

Ref: 1070/NTPC/DLCMP/EC/HCY/65

Date: 23.12.2024

To

Dy. Director General of Forest (Central), Govt. of India, Ministry of Environment, Forests and Climate Change, Integrated Regional Office, A-3 Chandrashekharpur, Bhubaneswar-751023, Odisha

Subject: Dulanga Opencast Coal Mining Project of NTPC Mining Limited (PRC - 7 MTPA), Dist: Sundargarh, Odisha - Submission of Half Yearly Report for the period from Apr'24 to Sep'24 on the status of compliance of the stipulated Environmental Clearance conditions

Ref.: MoEF&CC Environmental Clearance Letter Number- J-11015/1140/2007-IA.II (M) dated 6th June 2024 in name of M/s NTPC Mining Ltd previously in name of NTPC Limited vide 03rd March, 2014, J-11015/1140/2007-IA.II (M) dated 9th February, 2016 and subsequent amendments

Dear Sir,

With reference to the above, we are submitting the Half Yearly Report on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data for the period from Apr'24 to Sep'24 with reference to the above-mentioned EC Order issued by the Ministry of Environment, Forests and Climate Change, Govt. of India, in Parivesh Portal.

The softcopy of the same is being mailed in the email id: roez.bsr-mef@nic.in for your kind information and necessary record please.

Thanking You.

Encl.: As above

Yours Faithfully,

Arindam Pattnaik Senior Manager (Envt. Mgt.)

Copy to:

1. The Regional Directorate

Central Pollution Control Board, Zonal Office, Southern Conclave, Block -502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107

 The Member Secretary, State Pollution Control Board, A/118, Nilakantha Nagar, Unit - VIII, Bhubaneswar – 751012

Dulanga Coal Mining Project, Khapurikachhar, PO – Sanghumuda, Tehsil-Hemgir, Dist-Sundargarh 770013 दुलंगा कोल माइनिंग प्रोजेक्ट, खापुरिकछार, पोस्ट - संघुमुद्रा, तहसील - हेमगीर, ज़िला - सुंदरगढ़ ७७००१३ NTPC Limited, Ginni Plaza, Opposite Chutia Police Station, Chutia, Ranchi – 834001 (Jharkhand) Registered Office: NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, New Delhi – 110003 www.ntpc.co.in

Point wise Compliance Report of Conditions specified in Environmental Clearance

Ref. Ltr. No. J-11015/1140/2007-IA.II (M) dated 03rd March, 2014 and amendment as on date

ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(i)	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.	Being Complied
		As per the EC granted and as per approved Mining Plan, the rated peak production capacity of DLCMP is 7.0 MTPA.
		During FY 2024-25, 3.3 MT coal has been produced till 30.09.2024.
		Coal Produced in Last five years are as follows:
		FY 19-20: 15,40,002.71 Tonnes
		FY 20-21: 31,23,840.00 Tonnes
		FY 21-22: 52,92,094.00 Tonnes
		FY 22-23: 70,00,000.00 Tonnes
		FY 23-24: 70,00,000.00 Tonnes
(ii)	The Forest Clearance has been granted for 304.75 ha (273.68 ha within the Dulanga Coal Block and 31.07 ha of forest land outside the Coal Block including 4.94 ha of forest land coming within the safety zone in Dulanga Coal Mining Project) vide letter no. 8-23/2013-FC dated 10.01.2014. FC for balance 18.34 ha has not been granted. No mining activity shall be carried out in forest land for which FC has not been granted.	Being Complied Presently mining activity is restricted within the forest land diverted to Dulanga Coa Mining Project. Working Plan showing the present mining activity is attached as Annexure-I.
(iii)	OB dump along the western side of an area of 244 ha would be brought to almost ground level for post-mining land use by re-handling of an estimated 112 Mm³ of OB during 5 years after end of mine life (EOL). However, the dump along the east would be about 30m above ground level.	Agreed to Comply This has been incorporated in the Mine Closure Plan and shall be ensured at the time of mine closure.

ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(iv)	the territory and from the	Agreed to Comply
(14)		It shall be followed
(v)	ha within the ML (which includes an area of 226.23 ha of guarry area) and	Agreed to Comply
		Plantation in quarry area will be done in phases in the available area after completion of mining and internal dumping is over.
		So far, 83,805 nos. of plants have been planted in the vacant areas in the project. Total 34,840 numbers of sapling have been planted till Sept2024 and total 83,805 nos. of plants have been planted and 10,700 sapling distributed in the peripheral areas since inception of the mine.
		17091 nos. of saplings planted inside the ML over an area of 9.5 Ha and 66914 nos. of saplings planted outside the ML over an area of 66.48 Ha.
		Within ML, available spaces for Plantation are limited as the reclamation can only be done in the decoaled areas and over inpit dumps after attaining the final heights.
		So, plantation have been carried out at available vacant spaces where mining operations are not carried out.
		Outside ML, plantation was to be done over the external over dump area after the dump achieves final height.
		Currently, the dump is active and over the rest of the areas which presently comprises of CHP, MGR, Silo, other infrastructure along with densely vegetated undisturbed areas.
		The plantation has been carried over available vacant spaces outside ML area including R and R Colony.
		Moreover, the plantation over the areas mentioned in the condition shall be developed with plantation progressively throughout the life of mines leading to final closure of mines.
(vi)	No fly ash from the linked TPPs shall be used in backfilling of the void without diffdertaking an environmental	THE RESERVE OF THE PARTY OF THE



ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
	feasibility study and without prior approval of this Ministry under EIA Notification, 2006.	Presently no fly ash is being dumped in the backfilling area.
(vii)	Option-3 be adopted, as committed by the proponent, as the most feasible option for diversion of Garia Nala, Baidhara Nala and Nala B and its realignment, whereby the plan for their diversion to be taken up during the 8th and 10th year.	Being Complied Permission obtained from Dept. of Water Resources, Govt. of Odisha for diversion of Garia Nalla and its tributaries (Baidhar Nallah and Nallah-B) flowing within the coal block boundary of Dulanga Coal Mining Project vide letter dated. 23.08.2021.
		Copy of Nallah diversion permission letter is attached as Annexure-III .
		The Diversion of Garia Nala has been completed. However, embankment works are in progress. The Nalla has taken its natural course.
(viii)	The fluoride in the groundwater both in dug wells and by installing piezometers in the study area at appropriate locations be monitored.	Complied Groundwater quality including Fluoride is being monitored by an NABL Accredited laboratory at eight different locations in Core and Buffer zone.
		One (01) no. of Piezometer has been installed at Site Office area as per the conditions of NOC from CGWA.
		Also, Water level is being monitored through network of borewells/wells in core and buffer zone of DLCMP.
		The analysis report of groundwater collected from the different locations within the study area for the period from the month of Apr'2024 to Sep'2024 is attached as Annexure - IV .
(ix)	Transport of coal to Darlipalli TPS located at a distance of about 10km shall be by MGR.	Complied Coal produced from the DLCMP is being transported to Darlipalli Super Thermal Power Plant through MGR.
(x)	An integrated calendar plan of production including the details rehandling separately in external and internal dumps should be furnished to MOEF for record.	Complied Integrated calendar plan of production including details of re-handling of external and internal dumps has been submitted to MoEF & CC vide letter no. 0100/DLCMP/FD/ES/02/0814 dated



