an opencast coal mine specified under the Gazette Notification No. G.S.R. 986(E) dated 1st October 2018 shall also be complied with.

25.3 The conditions for transport of explosives in bulk in a coal mine specified under the Gazette Notification No. G.S.R. 982(E) dated 1st October 2018 shall also be complied with.

25.4 The precautions laid down against dangers due to flying projectiles in DGMS (SOMA)/(Tech) Circular No. 2 of 2003, Circular Tech.15/1977 and 8/1982 shall also be complied with during blasting operations.

25.5 The precautions laid down against premature blast of SME/SMS explosive in DGMS (Tech) Circular No. 14 of 2020 shall also be complied with during blasting operations.

22.6 In case, with any of the deep-hole rounds fired, the peak particle velocity of ground vibrations resulting out of blasting is observed to be more than 10 mm/s at the boundary of the village or the flying fragments project to a distance beyond 10m from the place of firing, blasting operations shall be discontinued and this Directorate shall be informed immediately. The blasting operations connected with this permission shall not be resumed unless express permission in writing is accorded by this Directorate afresh.

22.7 In case of misfires, precautions as laid down under regulation 204 of the Coal Mines Regulations, 2017 shall be observed.

26.0 Please note that this permission is subject to the following additional conditions:

26.1 In the event of any change in the circumstances, likely to affect the safety of persons or damage to structures/dwellings not belonging to M/s MCL, the operation for which this permission has been granted shall be stopped forthwith and intimation thereof sent to this Directorate.

26.2 If any of the conditions subject to which this permission has been granted is violated or not complied with, this permission shall be deemed to have been revoked with immediate effect.

26.3 The above permission may be amended or withdrawn at any time, if considered necessary in the interest of safety.

26.4 This permission is being issued specifically under the Regulations mentioned above, without prejudice to any other provisions of law, which may be or may become applicable, at any time.

26.5 This permission shall remain valid for a period of **three (03) years** from the date of issue of this letter.

NO: 11165|SEZ|Bhubaneswar Region 2|Perm|2023|257760

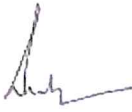
Bhubaneswar, Date:12.09.2023

Copy forwarded for information & necessary action to —

1. The Manager, Siarmal Opencast Mine, M/s Mahanadi Coalfields Limited, At-Siarmal, P.O. Basundhara, Dist-sundargarh, PIN-770076 (Odisha)

2. The General Manager, Mahalaxmi Area, M/s Mahanadi Coalfields Limited, P.O. Basundhara-770076, Dist: Sundargarh.

3. The Director, Technical (P&P)/Nominated owner, M/s Mahanadi Coalfields Limited, P.O. Burla, PIN-768020, Dist: Sambalpur (Odisha).



PRAFUL RANJAN THAKUR (DIRECTOR - BHUBANESHWAR REGION 2)

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Environmental Research and Services (India) Pvt. Ltd.

(An ISO/IEC 17025 : 2017 (NABL) Accredited Laboratory)

Plot No: B-22, Sector-B, Industrial Estate Chandaka, Infocity Road, Bhubaneswar-751024, Odisha
Tel: +91-9437021932, +91-9937690329, E-mail: ersibbsr@gmail.com



ULR-TC74402400000246F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 May 2024

Test Report No: ERSIPL/TR/AA/099

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 08-09.04.2024

Sample Received on : 11.04.2024

Analysis Started on : 11.04.2024

Analysis Completed on : 20.04.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Overcast

Atmospheric Temperature (Min/Max) : 21.0/26.0 °C

Atmospheric Pressure (Min/Max) : 1011/1015 mbar

Sample ID. No. : Locations (Core Zone)

- ERSIPL/AA/293
- ERSIPL/AA/294
- ERSIPL/AA/295

- East of Working Face-Pit Office
- West of Working Face-DBL Camp
- North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/293	ERSIPL/AA/294	ERSIPL/AA/295
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	279.46	293.98	301.30
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	133.73	130.86	139.95
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.33	8.44	9.60
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	14.16	13.69	12.22

- Note-
- The test results relate only to the items sampled and tested.
 - Total Liability of ERS (I) Pvt. Ltd. is limited to the Invoice Amount.
 - This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pvt. Ltd.
 - Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseous/liquid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.



Environmental Research and Services (India) Pvt. Ltd.

(An ISO/IEC 17025 : 2017 (NABL) Accredited Laboratory)

Plot No: B-22, Sector-B, Industrial Estate Chandaka, Infocity Road, Bhubaneswar-751024, Odisha
Tel: +91-9437021932, +91-9937690329 , E-mail: ersibbsr@gmail.com



ULR-TC744024000000247F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 May 2024

Test Report No: ERSIPL/TR/AA/100

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 08-09.04.2024

Sample Received on : 11.04.2024

Analysis Started on : 11.04.2024

Analysis Completed on : 20.04.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Overcast

Atmospheric Temperature (Min/Max) : 21.0/26.0 °C

Atmospheric Pressure (Min/Max) : 1011/1015 mbar

Sample ID. No.

1. ERSIPL/AA/296

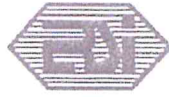
Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 296
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	210.62
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	71.93
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	34.96
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.24
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	11.81

- Note-
1. The test results relate only to the items sampled and tested.
 2. Total Liability of ERS (I) Pvt. Ltd. is limited to the Invoice Amount.
 3. This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pvt. Ltd.



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Plot No: B-22, Sector-B, Industrial Estate Chandaka, Infocity Road, Bhubaneswar-751024, Odisha
Tel: +91-9437021932, +91-9937690329, E-mail: ersibbsr@gmail.com



ULR-TC744024000000248F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 May 2024

Test Report No: ERSIPL/TR/AA/101

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 09-10.04.2024
Sample Received on : 11.04.2024
Analysis Started on : 11.04.2024
Analysis Completed on : 20.04.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Overcast
Atmospheric Temperature (Min/Max) : 23.0/32.0 °C
Atmospheric Pressure (Min/Max) : 1011/1015 mbar

Sample ID. No.

1. ERSIPL/AA/297
2. ERSIPL/AA/298
3. ERSIPL/AA/299
4. ERSIPL/AA/300

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/297	ERSIPL/AA/298	ERSIPL/AA/299	ERSIPL/AA/300
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)-1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	204.16	206.95	195.29	202.26
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	75.82	74.27	70.20	71.54
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	31.12	30.89	31.23	32.32
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.77	7.72	7.93	8.26
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed - 2022	µg/m ³	80.0	12.54	12.72	11.67	13.18

- Note-
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TC-7440

ULR-TC74402400000249F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 May 2024
Test Report No: ERSIPL/TR/AA/102
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 23-24.04.2024
Sample Received on : 27.04.2024
Analysis Started on : 27.04.2024
Analysis Completed on : 02.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 27.0/39.0 °C
Atmospheric Pressure (Min/Max) : 1003/1009 mbar

Sample ID. No.

1. ERSIPL/AA/332
2. ERSIPL/AA/333
3. ERSIPL/AA/334

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/332	ERSIPL/AA/333	ERSIPL/AA/334
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	305.91	292.20	299.91
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	137.89	142.43	139.47
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.33	8.98	7.29
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	12.38	11.41	13.64

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ULR-TC744024000000250F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 May 2024
Test Report No: ERSIPL/TR/AA/103
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 23-24.04.2024
Sample Received on : 27.04.2024
Analysis Started on : 27.04.2024
Analysis Completed on : 02.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 27.0/39.0 °C
Atmospheric Pressure (Min/Max) : 1003/1009 mbar

Sample ID. No.

1. ERSIPL/AA/335

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 335
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	202.41
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	74.50
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	31.57
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.15
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	11.37

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ULR-TC744024000000251F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 May 2024
Test Report No: ERSIPL/TR/AA/104
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 24-25.04.2024
Sample Received on : 27.04.2024
Analysis Started on : 27.04.2024
Analysis Completed on : 02.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 26.0/43.0 °C
Atmospheric Pressure (Min/Max) : 1002/1008 mbar

Sample ID. No.

1. ERSIPL/AA/336
2. ERSIPL/AA/337
3. ERSIPL/AA/338
4. ERSIPL/AA/339

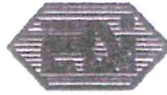
Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/ AA/ 336	ERSIPL/ AA/ 337	ERSIPL/ AA/ 338	ERSIPL/ AA/ 339
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	210.12	211.47	216.86	200.71
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	73.60	74.38	76.48	72.68
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	33.87	32.66	32.48	31.81
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.73	8.76	9.52	7.45
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	13.41	14.89	11.94	12.82

Note- 1. The test results relate only to the items sampled and tested.



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ULR-TC744024000000283F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024

Test Report No: ERSIPL/TR/AA/115

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 08-09.05.2024

Sample Received on : 14.05.2024

Analysis Started on : 14.05.2024

Analysis Completed on : 21.05.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Sunny

Atmospheric Temperature (Min/Max) : 25.0/38.0 °C

Atmospheric Pressure (Min/Max) : 1004/1008 mbar

Sample ID. No.

Locations (Core Zone)

1. ERSIPL/AA/376

1. East of Working Face-Pit Office

2. ERSIPL/AA/377

2. West of Working Face-DBL Camp

3. ERSIPL/AA/378

3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/376	ERSIPL/AA/377	ERSIPL/AA/378
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	282.74	295.30	298.51
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	135.47	132.30	141.10
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.91	9.16	9.34
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	14.04	13.06	13.78

Note-

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TC-7440

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ULR-TC74402400000284F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024
Test Report No: ERSIPL/TR/AA/116
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 08-09.05.2024
Sample Received on : 14.05.2024
Analysis Started on : 14.05.2024
Analysis Completed on : 21.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 25.0/38.0 °C
Atmospheric Pressure (Min/Max) : 1004/1008 mbar

Sample ID. No.