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ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
		25.08.2014. Copy of letter attached as Annexure-V.
(xi)	Temporary OB dumps which require re-handling should be stabilized with grass and shrubs.	Complied Presently, OB dumps are active, and dumping is being done over there as per the approved mining plan.
		However, the inactive portion of the OB dump over 1.5 Ha has been stabilized with grassing and planting the tree sapling. Photos of the OB dump grassing is attached as Annexure-VI .
(xii)	Data available with the Rajiv Gandhi National Drinking Water Mission, Department of Rural Development be studied and recommendations therein for removal / treatment of fluorides, TDS, etc, in drinking water be followed for providing safe drinking water to R&R colony and to the nearby villages.	Complied Level of Fluorides, TDS etc. in the bore well and drinking water to R&R Colony is being monitored through NABL Accredited laboratory. The concentration level is well within the prescribed limits.
		Water is being supplied to all the dwelling units in the R&R Colony through overhead tank after treatment in water treatment plant.
		Additionally, UV Water purifiers have been provided to all the dwelling units of R&R Colony for ensuring safe drinking water.
		Copy of Ground water quality report attached as Annexure-IV & photographs of UV Purifier, WTP & OHT is attached as Annexure-VII .
(xiii)	Mining shall be carried out as per statute at a safe distance from Garia Nala and its diversion canal and the diverted Baidhara nala and nala'B' Nala flowing within the lease boundary. The bund /embankment to be constructed along diverted canal of Garia nala shall be designed taking into account the highest flood level, based on past data, so as to guard against mine inundation.	The embankment is designed taking into account the highest flood level and approved by the Water Resource



अर्रियम पट्टनायक / ARINDAM PATTNAIK वरिष्ठ प्रबंधक / Sr. MANAGER (पर्यावरण प्रवंधक) / IENVIRONMENT MANAGEMENT) दुलंगा सी.एम.पी. / DULANGA C.M.P. एगदीपीसी लिमिटेड / NTPC LTD. सुंदरगढ़ / SUNDARGARH

ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(xiv)	Topsoil shall be stacked properly within the ML with proper slope at earmarked site of 3.84 ha and shall be concurrently used for reclamation and development of green belt within a year of its generation.	Complied Top soil is being stacked within ML with proper slope at earmarked site. 10,70,000 m3 of top soil has been stacked at the earmarked site as on 30/09/2024.
(xv)	A temporary external OB dump in an area of 106.62 ha and of 60m height for the initial period of 2.5 years shall be created for dumping 38.5 Mm3 of OB, which would be reclaimed with plantation and after 2.5 to 3 year. There would be no external OB dumping from 5th year onwards. The temporary OB dumps which require re-handling shall be stabilized with grass and shrubs.	Agreed to Comply Initially the external OB dump was planned in 106.62 ha area, but while granting the forest clearance, an area of 18.34 ha forest land and 2.95 ha of Govt land was excluded hence the present area for the external OB dump is reduced to 86 ha, accordingly only 28.5 mill.CuM shall be accommodated in the external OB dump.
		However, due to local law & order issues (i.e., resistance from the villagers for rehabilitation activities), the total proposed quantity i.e., 28.5 million Cu.M is unable to accommodate in the external OB Dump.
		Till end of Sep-24, approx. 17.35 million CuM of OB is accommodated and the balance OB Quantity to be accommodated at the earliest.
		Presently dumping activities are being carried out at Khapurikachhar OB dump and In pit dump.
		Inactive OB dump of Khapurikhachar having 1.5 ha. has been grassed with different varieties along with local sapling planted and along the slope with Stylo Hamata grass.
(xvi)	be not less than 466.46 ha which includes 286.74 ha within the ML and 179.72 ha outside the ML would be reclaimed with plantation, which includes 351.23 ha of reclaimed quarry, 106.50 ha of reclaimed external OB dump, 3.84 ha of topsoil dump, 2.75 ha of coal stockyard, 2.14 ha of surface water reservoir and an area of 83.74 ha undisturbed shall be developed into green belt within the first 3 years.	Noted and Agreed to Comply
		Plantation in quarry area will be done in phases in the available area after completion of mining and internal dumping is over.
		So far, 83,805 nos. of plants have been planted in the vacant areas in the project. Total 34,840 numbers of sapling have been planted till Sept2024 and total 83,805 nos. of plants have been planted and 10,700 sapling distributed in the peripheral areas since inception of the mine.
		17091 nos. of saplings planted inside the ML over an area of 9.5 Ha and 66914 nos. of