1. ERSIPL/AA/379

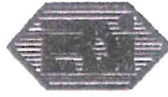
Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 379
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	206.99
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	72.16
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	33.89
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.72
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.10

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ULR-TC744024000000285F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 09-10.05.2024
Sample Received on : 14.05.2024
Analysis Started on : 14.05.2024
Analysis Completed on : 21.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny/Overcast
Atmospheric Temperature (Min/Max) : 24.0/40.0 °C
Atmospheric Pressure (Min/Max) : 1003/1011 mbar

Sample ID. No.

1. ERSIPL/AA/380
2. ERSIPL/AA/381
3. ERSIPL/AA/382
4. ERSIPL/AA/383

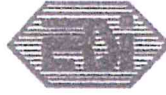
Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/380	ERSIPL/AA/381	ERSIPL/AA/382	ERSIPL/AA/383
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)-1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	XX	200.70	201.63	199.80	207.80
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	74.63	73.74	71.32	72.63
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	32.28	30.57	31.47	33.01
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.18	7.26	8.46	8.91
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed - 2022	µg/m ³	80.0	11.71	13.13	11.30	13.98

- Note-
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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024
Test Report No: ERSIPL/TR/AA/118
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 18-19.05.2024
Sample Received on : 21.05.2024
Analysis Started on : 21.05.2024
Analysis Completed on : 30.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Overcast
Atmospheric Temperature (Min/Max) : 26.0/38.0 °C
Atmospheric Pressure (Min/Max) : 1003/1008 mbar

Sample ID. No.

1. ERSIPL/AA/419
2. ERSIPL/AA/420
3. ERSIPL/AA/421

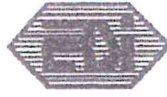
Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/419	ERSIPL/AA/420	ERSIPL/AA/421
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	307.04	299.34	304.46
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	139.22	141.09	140.04
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.52	9.55	7.86
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	12.93	12.94	13.36

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ULR-TC744024000000287F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024
Test Report No: ERSIPL/TR/AA/119
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 18-19.05.2024
Sample Received on : 21.05.2024
Analysis Started on : 21.05.2024
Analysis Completed on : 30.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Overcast
Atmospheric Temperature (Min/Max) : 26.0/38.0 °C
Atmospheric Pressure (Min/Max) : 1003/1008 mbar

Sample ID. No.

1. ERSIPL/AA/422

Locations (Core Zone)

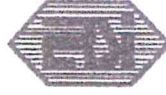
1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 422
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	199.40
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	73.31
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	30.81
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.82
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.96

Note-

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ULR-TC74402400000288F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024

Test Report No: ERSIPL/TR/AA/120

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer

Date of Sampling/Monitoring : 19-20.05.2024

Sample Received on : 21.05.2024

Analysis Started on : 21.05.2024

Analysis Completed on : 30.05.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Scattered Clouds

Atmospheric Temperature (Min/Max) : 26.0/39.0 °C

Atmospheric Pressure (Min/Max) : 999/1006 mbar

Sample ID. No.

1. ERSIPL/AA/423
2. ERSIPL/AA/424
3. ERSIPL/AA/425
4. ERSIPL/AA/426

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/423	ERSIPL/AA/424	ERSIPL/AA/425	ERSIPL/AA/426
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	208.67	200.17	209.20	206.44
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	75.49	72.47	72.94	73.64
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	32.10	32.51	33.06	31.46
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.92	8.52	7.70	8.32
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	11.32	12.88	11.02	12.58

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 July 2024

Test Report No: ERSIPL/TR/AA/151

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 13-14.06.2024
Sample Received on : 20.06.2024
Analysis Started on : 20.06.2024
Analysis Completed on : 29.06.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 29.0/42.0 °C
Atmospheric Pressure (Min/Max) : 996/1001 mbar

Sample ID. No.

1. ERSIPL/AA/460
2. ERSIPL/AA/461
3. ERSIPL/AA/462

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/460	ERSIPL/AA/461	ERSIPL/AA/462
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	281.62	290.58	219.37
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	129.19	127.67	139.02
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.26	9.14	8.63
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	13.14	12.18	13.27

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ULR-TC744024000000370F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 July 2024
Test Report No: ERSIPL/TR/AA/152
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 13-14.06.2024
Sample Received on : 20.06.2024
Analysis Started on : 20.06.2024
Analysis Completed on : 29.06.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 29.0/42.0 °C
Atmospheric Pressure (Min/Max) : 996/1001 mbar

Sample ID. No.

1. ERSIPL/AA/463

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 463
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	XX	207.89
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	71.93
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	32.76
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	9.09
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.67

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 July 2024
Test Report No: ERSIPL/TR/AA/153
 Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
 Sample Collected by : Representative of ERS (I) Pvt. Ltd.
 Sample Collected in presence of : Representative of Customer
 Date of Sampling/Monitoring : 14-15.06.2024
 Sample Received on : 20.06.2024
 Analysis Started on : 20.06.2024
 Analysis Completed on : 29.06.2024
 Method of Sampling : As per Applicable Test Method
 Quantity of Sample : 01 sample for each parameter
 Weather Condition : Scattered Clouds
 Atmospheric Temperature (Min/Max) : 29.0/41.0 °C
 Atmospheric Pressure (Min/Max) : 997/1003 mbar

Sample ID. No.

1. ERSIPL/AA/464
2. ERSIPL/AA/465
3. ERSIPL/AA/466
4. ERSIPL/AA/467

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/ AA/ 464	ERSIPL/ AA/ 465	ERSIPL/ AA/ 466	ERSIPL/ AA/ 467
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)-1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	201.70	196.60	198.83	203.97
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	75.27	72.02	70.71	73.46
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	31.33	29.98	30.97	31.91
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.77	7.15	8.69	8.28
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed - 2022	µg/m ³	80.0	11.38	12.41	12.01	13.49

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 July 2024
Test Report No: ERSIPL/TR/AA/154
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 24-25.06.2024
Sample Received on : 27.06.2024
Analysis Started on : 27.06.2024
Analysis Completed on : 02.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Scattered Clouds
Atmospheric Temperature (Min/Max) : 23.0/34.0 °C
Atmospheric Pressure (Min/Max) : 1007/1012 mbar

Sample ID. No.

1. ERSIPL/AA/503
2. ERSIPL/AA/504
3. ERSIPL/AA/505

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/503	ERSIPL/AA/504	ERSIPL/AA/505
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	296.21	299.75	301.46
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23); 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	134.13	138.12	135.94
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.12	9.21	8.17
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	12.77	13.89	14.20

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 July 2024
Test Report No: ERSIPL/TR/AA/155
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 24-25.06.2024
Sample Received on : 27.06.2024
Analysis Started on : 27.06.2024
Analysis Completed on : 02.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Scattered Clouds
Atmospheric Temperature (Min/Max) : 23.0/34.0 °C
Atmospheric Pressure (Min/Max) : 1007/1012 mbar

Sample ID. No.

1. ERSIPL/AA/506

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 506
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	201.27
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	75.26
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	30.13
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.35
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.98

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ULR-TC744024000000374F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 02 July 2024
Test Report No: ERSIPL/TR/AA/156
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 25-26.06.2024
Sample Received on : 27.06.2024
Analysis Started on : 27.06.2024
Analysis Completed on : 02.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Scattered Clouds
Atmospheric Temperature (Min/Max) : 22.0/36.0 °C
Atmospheric Pressure (Min/Max) : 1007/1012 mbar

Sample ID. No.

1. ERSIPL/AA/507
2. ERSIPL/AA/508
3. ERSIPL/AA/509
4. ERSIPL/AA/510

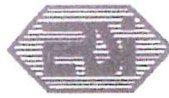
Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/ AA/ 507	ERSIPL/ AA/ 508	ERSIPL/ AA/ 509	ERSIPL/ AA/ 510
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	202.93	207.45	212.53	209.53
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	73.15	70.58	71.92	74.42
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	31.79	33.17	32.34	31.42
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.35	7.83	8.78	7.21
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.17	11.66	12.59	11.52

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/AA/171

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 11-12.07.2024
Sample Received on : 16.07.2024
Analysis Started on : 16.07.2024
Analysis Completed on : 26.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Sunny
Atmospheric Temperature (Min/Max) : 28.0/35.0 °C
Atmospheric Pressure (Min/Max) : 998/1003 mbar

Sample ID. No.

1. ERSIPL/AA/541
2. ERSIPL/AA/542
3. ERSIPL/AA/543

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/541	ERSIPL/AA/542	ERSIPL/AA/543
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	278.55	284.14	280.67
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	121.69	119.46	116.23
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	7.71	8.69	7.40
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	14.17	11.42	13.39

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/AA/172

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 11-12.07.2024

Sample Received on : 16.07.2024

Analysis Started on : 16.07.2024

Analysis Completed on : 26.07.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Sunny

Atmospheric Temperature (Min/Max) : 28.0/35.0 °C

Atmospheric Pressure (Min/Max) : 998/1003 mbar

Sample ID. No.

1. ERSIPL/AA/544

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 544
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	198.01
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	71.71
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	29.78
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	9.42
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.13

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 - Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseous/liquid samples received shall be



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ULR-TC74402400000416F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/AA/173

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 12-13.07.2024
Sample Received on : 16.07.2024
Analysis Started on : 16.07.2024
Analysis Completed on : 26.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Overcast
Atmospheric Temperature (Min/Max) : 26.0/32.0 °C
Atmospheric Pressure (Min/Max) : 998/1000 mbar

Sample ID. No.

1. ERSIPL/AA/545
2. ERSIPL/AA/546
3. ERSIPL/AA/547
4. ERSIPL/AA/548

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/545	ERSIPL/AA/546	ERSIPL/AA/547	ERSIPL/AA/548
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)-1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	205.01	196.16	189.67	208.83
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	75.69	70.50	69.51	74.85
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	31.86	30.37	32.09	31.92
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.30	7.80	8.33	8.58
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed - 2022	µg/m ³	80.0	11.80	13.49	12.25	14.45

- Note-
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ULR-TC744024000000417F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/AA/174

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 22-23.07.2024

Sample Received on : 25.07.2024

Analysis Started on : 25.07.2024

Analysis Completed on : 03.08.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Rainy

Atmospheric Temperature (Min/Max) : 26.0/29.0 °C

Atmospheric Pressure (Min/Max) : 996/999 mbar

Sample ID. No.

1. ERSIPL/AA/584

2. ERSIPL/AA/585

3. ERSIPL/AA/586

Locations (Core Zone)

1. East of Working Face-Pit Office

2. West of Working Face-DBL Camp

3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/584	ERSIPL/AA/585	ERSIPL/AA/586
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	165.36	163.30	171.38
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	94.45	91.22	97.45
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.13	7.38	8.62
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	13.43	11.90	11.75

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ULR-TC744024000000418F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/AA/175

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 22-23.07.2024

Sample Received on : 25.07.2024

Analysis Started on : 25.07.2024

Analysis Completed on : 03.08.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Rainy

Atmospheric Temperature (Min/Max) : 26.0/29.0 °C

Atmospheric Pressure (Min/Max) : 996/999 mbar

Sample ID. No.

1. ERSIPL/AA/587

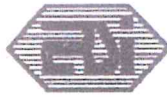
Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 587
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	119.59
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	56.80
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	30.65
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.34
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.40

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ULR-TC744024000000419F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/AA/176

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer

Date of Sampling/Monitoring : 23-24.07.2024

Sample Received on : 25.07.2024

Analysis Started on : 25.07.2024

Analysis Completed on : 03.08.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Rainy

Atmospheric Temperature (Min/Max) : 26.0/28.0 °C

Atmospheric Pressure (Min/Max) : 996/998 mbar

Sample ID. No.

1. ERSIPL/AA/588
2. ERSIPL/AA/589
3. ERSIPL/AA/590
4. ERSIPL/AA/591

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/ AA/ 588	ERSIPL/ AA/ 589	ERSIPL/ AA/ 590	ERSIPL/ AA/ 591
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	118.01	110.12	117.75	111.27
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	58.48	63.37	61.32	62.72
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	29.25	31.18	30.11	29.54
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.91	8.23	7.96	7.33
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	11.93	12.01	11.87	11.39

Note- 1. The test results relate only to the items sampled and tested.



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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Aug 2024
Test Report No: ERSIPL/TR/AA/194
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 13-14.08.2024
Sample Received on : 17.08.2024
Analysis Started on : 17.08.2024
Analysis Completed on : 28.08.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 26.0/32.0 °C
Atmospheric Pressure (Min/Max) : 1002/1006 mbar

Sample ID. No.

1. ERSIPL/AA/624
2. ERSIPL/AA/625
3. ERSIPL/AA/626

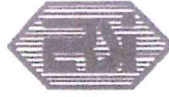
Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/624	ERSIPL/AA/625	ERSIPL/AA/626
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	226.57	224.43	220.05
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	104.22	109.94	107.88
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.47	7.77	8.27
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	11.68	11.79	10.37

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ULR-TC744024000000472F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Aug 2024

Test Report No: ERSIPL/TR/AA/195

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 13-14.08.2024

Sample Received on : 17.08.2024

Analysis Started on : 17.08.2024

Analysis Completed on : 28.08.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy

Atmospheric Temperature (Min/Max) : 26.0/32.0 °C

Atmospheric Pressure (Min/Max) : 1002/1006 mbar

Sample ID. No.

1. ERSIPL/AA/627

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 627
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	XX	152.73
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	67.78
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	26.45
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.55
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.12

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ULR-TC744024000000473F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Aug 2024

Test Report No: ERSIPL/TR/AA/196

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh-district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer

Date of Sampling/Monitoring : 14-15.08.2024

Sample Received on : 17.08.2024

Analysis Started on : 17.08.2024

Analysis Completed on : 28.08.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy/Rainy

Atmospheric Temperature (Min/Max) : 26.0/30.0 °C

Atmospheric Pressure (Min/Max) : 1003/1006 mbar

Sample ID. No.

1. ERSIPL/AA/628
2. ERSIPL/AA/629
3. ERSIPL/AA/630
4. ERSIPL/AA/631

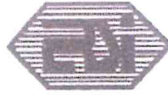
Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/628	ERSIPL/AA/629	ERSIPL/AA/630	ERSIPL/AA/631
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)-1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	146.80	153.95	157.87	149.63
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	69.83	70.50	68.61	67.91
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	28.01	26.83	27.16	26.54
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	6.79	7.43	7.87	8.15
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed - 2022	µg/m ³	80.0	11.06	10.89	11.46	11.94

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Aug 2024
Test Report No: ERSIPL/TR/AA/197
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 19-20.08.2024
Sample Received on : 23.08.2024
Analysis Started on : 23.08.2024
Analysis Completed on : 30.08.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 25.0/32.0 °C
Atmospheric Pressure (Min/Max) : 1002/1006 mbar

Sample ID. No.

1. ERSIPL/AA/642
2. ERSIPL/AA/643
3. ERSIPL/AA/644

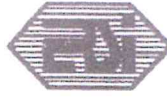
Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/642	ERSIPL/AA/643	ERSIPL/AA/644
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	160.99	163.09	168.66
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	96.47	98.46	104.94
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	7.86	8.04	7.38
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	10.16	11.27	10.40

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Aug 2024
Test Report No: ERSIPL/TR/AA/198
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 19-20.08.2024
Sample Received on : 23.08.2024
Analysis Started on : 23.08.2024
Analysis Completed on : 30.08.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 25.0/32.0 °C
Atmospheric Pressure (Min/Max) : 1002/1006 mbar

Sample ID. No.

1. ERSIPL/AA/645

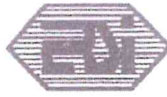
Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 645
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	121.22
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	64.05
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	26.39
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.43
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	12.43

- Note-
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ULR-TC744024000000476F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Aug 2024
Test Report No: ERSIPL/TR/AA/199
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 20-21.08.2024
Sample Received on : 23.08.2024
Analysis Started on : 23.08.2024
Analysis Completed on : 30.08.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 26.0/32.0 °C
Atmospheric Pressure (Min/Max) : 1003/1006 mbar

Sample ID. No.

1. ERSIPL/AA/646
2. ERSIPL/AA/647
3. ERSIPL/AA/648
4. ERSIPL/AA/649

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/646	ERSIPL/AA/647	ERSIPL/AA/648	ERSIPL/AA/649
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	116.59	122.83	120.59	119.33
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	66.43	65.59	67.25	69.54
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	28.67	27.61	26.89	28.40
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.30	7.66	7.32	7.05
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	10.65	11.07	10.80	11.82

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ULR-TC744024000000548F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/227

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 11-12.09.2024
Sample Received on : 18.09.2024
Analysis Started on : 18.09.2024
Analysis Completed on : 26.09.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 26.0/33.0 °C
Atmospheric Pressure (Min/Max) : 1001/1004 mbar

Sample ID. No.

1. ERSIPL/AA/703
2. ERSIPL/AA/704
3. ERSIPL/AA/705

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/703	ERSIPL/AA/704	ERSIPL/AA/705
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	161.33	154.59	166.94
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	91.38	87.24	95.42
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	7.14	8.15	7.92
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	11.26	12.21	11.40

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ULR-TC744024000000549F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/228

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 11-12.09.2024

Sample Received on : 18.09.2024

Analysis Started on : 18.09.2024

Analysis Completed on : 26.09.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy

Atmospheric Temperature (Min/Max) : 26.0/33.0 °C

Atmospheric Pressure (Min/Max) : 1001/1004 mbar

Sample ID. No.

1. ERSIPL/AA/706

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 706
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	103.66
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	55.52
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	27.18
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.52
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	10.86

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Ref. No.

Test Report Format No.: ERSIPL/FM/37

Date.....

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024**Test Report No: ERSIPL/TR/AA/T-227:228**

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 11-13.09.2024

Sample Received on : 18.09.2024

Analysis Started on : 18.09.2024

Analysis Completed on : 26.09.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy

Atmospheric Temperature (Min/Max) : 26.0/33.0 °C

Atmospheric Pressure (Min/Max) : 1001/1004 mbar

Sample ID. No.

1. ERSIPL/AA/703
2. ERSIPL/AA/704
3. ERSIPL/AA/705
4. ERSIPL/AA/706

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office
4. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sample ID. No Place of Monitoring	Result of Parameters Analyzed				
	Mercury (Hg) (in $\mu\text{g}/\text{m}^3$)	Arsenic (As) (in ng/m^3)	Nickel (Ni) (in ng/m^3)	Cadmium (Cd) (in $\mu\text{g}/\text{m}^3$)	Chromium (Cr) (in $\mu\text{g}/\text{m}^3$)
ERSIPL/AA/703	ND	ND	ND	ND	ND
ERSIPL/AA/704	ND	ND	ND	ND	ND
ERSIPL/AA/705	ND	ND	ND	ND	ND
ERSIPL/AA/706	ND	ND	ND	ND	ND
Permissible Limit as per CTO	No limit prescribed	6.0	20.0	No limit prescribed	

ND-Not Detected

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ULR-TC744024000000550F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/229

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 12-13.09.2024
Sample Received on : 18.09.2024
Analysis Started on : 18.09.2024
Analysis Completed on : 26.09.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 27.0/33.0 °C
Atmospheric Pressure (Min/Max) : 1002/1005 mbar

Sample ID. No.

1. ERSIPL/AA/707
2. ERSIPL/AA/708
3. ERSIPL/AA/709
4. ERSIPL/AA/710

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/707	ERSIPL/AA/708	ERSIPL/AA/709	ERSIPL/AA/710
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)-1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	105.56	111.39	101.26	108.63
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	53.06	59.78	54.86	56.16
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	25.58	27.73	28.42	25.24
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	6.70	7.47	7.64	8.30
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed - 2022	µg/m ³	80.0	10.33	11.38	12.52	11.61

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Test Report Format No.: ERSIPL/FM/37

Date.....