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		saplings planted outside the ML over an area of 66.48 Ha.
		Within ML, available spaces for Plantation are limited as the reclamation can only be done in the decoaled areas and over inpit dumps after attaining the final heights.
		So, plantation have been carried out at available vacant spaces where mining operations are not carried out.
		Outside ML, plantation was to be done over the external over dump area after the dump achieves final height.
		Currently, the dump is active and over the rest of the areas which presently comprises of CHP, MGR, Silo, other infrastructure along with densely vegetated undisturbed areas.
		The plantation has been carried over available vacant spaces outside ML area including R and R Colony.
		Moreover, the plantation over the areas mentioned in the condition shall be developed with plantation progressively throughout the life of mines leading to final closure of mines.
(xvii)	Catch drains and siltation ponds of	Complied
(xvII)	appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.	Catch drains of 8 Kms length and siltation ponds of appropriate size are constructed to arrest silt and sediment flows from topsoil. OB and mineral dumps. Garland drain is so designed that it will discharge the rainwater to settling pond.
		Garland drains having width and depth of 1.5m to 2.0m have been constructed along OB Dumps. All the garland drains are connected to settling pond before discharging the rainwater to Garia Nala.
		Details of the same is as under:
		> OB dump-1A: 2350 m
		➤ OB dump-1B: 2920 m
		➤ Khuntijharia OB dump: 2578 m
		➤ Beldihi OB dump: 1120 m



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		Up-side of the mine: 2350 m this prevents entry of outside storm water into the mine pit.
		Sedimentation pond/ settling pond has been de-Silted periodically. Also, embankment of adequate size is being provided along the Garia Nalla.
		Photos of garland drains, sedimentation pond and dust suppression are attached as Annexure - VIII.
(xviii)	The entire transportation of 21,210 TPD of coal from the mine to the linked Darlipali Super Thermal Power plant shall be by MGR only with wagon loading by Silo. Transportation of coal by road is not permitted.	Complied Coal transportation to Darlipalli Super Thermal Power Plant is through MGR with wagon loading.
		In the event of Silo maintenance wagon loading is done through loaders ensuring proper dust prevention and suppression measures.
		Photos of Coal Silo and rail wagons are attached as Annexure - IX .
(xix)	An STP shall be provided for the township/ colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.	Complied The township of NTPC Dulanga is integrated with NTPC Darlipalli and STP of 1200 KLD is provided in the integrated township.
		However, STP has been provided for NTPC administrative Office.
		For mines pit offices septic tank followed by soak pit have been provided.
		The treated effluents are as per prescribed standards and are being reused for horticultural purpose.
		Photograph of STP at Darlipali Township is attached as Annexure-X .
(xx)	Area brought under afforestation shall be not less than 466.46 ha which includes 286.74 ha within the ML and 179.72 ha outside the ML would be	Plantation in quarry area will be done in phases in the available area after completion of mining and internal dumping is over.
	reclaimed with plantation, which includes 351.23 ha of reclaimed quarry, 106.50 ha of reclaimed external OB dump, 3.84 ha of topsoil dump, 2.75 ha of coal stockyard, 2.14	So far, 83,805 nos. of plants have been planted in the vacant areas in the project. Total 34,840 numbers of sapling have been planted till Sept2024 and total 83,805 nos.