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/T-229

Name and Address of the Customer : Sjarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer

Date of Sampling/Monitoring : 12-13.09.2024

Sample Received on : 18.09.2024

Analysis Started on : 18.09.2024

Analysis Completed on : 26.09.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy

Atmospheric Temperature (Min/Max) : 27.0/33.0 °C

Atmospheric Pressure (Min/Max) : 1002/1005 mbar

Sample ID. No.

1. ERSIPL/AA/707
2. ERSIPL/AA/708
3. ERSIPL/AA/709
4. ERSIPL/AA/710

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sample ID. No Place of Monitoring	Result of Parameters Analyzed				
	Mercury (Hg) (in µg/m ³)	Arsenic (As) (ng/m ³)	Nickel (Ni) (ng/m ³)	Cadmium (Cd) (in µg/m ³)	Chromium (Cr) (in µg/m ³)
ERSIPL/AA/707	ND	ND	ND	ND	ND
ERSIPL/AA/708	ND	ND	ND	ND	ND
ERSIPL/AA/709	ND	ND	ND	ND	ND
ERSIPL/AA/710	ND	ND	ND	ND	ND
Permissible Limit as per CTO	No limit prescribed	6.0	20.0	No limit prescribed	

ND-Not Detected

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Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/230

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 19-20.09.2024

Sample Received on : 23.09.2024

Analysis Started on : 23.09.2024

Analysis Completed on : 30.09.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy

Atmospheric Temperature (Min/Max) : 26.0/33.0 °C

Atmospheric Pressure (Min/Max) : 1003/1007 mbar

Sample ID. No.

1. ERSIPL/AA/742

2. ERSIPL/AA/743

3. ERSIPL/AA/744

Locations (Core Zone)

1. East of Working Face-Pit Office

2. West of Working Face-DBL Camp

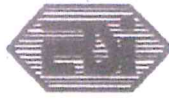
3. North-West of Working Face-CMPDI Office

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO	Results		
					ERSIPL/AA/742	ERSIPL/AA/743	ERSIPL/AA/744
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	196.36	189.05	201.87
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	250.0	106.34	102.26	109.07
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	7.79	8.79	8.82
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	11.00	12.95	11.23

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ULR-TC744024000000552F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/231

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer.
Date of Sampling/Monitoring : 19-20.09.2024
Sample Received on : 23.09.2024
Analysis Started on : 23.09.2024
Analysis Completed on : 30.09.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 26.0/33.0 °C
Atmospheric Pressure (Min/Max) : 1003/1007 mbar

Sample ID. No.

1. ERSIPL/AA/745

Locations (Core Zone)

1. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results
					ERSIPL/ AA/ 745
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	126.04
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	69.41
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	29.95
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	6.76
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	11.53

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Ref. No.

Test Report Format No.: ERSIPL/FM/37

Date.....

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/AA/T-230:231

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of Customer.

Date of Sampling/Monitoring : 19-20.09.2024

Sample Received on : 23.09.2024

Analysis Started on : 23.09.2024

Analysis Completed on : 30.09.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 01 sample for each parameter

Weather Condition : Cloudy

Atmospheric Temperature (Min/Max) : 26.0/33.0 °C

Atmospheric Pressure (Min/Max) : 1003/1007 mbar

Sample ID. No.

1. ERSIPL/AA/742
2. ERSIPL/AA/743
3. ERSIPL/AA/744
4. ERSIPL/AA/745

Locations (Core Zone)

1. East of Working Face-Pit Office
2. West of Working Face-DBL Camp
3. North-West of Working Face-CMPDI Office
4. South of Working Face-Village Haldibahal

TEST FINDINGS:

Sample ID. No Place of Monitoring	Result of Parameters Analyzed				
	Mercury (Hg) (in $\mu\text{g}/\text{m}^3$)	Arsenic (As) (ng/m^3)	Nickel (Ni) (ng/m^3)	Cadmium (Cd) (in $\mu\text{g}/\text{m}^3$)	Chromium (Cr) (in $\mu\text{g}/\text{m}^3$)
ERSIPL/AA/742	ND	ND	ND	ND	ND
ERSIPL/AA/743	ND	ND	ND	ND	ND
ERSIPL/AA/744	ND	ND	ND	ND	ND
ERSIPL/AA/745	ND	ND	ND	ND	ND
Permissible Limit as per CTO	No limit prescribed	6.0	20.0	No limit prescribed	

ND-Not Detected

- Note-
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 2. Total Liability of ERS (I) Pvt. Ltd. is limited to the Invoice Amount.
 3. This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pvt. Ltd.
 4. Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseous/liquid samples received shall be



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ULR-TC7440240000053F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 Sept 2024
Test Report No: ERSIPL/TR/AA/232
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of Customer
Date of Sampling/Monitoring : 20-21.09.2024
Sample Received on : 23.09.2024
Analysis Started on : 23.09.2024
Analysis Completed on : 30.09.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 01 sample for each parameter
Weather Condition : Cloudy
Atmospheric Temperature (Min/Max) : 27.0/35.0 °C
Atmospheric Pressure (Min/Max) : 1002/1006 mbar

Sample ID. No.

1. ERSIPL/AA/746
2. ERSIPL/AA/747
3. ERSIPL/AA/748
4. ERSIPL/AA/749

Locations (Buffer Zone)

1. Near Village Sumura
2. Near Village Tikilipara
3. Near Village Duduka
4. Near Village Kund

TEST FINDINGS:

Sl. No	Test Parameters	Test method	Unit	Permissible Limit as per NAAQ Standards CPCB Nov-2009	Results			
					ERSIPL/AA/746	ERSIPL/AA/747	ERSIPL/AA/748	ERSIPL/AA/749
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	xx	130.81	120.04	134.74	129.69
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	65.39	63.53	67.84	66.30
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5182 (Part 24): 2019, Gravimetric Method	µg/m ³	60.0	27.57	31.03	28.16	30.21
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.73	8.52	7.34	8.97
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	10.65	11.16	10.83	12.04

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ULR-TC744024000000252F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste-Water)

Pg No: 1 of 1

Date: 02 May 2024

Test Report No: ERSIPL/TR/WA/127

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha

Date of Sampling : 08.04.2024

Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer.

Sample Received on : 11.04.2024

Analysis Started on : 11.04.2024

Analysis Completed on : 20.04.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 2 ltrs

Type of Container : Glass Bottle, HDPE Bottle

Weather Condition : Overcast

Atmospheric Temperature : 24 °C

Sample ID. No.

1. ERSIPL/WA/271
2. ERSIPL/WA/272
3. ERSIPL/WA/273

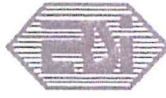
Locations

1. Tube well in Village Tumulia
2. Open well in Village Duduka
3. Borewell inside DBL Camp

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/271	ERSIPL/WA/272	ERSIPL/WA/273
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.79	7.52	6.83
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.45	0.39	0.36
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	190.0	122.0	124.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.10	0.20	0.17
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	75.88	29.57	31.54
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	462.8	334.2	271.5
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	48.10	32.87	24.05
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	31.87	34.25	10.007
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	174.0	120.0	154.0

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ULR-TC744024000000253F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 02 May 2024

Test Report No: ERSIPL/TR/WA/128

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 08.04.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 11.04.2024
Analysis Started on : 11.04.2024
Analysis Completed on : 20.04.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Overcast
Atmospheric Temperature : 24 °C

Sample ID. No.

1. ERSIPL/WA/274
2. ERSIPL/WA/275

Locations

1. Bore well in Village Tiklipara
2. Bore well in Village Kund

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result	
					ERSIPL/WA/274	ERSIPL/WA/275
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.95	7.17
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.29	0.43
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	96.0	172.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.16	0.08
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	21.68	53.22
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	198.2	423.5
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	20.04	34.47
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	9.48	21.12
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	114.0	168.0

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ULR-TC74402400000289F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste-Water)

Pg No: 1 of 1

Date: 30 May 2024

Test Report No: ERSIPL/TR/WA/145

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha
Date of Sampling : 09.05.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 14.05.2024
Analysis Started on : 14.05.2024
Analysis Completed on : 21.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Sunny
Atmospheric Temperature : 38 °C

Sample ID. No.

1. ERSIPL/WA/344
2. ERSIPL/WA/345
3. ERSIPL/WA/346

Locations

1. Tube well in Village Tumulia
2. Open well in Village Duduka
3. Borewell inside DBL Camp

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/344	ERSIPL/WA/345	ERSIPL/WA/346
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.81	7.59	6.91
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.41	0.37	0.33
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	186.0	126.0	122.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.09	0.17	0.12
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	70.96	31.54	30.55
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	458.7	331.9	274.5
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	46.49	34.47	23.25
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	30.37	32.76	10.37
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	170.0	124.0	152.0

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ULR-TC74402400000290F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 30 May 2024

Test Report No: ERSIPL/TR/WA/146

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 09.05.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 14.05.2024
Analysis Started on : 14.05.2024
Analysis Completed on : 21.05.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Sunny
Atmospheric Temperature : 38 °C

Sample ID. No.

1. ERSIPL/WA/347
2. ERSIPL/WA/348

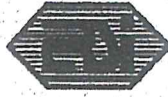
Locations

1. Bore well in Village Tiklipara
2. Bore well in Village Kund

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result	
					ERSIPL/WA/347	ERSIPL/WA/348
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.87	7.21
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.26	0.48
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	98.0	174.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.15	0.09
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	22.67	54.20
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	201.4	419.3
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	20.84	35.27
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	9.18	20.37
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	116.0	170.0

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ULR-TC744024000000375F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 02 July 2024

Test Report No: ERSIPL/TR/WA/188

Name and Address of the Customer

: Sirmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha

Date of Sampling

: 14.06.2024

Sample Collected by

: R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of

: Representative of the Customer.

Sample Received on

: 20.06.2024

Analysis Started on

: 20.06.2024

Analysis Completed on

: 29.06.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 2 ltrs

Type of Container

: Glass Bottle; HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 39 °C

Sample ID. No.

1. ERSIPL/WA/421
2. ERSIPL/WA/422
3. ERSIPL/WA/423

Locations

1. Tube well in Village Tumulia
2. Open well in Village Duduka
3. Borewell inside DBL Camp

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/421	ERSIPL/WA/422	ERSIPL/WA/423
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.86	7.54	6.95
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.39	0.36	0.31
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	182.0	130.0	118.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.08	0.14	0.11
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	68.99	34.49	29.57
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	455.6	329.8	276.1
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	45.69	35.27	22.44
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	29.18	31.87	10.07
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	166.0	128.0	148.0

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ULR-TC74402400000376F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ ~~Waste Water~~)

Pg No: 1 of 1

Date: 02 July 2024

Test Report No: ERSIPL/TR/WA/189

Name and Address of the Customer

: Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of Sampling

: 14.06.2024

Sample Collected by

: R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of

: Representative of the Customer.

Sample Received on

: 20.06.2024

Analysis Started on

: 20.06.2024

Analysis Completed on

: 29.06.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 2 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 39 °C

Sample ID. No.

1. ERSIPL/WA/424

2. ERSIPL/WA/425

Locations

1. Bore well in Village Tiklipara

2. Bore well in Village Kund

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result	
					ERSIPL/WA/424	ERSIPL/WA/425
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.88	7.26
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.29	0.51
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	94.0	170.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.13	0.10
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	21.68	53.22
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	203.7	414.2
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	20.04	34.47
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	8.58	49.48
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	112.0	166.0

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ULR-TC74402400000420F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste-Water)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/WA/211

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha
Date of Sampling : 12.07.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 16.07.2024
Analysis Started on : 16.07.2024
Analysis Completed on : 26.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Sunny
Atmospheric Temperature : 34 °C

Sample ID. No.

1. ERSIPL/WA/500
2. ERSIPL/WA/501
3. ERSIPL/WA/502

Locations

1. Tube well in Village Tumulia
2. Open well in Village Duduka
3. Borewell inside DBL Camp

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/500	ERSIPL/WA/501	ERSIPL/WA/502
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.91	7.49	6.86
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.47	0.31	0.37
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	190.0	134.0	112.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.09	0.13	0.10
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	72.93	36.46	27.59
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	446.2	324.6	269.8
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	45.69	36.87	20.84
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	28.28	33.66	11.42
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	174.0	132.0	144.0

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Tel: +91-9437021932, +91-9937690329, E-mail: ersibbsr@gmail.com

ULR-TC744024000000421F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ ~~Waste Water~~)

Pg No: 1 of 1

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/WA/212

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 12.07.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 16.07.2024
Analysis Started on : 16.07.2024
Analysis Completed on : 26.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Sunny
Atmospheric Temperature : 34 °C

Sample ID. No.

1. ERSIPL/WA/503
2. ERSIPL/WA/504

Locations

1. Bore well in Village Tiklipara
2. Bore well in Village Kund

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result	
					ERSIPL/WA/503	ERSIPL/WA/504
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.84	7.32
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.26	0.59
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	86.0	178.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.12	0.11
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	20.70	40.41
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	199.7	407.3
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	17.64	38.48
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	9.18	20.67
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	106.0	162.0

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ULR-TC744024000000477F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ ~~Waste Water~~)

Pg No: 1 of 1

Date: 30 Aug 2024

Test Report No: ERSIPL/TR/WA/239

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha

Date of Sampling : 13.08.2024

Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer.

Sample Received on : 17.08.2024

Analysis Started on : 17.08.2024

Analysis Completed on : 28.08.2024

Method of Sampling : As per Applicable Test Method

Quantity of Sample : 2 ltrs

Type of Container : Glass Bottle, HDPE Bottle

Weather Condition : Cloudy

Atmospheric Temperature : 32 °C

Sample ID. No.

1. ERSIPL/WA/564
2. ERSIPL/WA/565
3. ERSIPL/WA/566

Locations

1. Tube well in Village Tumulia
2. Open well in Village Duduka
3. Borewell inside DBL Camp

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/564	ERSIPL/WA/565	ERSIPL/WA/566
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.87	7.55	6.95
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.43	0.29	0.41
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	182.0	128.0	108.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.10	0.14	0.11
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	69.97	33.51	26.61
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	438.6	319.3	261.7
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	43.29	34.47	20.04
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	29.03	32.61	12.01
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	166.0	126.0	142.0

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ULR-TC744024000000478F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/~~Waste Water~~)

Pg No: 1 of 1

Date: 30 Aug 2024

Test Report No: ERSIPL/TR/WA/240

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 13.08.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 17.08.2024
Analysis Started on : 17.08.2024
Analysis Completed on : 28.08.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Cloudy
Atmospheric Temperature : 32 °C

Sample ID. No.

1. ERSIPL/WA/567
2. ERSIPL/WA/568
3. ERSIPL/WA/569

Locations

1. Bore well in Village Tiklipara
2. Bore well in Village Kund
3. Tap Water from/near Canteen

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/567	ERSIPL/WA/568	ERSIPL/WA/569
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.91	7.36	7.08
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.33	0.64	0.47
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	92.0	172.0	104.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.15	0.11	0.10
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	22.67	38.43	25.62
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	193.8	411.5	259.6
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	19.24	36.87	19.24
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	9.63	19.63	10.82
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	110.0	156.0	136.0

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ULR-TC744024000000554F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ ~~Waste Water~~)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/WA/278

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha
Date of Sampling : 11.09.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 18.09.2024
Analysis Started on : 18.09.2024
Analysis Completed on : 26.09.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Cloudy
Atmospheric Temperature : 30 °C

Sample ID. No.

1. ERSIPL/WA/636
2. ERSIPL/WA/637
3. ERSIPL/WA/638

Locations

1. Tube well in Village Tumulia
2. Open well in Village Duduka
3. Borewell inside DBL Camp

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result		
					ERSIPL/WA/636	ERSIPL/WA/637	ERSIPL/WA/638
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.87	7.52	6.91
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.17	0.26	0.59
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	184.0	130.0	116.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.10	0.15	0.09
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	69.97	34.49	30.55
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	439.6	321.9	273.5
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	44.09	36.07	21.64
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	29.63	32.31	10.67
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	168.0	128.0	150.0

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ULR-TC744024000000555F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/WA/279

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 11.09.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 18.09.2024
Analysis Started on : 18.09.2024
Analysis Completed on : 26.09.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : Glass Bottle, HDPE Bottle
Weather Condition : Cloudy
Atmospheric Temperature : 30 °C

Sample ID. No.

1. ERSIPL/WA/639
2. ERSIPL/WA/640

Locations

1. Bore well in Village Tiklipara
2. Bore well in Village Kund

TEST FINDINGS:

Sl	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result	
					ERSIPL/WA/639	ERSIPL/WA/640
01	pH Value	IS 3025:Part 11: 1983 Reaffirmed-2022	--	6.5 to 8.5	6.78	7.29
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.33	0.48
03	Total Hardness (as CaCO ₃)	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	92.0	170.0
04	Iron (as Fe)	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.14	0.10
05	Chloride (as Cl)	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	23.65	37.45
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	201.6	412.5
07	Calcium (as Ca)	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	19.24	36.07
08	Sulphate (as SO ₄)	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	8.58	21.87
09	Fluoride (as F)	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1
10	Alkalinity (as CaCO ₃)	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	112.0	156.0

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CIN - U73100OR1995PTC003889



GSTIN : 21AAACE6224D1ZE

Annexure 2C

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Ref. No.

Date.....


DEPTH OF GROUND WATER TABLE

Date: 30 May 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.
Date of Measurement : 09.05.2024
Measurement Taken by : Representative of ERS (I) Pvt. Ltd.
Measurement carried out in presence of: Representative of the Customer

Sl. No.	Location	Depth (Below Surface level in meter)
01	Open well in Village Tumulia	3.71
02	Open well in Village Duduka	3.53
03	Bore well in Village Tikilipara	23.24
04	Open well in Village Kund	7.34

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(Authorized Signatory)
S.P.Pattanayak
Tech. Manager

.....END OF TEST REPORT.....



CIN - U73100OR1995PTC003889



GSTIN : 21AAACE6224D1ZE

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Ref. No.

Date.....

DEPTH OF GROUND WATER TABLE

Date: 30 Aug 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.


Date of Measurement : 13.08.2024

Measurement Taken by : Representative of ERS (I) Pvt. Ltd.

Measurement carried out in presence of : Representative of the Customer

Sl. No.	Location	Depth (Below Surface level in meter)
01	Open well in Village Tumulia	2.92
02	Open well in Village Duduka	3.43
03	Bore well in Village Tikilipara	19.89
04	Open well in Village Kund	1.32

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(Authorized Signatory)
S.P. Pattanayak
Tech. Manager

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Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 02 May 2024
Test Report No: ERSIPL/TR/WA/T-129
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 08.04.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 11.04.2024
Analysis Started on : 11.04.2024
Analysis Completed on : 20.04.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : BOD Bottle, HDPE Bottle
Weather Condition : Overcast
Atmospheric Temperature : 24 °C

Sample ID. No.**Location**

- | | |
|------------------|-------------------------------------|
| 1. ERSIPL/WA/276 | 1. Basundhara Nala Water |
| 2. ERSIPL/WA/277 | 2. Pond water in village Godwar |
| 3. ERSIPL/WA/278 | 3. Pond water in village Gopalpur |
| 4. ERSIPL/WA/279 | 4. Pond water in village Haldibahal |

TEST FINDINGS:

S. No.	Test Parameters	Test Method	Unit	Result				Surface water quality standard as per IS :2296 (Class - B)*
				ERSIPL/WA/276	ERSIPL/WA/277	ERSIPL/WA/278	ERSIPL/WA/279	
1	Phenolic Compounds	IS 3025: Part 43:1992, Reaffirmed 2019	mg/L	ND	ND	ND	ND	0.005
2	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	0-5	0-5	0-5	0-5	300
3	Total Coliform	IS 1622:1981, Reaffirmed 2019	MPN/100 ml	12.0	14.0	12.0	14.0	500.0
4	Arsenic (as As)	IS 3025:Part 37: 2022	mg/L	ND	ND	ND	ND	0.2
5	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	ND	ND	ND	ND	0.05

ND-Not Detected, * Class - B - Water for outdoor bathing,

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CIN - U73100OR1995PTC003889



GSTIN : 21AAACE6224D1ZE

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Ref. No.

Date.....

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Date: 30 May 2024

Pg No: 1 of 1

Name and Address of the Customer

Test Report No: ERSIPL/TR/WA/T-147

: Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.

Date of Sampling

: 09.05.2024

Sample Collected by

: R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of

: Representative of the Customer.

Sample Received on

: 14.05.2024

Analysis Started on

: 14.05.2024

Analysis Completed on

: 21.05.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 2 ltrs

Type of Container

: BOD Bottle, HDPE Bottle

Weather Condition

: Sunny

Atmospheric Temperature

: 38 °C

Sample ID. No.

1. ERSIPL/WA/349
2. ERSIPL/WA/350
3. ERSIPL/WA/351
4. ERSIPL/WA/352

Location

1. Basundhara Nala Water
2. Pond water in village Godwar
3. Pond water in village Gopalpur
4. Pond water in village Haldibahal

TEST FINDINGS:

S. No.	Test Parameters	Test Method	Unit	Result				Surface water quality standard as per IS :2296 (Class - B)*
				ERSIPL/WA/349	ERSIPL/WA/350	ERSIPL/WA/351	ERSIPL/WA/352	
1	Phenolic Compounds	IS 3025: Part 43:1992, Reaffirmed 2019	mg/L	ND	ND	ND	ND	0.005
2	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	0-5	0-5	0-5	0-5	300
3	Total Coliform	IS 1622:1981, Reaffirmed 2019	MPN/100 ml	08.0	06.0	08.0	10.0	500.0
4	Arsenic (as As)	IS 3025:Part 37: 2022	mg/L	ND	ND	ND	ND	0.2
5	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	ND	ND	ND	ND	0.05

ND-Not Detected, * Class - B - Water for outdoor bathing,

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**Environmental Research and Services (India) Pvt. Ltd.**

(An ISO 9001 : 2015 Certified Company)

Plot No: B-22, Sector-B, Industrial Estate Chandaka, Infocity Road, Bhubaneswar-751024, Odisha
Tel: +91-9437021932, +91-9937690329 , E-mail: ersibbsr@gmail.com

Ref. No.

Date.....

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 02 July 2024

Test Report No: ERSIPL/TR/WA/T-190

Name and Address of the Customer

: Siarmal Open Cast Coal Mining, Project of M/s MCL,
Mahalaxmi Area in Sundargarh district, Odisha.

Date of Sampling

: 14.06.2024

Sample Collected by

: R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of

: Representative of the Customer.

Sample Received on

: 20.06.2024

Analysis Started on

: 20.06.2024

Analysis Completed on

: 29.06.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 2 ltrs

Type of Container

: BOD Bottle, HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 39 °C

Sample ID. No.

1. ERSIPL/WA/426
2. ERSIPL/WA/427
3. ERSIPL/WA/428
4. ERSIPL/WA/429

Location

1. Basundhara Nala Water
2. Pond water in village Godwar
3. Pond water in village Gopalpur
4. Pond water in village Haldibahal

TEST FINDINGS:

S. No.	Test Parameters	Test Method	Unit	Result				Surface water quality standard as per IS :2296 (Class-B)*
				ERSIPL/WA/426	ERSIPL/WA/427	ERSIPL/WA/428	ERSIPL/WA/429	
1	Phenolic Compounds	IS 3025: Part 43:1992, Reaffirmed 2019	mg/L	ND	ND	ND	ND	0.005
2	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5-15	5-10	5-10	5-10	300
3	Total Coliform	IS 1622:1981, Reaffirmed 2019	MPN/100 ml	05.0	04.0	06.0	8.0	500.0
4	Arsenic (as As)	IS 3025:Part 37: 2022	mg/L	ND	ND	ND	ND	0.2
5	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	ND	ND	ND	ND	0.05

ND-Not Detected, * Class - B - Water for outdoor bathing,

Note-

1. The test results relate only to the items sampled and tested.
2. Total Liability of ERS (I) Pvt. Ltd. is limited to the Invoice Amount.
3. This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pvt. Ltd.
4. Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseous/Liquid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
5. This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I) Pvt. Ltd.

(Authorized Signatory)
S.P.Pattanayak
Tech.Manager

.....END OF TEST REPORT.....



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Ref. No.

Test Report Format No.: ERSIPL/FM/40.....
Date:

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 03 Aug 2024
Test Report No: ERSIPL/TR/WA/T-213
Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of Sampling : 12.07.2024
Sample Collected by : R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer.
Sample Received on : 16.07.2024
Analysis Started on : 16.07.2024
Analysis Completed on : 26.07.2024
Method of Sampling : As per Applicable Test Method
Quantity of Sample : 2 ltrs
Type of Container : BOD Bottle, HDPE Bottle
Weather Condition : Sunny
Atmospheric Temperature : 34 °C

Sample ID. No.

- ERSIPL/WA/505
- ERSIPL/WA/506
- ERSIPL/WA/507
- ERSIPL/WA/508

Location

- Basundhara Nala Water
- Pond water in village Godwar
- Pond water in village Gopalpur
- Pond water in village Haldibahal

TEST FINDINGS:

S. No.	Test Parameters	Test Method	Unit	Result				Surface water quality standard as per IS :2296 (Class - B)*
				ERSIPL/WA/505	ERSIPL/WA/506	ERSIPL/WA/507	ERSIPL/WA/508	
1	Phenolic Compounds	IS 3025: Part 43:1992, Reaffirmed 2019	mg/L	ND	ND	ND	ND	0.005
2	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	10-15	5-10	5-10	5-10	300
3	Total Coliform	IS 1622:1981, Reaffirmed 2019	MPN/100 ml	04.0	02.0	05.0	06.0	500.0
4	Arsenic (as As)	IS 3025:Part 37: 2022	mg/L	ND	ND	ND	ND	0.2
5	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	ND	ND	ND	ND	0.05

ND-Not Detected, * Class - B - Water for outdoor bathing,

- Note-
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Ref. No.

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (WATER/WASTE-WATER)

Date.....

Pg No: 1 of 1

Date: 30 Sept 2024

Test Report No: ERSIPL/TR/WA/T-280

Name and Address of the Customer

: Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of Sampling

: 11.09.2024

Sample Collected by

: R K Jena, Field Supervisor of ERS (I) Pvt. Ltd.

Sample Collected in presence of

: Representative of the Customer.

Sample Received on

: 18.09.2024

Analysis Started on

: 18.09.2024

Analysis Completed on

: 26.09.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 2 ltrs

Type of Container

: BOD Bottle, HDPE Bottle

Weather Condition

: Cloudy

Atmospheric Temperature

: 30 °C

Sample ID. No.

1. ERSIPL/WA/641
2. ERSIPL/WA/642
3. ERSIPL/WA/643
4. ERSIPL/WA/644

Location

1. Basundhara Nala Water
2. Pond water in village Godwar
3. Pond water in village Gopalpur
4. Pond water in village Haldibahal

TEST FINDINGS:

S. No.	Test Parameters	Test Method	Unit	Result				Surface water quality standard as per IS :2296 (Class - B)*
				ERSIPL/WA/641	ERSIPL/WA/642	ERSIPL/WA/643	ERSIPL/WA/644	
1	Phenolic Compounds	IS 3025: Part 43:1992, Reaffirmed 2019	mg/L	ND	ND	ND	ND	0.005
2	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	11-15	5-10	5-10	5-10	300
3	Total Coliform	IS 1622:1981, Reaffirmed 2019	MPN/100 ml	06.0	04.0	12.0	14.0	500.0
4	Arsenic (as As)	IS 3025:Part 37: 2022	mg/L	ND	ND	ND	ND	0.2
5	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	ND	ND	ND	ND	0.05

ND-Not Detected, * Class - B - Water for outdoor bathing,

Note-

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Environmental Research and Services (India) Pvt. Ltd.

(OSPCB 'A' Category Empanelled Laboratory and ISO 9001 : 2015 Certified Company)

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Tel: +91-9437021932, +91-9937690329, E-mail: ersibbsr@gmail.com

NOISE LEVEL MEASUREMENT REPORT

Date: 02 May 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.
Date of reading : 08.04.2024 & 23.04.2024
Sample Collected by : Representative of ERS (I) Pvt. Ltd.
Sample Collected in presence of : Representative of the Customer

Sl. No.	Location	Result in dB(A) Leq		Result in dB(A) Leq	
		Date of Monitoring- 08.04.2024		Date of Monitoring- 23.04.2024	
		Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)	Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)
01	East of Working Face- Pit Office	48.4	44.7	47.3	39.7
02	West of Working Face-DBL Camp	45.7	36.3	43.9	34.1
03	North-West of Working Face- CMPDI Office	38.6	31.2	36.7	31.2
04	South of Working Face- Village Haldibahal	33.9	31.0	34.4	30.6
05	Near Workshop Area	58.3	51.9	57.2	43.6
PERMISSIBLE LIMIT (Industrial Area)		75.0	70.0	75.0	70.0
06	Near Village Sumura	32.6	30.8	39.3	32.4
07	Near Village Tikilipara	39.4	34.1	41.6	32.7
08	Near Village Duduka	38.3	34.7	34.1	30.4
09	Near Village Kund	34.5	30.6	45.6	33.8
10	Near DBL Camp	47.1	37.2	33.7	30.3
PERMISSIBLE LIMIT (Residential Area)		55.0	45.0	55.0	45.0

- Note-
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CIN - U73100OR1995PTC003889



GSTIN : 21AAACE6224D1ZE

Environmental Research and Services (India) Pvt. Ltd.

(An ISO 9001 : 2015 Certified Company)

Plot No: B-22, Sector-B, Industrial Estate Chandaka, Infocity Road, Bhubaneswar-751024, Odisha
Tel: +91-9437021932, +91-9937690329 , E-mail: ersibbsr@gmail.com

Ref. No.

Date.....

NOISE LEVEL MEASUREMENT REPORT

Date: 30 May 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of reading : 08.05.2024 & 18.05.2024

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer

Sl. No.	Location	Result in dB(A) Leq		Result in dB(A) Leq	
		Date of Monitoring- 08.05.2024		Date of Monitoring- 18.05.2024	
		Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)	Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)
01	East of Working Face- Pit Office	48.2	41.7	46.7	41.2
02	West of Working Face-DBL Camp	47.9	39.8	41.9	36.6
03	North-West of Working Face- CMPDI Office	37.6	32.4	35.1	30.7
04	South of Working Face- Village Haldibahal	34.7	31.6	34.6	31.1
05	Near Workshop Area	57.3	52.6	58.7	52.3
PERMISSIBLE LIMIT (Industrial Area)		75.0	70.0	75.0	70.0
06	Near Village Sumura	33.6	30.7	33.8	30.8
07	Near Village Tikilipara	38.2	32.6	39.7	32.8
08	Near Village Duduka	41.1	32.4	42.3	34.6
09	Near Village Kund	33.3	31.4	35.1	31.7
10	Near DBL Camp	48.3	41.5	43.2	34.5
PERMISSIBLE LIMIT (Residential Area)		55.0	45.0	55.0	45.0

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Ref. No.

Date.....

NOISE LEVEL MEASUREMENT REPORT

Date: 02 July 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of reading : 13.06.2024 & 24.06.2024

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer

Sl. No.	Location	Result in dB(A) Leq		Result in dB(A) Leq	
		Date of Monitoring- 13.06.2024		Date of Monitoring- 24.06.2024	
		Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)	Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)
01	East of Working Face- Pit Office	47.5	43.7	47.8	41.3
02	West of Working Face-DBL Camp	43.7	36.5	44.6	36.1
03	North-West of Working Face- CMPDI Office	36.9	31.2	38.2	31.6
04	South of Working Face-Village Haldibahal	34.3	31.6	34.1	31.7
05	Near Workshop Area	59.6	51.3	58.7	52.4
PERMISSIBLE LIMIT (Industrial Area)		75.0	70.0	75.0	70.0
06	Near Village Sumura	32.9	30.4	33.2	31.3
07	Near Village Tikilipara	39.8	33.1	39.4	32.1
08	Near Village Duduka	41.1	34.9	41.3	33.4
09	Near Village Kund	33.6	31.3	34.7	31.2
10	Near DBL Camp	44.1	35.7	46.1	41.8
PERMISSIBLE LIMIT (Residential Area)		55.0	45.0	55.0	45.0

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CIN - U73100OR1995PTC003889



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Ref. No.

NOISE LEVEL MEASUREMENT REPORT

Date.....

Date: 03 Aug 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of reading : 11.07.2024 & 22.07.2024

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer

Sl. No.	Location	Result in dB(A) Leq		Result in dB(A) Leq	
		Date of Monitoring- 11.07.2024		Date of Monitoring- 22.07.2024	
		Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)	Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)
01	East of Working Face- Pit Office	48.4	41.6	57.6	55.9
02	West of Working Face-DBL Camp	44.3	36.4	56.2	57.5
03	North-West of Working Face- CMPDI Office	35.7	31.7	54.7	52.1
04	South of Working Face- Village Haldibahal	33.8	30.9	50.2	47.8
05	Near Workshop Area	59.4	51.6	59.2	56.7
PERMISSIBLE LIMIT (Industrial Area)		75.0	70.0	75.0	70.0
06	Near Village Sumura	33.1	30.4	49.7	42.8
07	Near Village Tikilipara	39.7	32.3	47.6	42.1
08	Near Village Duduka	42.6	33.8	48.2	40.6
09	Near Village Kund	34.9	30.1	42.1	39.8
10	Near DBL Camp	39.3	32.7	51.7	43.4
PERMISSIBLE LIMIT (Residential Area)		55.0	45.0	55.0	45.0

- Note-
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Ref. No.

Date.....

NOISE LEVEL MEASUREMENT REPORT

Date: 30 Aug 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of reading : 13.08.2024 & 19.08.2024

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer

Sl. No.	Location	Result in dB(A) Leq		Result in dB(A) Leq	
		Date of Monitoring- 13.08.2024		Date of Monitoring- 19.08.2024	
		Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)	Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)
01	East of Working Face- Pit Office	58.4	54.2	46.8	43.4
02	West of Working Face-DBL Camp	56.8	53.3	44.6	41.2
03	North-West of Working Face- CMPDI Office	52.7	49.7	40.8	37.3
04	South of Working Face- Village Haldibahal	46.4	42.4	38.2	34.5
05	Near Workshop Area	51.2	49.1	54.4	50.8
PERMISSIBLE LIMIT (Industrial Area)		75.0	70.0	75.0	70.0
06	Near Village Sumura	44.8	41.3	36.8	32.6
07	Near Village Tikilipara	43.9	41.1	37.2	33.3
08	Near Village Duduka	45.1	43.9	35.3	31.6
09	Near Village Kund	44.2	41.1	37.2	33.8
10	Near DBL Camp	50.4	43.6	43.8	40.1
PERMISSIBLE LIMIT (Residential Area)		55.0	45.0	55.0	45.0

- Note-
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CIN - U73100OR1995PTC003889



GSTIN : 21AAACE6224D1ZE

Environmental Research and Services (India) Pvt. Ltd.

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Ref. No.

NOISE LEVEL MEASUREMENT REPORT

Date.....

Date: 30 Sept 2024

Name and Address of the Customer : Siarmal Open Cast Coal Mining, Project of M/s MCL, Mahalaxmi Area in Sundargarh district, Odisha.

Date of reading : 11.09.2024 & 19.09.2024

Sample Collected by : Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of : Representative of the Customer

Sl. No.	Location	Result in dB(A) Leq		Result in dB(A) Leq	
		Date of Monitoring- 11.09.2024		Date of Monitoring- 19.09.2024	
		Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)	Day time (6.00AM – 10.00 PM)	Night time (10.00PM – 6.00AM)
01	East of Working Face- Pit Office	45.9	43.2	48.2	46.7
02	West of Working Face-DBL Camp	46.2	44.1	51.9	48.6
03	North-West of Working Face- CMPDI Office	41.3	39.1	43.9	41.2
04	South of Working Face- Village Haldibahal	36.8	33.7	38.9	36.8
05	Near Workshop Area	55.2	52.3	59.4	54.9
PERMISSIBLE LIMIT (Industrial Area)		75.0	70.0	75.0	70.0
06	Near Village Sumura	35.9	32.7	36.8	33.1
07	Near Village Tikilipara	37.3	35.2	39.4	37.2
08	Near Village Duduka	34.2	31.9	35.8	33.7
09	Near Village Kund	35.7	32.3	37.4	35.3
10	Near DBL Camp	42.8	40.6	45.8	42.9
PERMISSIBLE LIMIT (Residential Area)		55.0	45.0	55.0	45.0

- Note-
- The test results relate only to the items sampled and tested.
 - Total Liability of ERS (I) Pvt. Ltd. is limited to the Invoice Amount.
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[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:26:27 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020502
Registration No. : MP39H2538
Date of Registration : 24/May/2016
Month & Year of Manufacturing : March-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.53

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:13:12 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020496
Registration No. : MP39H2615
Date of Registration : 30/Jun/2016
Month & Year of Manufacturing : May-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.5

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:27:45 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020503
Registration No. : MP39H2644
Date of Registration : 28/Sep/2016
Month & Year of Manufacturing : July-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.68

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:18:17 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020498
Registration No. : MP39H2747
Date of Registration : 03/Nov/2016
Month & Year of Manufacturing : October-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.39

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:30:44 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020504
Registration No. : MP39H2793
Date of Registration : 23/Nov/2016
Month & Year of Manufacturing : October-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.41

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:24:45 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020501
Registration No. : TS20T3118
Date of Registration : 03/Nov/2016
Month & Year of Manufacturing : October-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.47

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 03/11/2024
Time : 07:07:43 AM
Validity upto : 02/05/2025



Certificate SL. No. : UP06300160020401
Registration No. : TS20T3119
Date of Registration : 03/Nov/2016
Month & Year of Manufacturing : October-2016
Valid Mobile Number : *****2563
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.59

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Uttar Pradesh

Date : 05/11/2024
Time : 20:09:03 PM
Validity upto : 04/05/2025



Certificate SL. No. : UP06300160020494
Registration No. : TS20T3134
Date of Registration : 02/Nov/2016
Month & Year of Manufacturing : October-2016
Valid Mobile Number : *****1111
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : UP0630016
GSTIN :
Fees : Rs.110.00
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.51

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Issues Regarding public hearing

The status of compliance regarding issues raised by the public during public hearing is as follows:

1. Issues regarding compensation:

Compensation status			
Name of the village	Compensation roll amount (in Rs.)	Paid (in Rs.)	Balance (in Rs.)
Gopalpur	3692415912.50	3492798057.94	199617854.56
Siarmal	961352430.74	833536970.01	127815460.73
Kulda	All compensation has been Paid. Part area is required for Siarmal OCP		
Tumulia	5663146942.78	1921647163.95	3741499778.83
Jhuprunga	4950687481.19	3165134363.24	1785553117.95
Ratansara	As per order of Supreme Court on dated 03.11.2023 and directed by competent authority. Preparation of revised compensation is in under process.		

2. Issues regarding employment:

Employment to Under Cat.I PAPs			
Name of the village	Emp. Approved	Given	Balance
Gopalpur	628	528	100
Siarmal	130	123	7
Kulda	Provided as per R&R Policy of Orisha Government		
Tumulia	As per order of Supreme Court on dated 03.11.2023. It to be finalized		
Jhuprunga			
Ratansara			

3. Issue regarding R&R

Resettlement

Name of the Village	Total Nos. of PDF	Sanction	Balance
Gopalpur	1031	389	642
Siarmal	196	156	40
Kulda	Provided as per R&R Policy of Orisha Government		
Tumulua	As per order of Supreme Court on dated 03.11.2023. It to be finalized		
Jhuprunga			
Ratansara			

4. Issues regarding dust pollution:

Transportation of coal is being carried out by fully covered trucks. **2 nos. of 28 KL** water tankers and **11 nos. of 15 KL** water tankers have been deployed at the mines to abate fugitive dust emission. **5 nos. of trolley mounted fog canons** have also been procured and have been installed at the coal stock yard. **168 fixed sprinklers** is being installed along the haul road.

5. Issues regarding blasting:

The permission for controlled blasting has been obtained and the same is attached herewith the report. Coal is being excavated by the means of eco-friendly surface miners.


01/01/2025

Project Officer,

Siarmal OCP,

Mahalaxmi Area, MCL.





Compliance of the conditions mentioned in OM No. Z-11013/57/2014-IA. II (M) of
Government of India
Ministry of Environment, Forests and Climate Change
Impact Assessment Division

Subject: 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- Regarding.

The mitigation measures that have been undertaken to avoid adverse impact of mining operations in the case of such habitations/villages is as follows:

- a) **The Project Authority shall adopt Best Mining Practice for the given mining conditions. In the mining area, an adequate number of check dams, retaining walls/structures, garland drains and settling ponds should be provided to arrest the wash-off with rainwater in catchment area.**

Reply: Coal is being excavated with the help of eco-friendly surface miners which have wet cutting arrangements. The drills that have been deployed are having NVE dust extractors as well. Within the mining lease hold area, a **garland drain of 4.3 km** has been constructed and there are **5 check dams** to check the flow of water flowing through the garland drain. The check dams would not only restrict the flow from turning into turbulent flow but would also help in natural sedimentation process. The feasibility of retaining wall is being explored and **3 settling ponds of 24000 m³** capacity have already been created, to abate water pollution by imparting proper sedimentation of colloids formed by dust particles.

- b) **The natural water bodies and our streams which are flowing in and 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 Authorities have to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table:

Reply: The User Agency (Siarmal Open Cast Coal Mining Project of M/s Mahanadi Coalfields Limited) had engaged a consultant namely M/s Kalinga Commercial Corporation Limited, Bhubaneswar on 13.05.2022 to study the hydrological regime of the area. Chhatajor Nallah located in the area will not be straightened by the user agency. And the study of the hydrological regime is directed towards the protection of the Basundhara River and its rivulets. The report prepared by the consultant was submitted by the User Agency to Water Resource Department, Govt. of Odisha for obtaining considered opinion. The opinion of the Water Resource Department, Govt. of Odisha was obtained on 02.09.2022 vide letter No. 22930 and a strategic Framework for Conservation of Basundhara River from Coal Mining Hydrological regime viz. Basundhara River and its rivulets is being undertaken in consultation with the Water Resource Department, Government of Odisha at the project cost. In addition to this, the proposal for construction of 2 nos. of rainwater harvesting structures has already been initiated and 1 no. RWHS provided at the mines pit office and the other RWHS will be constructed by 31st December 2023.

5 KL of drinking water is being provided to Naktideol village and Haldibahal village respectively from May 2023 onwards. Presently 28 KL of drinking water is being provided to Naktideol, Haldibahal and other villages. NABL Accredited agency, i.e., Environmental Research and Services (India) Pvt. Ltd. has been selected as the agency to carry out the Routine Environmental parameters monitoring, as per the directive of the CTO order. The monitoring report for ground water is attached herewith as **Annexure 2B**.

- c) **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. The Project Proponents (PPs)**

must ensure that the biological clock of the villagers is not disturbed by orienting the floodlights/ masks away from the villages and keeping the noise levels well within the prescribed limits for day/night hours.

Reply: The biological clock of the villages is not being disturbed. However, orienting as well as masking away the floodlights from the villagers and keeping the noise levels well within the prescribed limits for daylight/night hours as per permissible standards are being practiced.

Ambient Noise level monitoring is being done at 10 stations to understand the impact of noise pollution, if any. Report has already been attached as **Annexure 2E**.

- d) The Project Authority shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing. In this context, Project Authority 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, lest the cattle abandon the grazing ground or return home by noon.**

Reply: Acquisition of adequate land for the said purpose is under process. Once the process of land acquisition is completed, it will be communicated to the office of IRO, MoEF&CC, Bhubaneswar.

- e) Wherever blasting is undertaken as part of mining activity, the Project Authority shall carry out vibration studies well before approaching any such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighborhood. Within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction, such as ripper/dozer combination/rock breakers/ surface miners etc. should be seriously considered and practiced wherever practicable. A provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained. The covenant of lease deed under**

Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the Competent Authority.

Reply: The permission for controlled blasting has been obtained and the same is attached herewith the report. Coal is being excavated by the means of eco-friendly surface miners.

- f) 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.**

Reply: installation of 168 fixed type sprinklers has already been started at the main haulage road with permanent water sprinklers. Till then, 2 nos. of 28 KL water tankers and 11 nos. of 15 KL water tankers are plying on the main haulage road in the mine to abate fugitive dust emission.

CHP has not yet been constructed. CHP will come into operation in the fifth year of coal production.

- g) The Project Authority shall ensure that the productivity of agricultural crops is not affected due to mining operations. Crop Liability Insurance Policy has to be taken by the PP as a precaution to compensate for any crop loss. The impact zone shall be 5 km from the boundary of mine lease area for such insurance policy. In case several mines are located in a cluster, the Associations of owners of the cluster mines, formed inter-alia, to sub-serve such an objective, shall take responsibility for securing such Crop Liability Policy.**

Reply: There have been no such instances regarding any detrimental effect on the productivity of agricultural crops due to mining activities of Siarmal OCP, Moreover, no wastewater is being discharged into the local water body that may serve as a source of water for works related to productivity of agricultural crops within the 5 km vicinity.

Therefore, if any such case arises in the future where the detrimental effect of mining activities of Siarmal OCP is prove, Crop Liability Insurance Policy will be taken up in a phased manner.

- h) In case any village is located within the mining leasehold which is not likely to be affected due to mining activities during the life of mine, the Expert Appraisal Committee (EAC) should consider the proposal of Environmental Clearance (EC) for reduced mining area. The Mining lease may be executed for the area for which EC is accorded. The mining plan may also be accordingly revised and required stipulations under the MMDR Act, 1957 and MCR, 1960 met.**

Reply: Siarmal OCP consists of six villages namely Jhuprunga, Siarmal, Ratansara, Gopalpur, Tumulia and Kulda. EC has already been accorded in favour of Siarmal OCP on 05/05/2022 for the peak coal production of 50 MT over mining lease area of 2290.449 ha, thus, considering the mining plan that has already been submitted by the project proponent earlier to the EAC meeting.

- i) Transportation of the minerals 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 minerals so that the impact of sound, dust and accidents could be mitigated. The PP 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 capacity of such roads.**

Reply: No village road will be used for transportation of coal. The proposed Transport route is not passing through any sensitive location such as School, Hospital etc. The proposed transportation route is within the mining lease area of Basundhara (West) OCP which falls within the administration of Mahanadi Coalfields Limited, itself.

- j) Likewise, alteration or re-routing of foot paths, pagdandies, cart roads, and village**

infrastructure/public utilities or roads (for purposes of land acquisition for mining) shall be avoided to the extent possible and in case such acquisition is inevitable, alternative arrangements shall be made first and then only the area acquired. In these types of cases, Inspection Reports by site visit by experts may be insisted upon which should be done through reputed Institutes.

Reply: Claims Commission has been appointed by Honorable Supreme Court for proper screening of villages coming within the mining lease area of Siarmal OCP. R&R site has been constructed and anganbadi center, village roads and other public utilities have been set up for the people who have been rehabilitated to the R&R site. Since mining operations at Siarmal OCP are being carried out in a phased manner, diversion of State Highway has already been completed at the expense of MCL, thus, causing no hindrance in the daily life of nearby villagers.

- k) As CSR activities by Companies including the Mining Establishments has become mandatory up to 2% of their financial turn-over, Socio Economic Development of the neighborhood Habitats could also be planned and executed by the PPs more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers on the lines as required under TOR. "R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village located in the mine lease area will be shifted or not. The issues relating to shifting of Village including their R&R and socio-economic aspects should be discussed in the EIA report."

Reply: Rs. 2418246.00 has been spent towards CSR activities. Other activities shall be undertaken from time to time and reports shall be submitted accordingly.

Siarmal Coal Mines	
CSR Expenses FY 2024-25	Amount (Rs.)
Health camp	386675
Awareness program in Health issue	10000
Support for festival & puja	309000
Games & sports	273000
Hand Pump Repair	179110
Tuberculosis Camp Sardega	15907
Drinking Water Supply through Tanker (Apr-Sept)	350000
Bleaching Powder Distribution	60474
Street Light Tumulia Shiv Mandir	120000
Support to adhruta children home	30000
Drwaing Competition in govt schools	30000
School (Computer set,table,chair,water bottle,clothes,school equipment)	93341
Blanket to old age People	26904
Musical instruments Donate to village kirtan mandali	25000
Village pond cleaning & Renovation	22364
Anganwadi & school Renovation	10200
Village Road Repairing	10700
Rath yatra Prasad	60000
Others	28060
Total	2418246


01/01/2025
Project Officer,

Siarmal OCP

Mahalaxmi Area, MCL.







Project 001
Final OOI