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	ha of surface water reservoir and an area of 83.74 ha undisturbed shall be developed into green belt within the first 3 years.	of plants have been planted and 10,700 sapling distributed in the peripheral areas since inception of the mine.
		17091 nos. of saplings planted inside the ML over an area of 9.5 Ha and 66914 nos. of saplings planted outside the ML over an area of 66.48 Ha.
		Within ML, available spaces for Plantation are limited as the reclamation can only be done in the decoaled areas and over inpit dumps after attaining the final heights.
		So, plantation have been carried out at available vacant spaces where mining operations are not carried out.
		Outside ML, plantation was to be done over the external over dump area after the dump achieves final height.
		Currently, the dump is active and over the rest of the areas which presently comprises of CHP, MGR, Silo, other infrastructure along with densely vegetated undisturbed areas.
		The plantation has been carried over available vacant spaces outside ML area including R and R Colony.
		Moreover, the plantation over the areas mentioned in the condition shall be developed with plantation progressively throughout the life of mines leading to final closure of mines.
(xxi)	A Project specific Wildlife Conservation Plan prepared for Rs 73 lakhs as capital costs and Rs.61 lakhs (annual) for the project for conservation of wild fauna including Elephant, Sloth Bear and a number of Schedule-II fauna found in the study area and for conservation of their habitat shall be implemented in consultation with the Forest and Wildlife Departments of the State Government. The Plan shall include creation of a passageway (undisturbed area through the block	implementation. Copy of the SSWCP approval letter & deposise slip is attached as Annexure-XI . Funds for implementation of the same in the buffer zone by the State Forest Departmentation have already been deposited in Ad-hor

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Rs.4,49,70,000/-.

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	which may venture into the coal mine areas) at all stages of the mine operation in conjunction with the neighboring mines which come up in the area to allow movement of these fauna through the project area. The passageway shall be forested with species from the natural habitat to provide connectivity to enable them to reach the neighboring forests unhindered. Solar fencing would be done along the quarry which would be shifted as the mine develops. Grasslands shall be developed as part of Habitat Restoration in the study area and tree and plant species such as bamboo which constitute the natural diet of the elephants and plant species suitable for bears shall be developed as part of mine reclamation and eco-regeneration of the study area regularly visited by the elephants. At the post mining stage, the mine shall be restored as a habitat for the wildlife found in the pre-mining stage. The WL Plan shall include the use of sirens to alert the animals during MGR movement, sensitizing the rail drivers and minimizing speed during such crossings shall also be implemented.	
(xxii)	The project authorities shall also participate in a Regional Conservation Plan as and when prepared in the future by the State Govt. for the conservation of flora-fauna found in the region as a whole.	Funds for the Regional Wildlife Conservation Plan have already been deposited in Ad-hoo CAMPA as per the revised rate fixed by the State Govt. @ Rs. 43,000/- per Ha for the total leasehold area vide UTR No. SBIN714073453867 dated 14/03/2014 for Rs.3,27,84,060/
		Copy of the RWCP approval letter & deposit acknowledgement is attached as Annexure-XII .
(xxiii)	The progress made on the implementation of the Wildlife Conservation Plan shall be monitored by the creation of a Committee which	Complied For third party monitoring of implementation of WL Conservation Plan; College of Forestry, OUAT, Bhubaneswar has been engaged.



ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
	includes experts in ecology and wildlife. The status of budgetary provision of capital and revenue expenditure on the various activities under the Project specific and Regional WL Conservation Plan and the status of the Plans shall be regularly reported to the MOEF RO, Bhubaneswar and also uploaded on the company website.	Dr Nirakar Bhol, I/C Head of the Department-cum-Principal Investigator of the Monitoring Project oversees the third-party monitoring. The 3 rd Six monthly report received from College of Forestry, OUAT, Bhubaneswar for the period Apr'2023 to Sep'2023 for the year 2023-24 is attached as Annexure-XIII .
(xxiv)	Third Party monitoring of implementation of WL Conservation Plan shall be carried out and for monitoring the utilization of funds earmarked for implementation of the WL Plan.	Being Complied For third party monitoring of implementation of WL Conservation Plan; College of Forestry, OUAT, Bhubaneswar has been engaged. Dr Nirakar Bhol, I/C Head of the Department-cum-Principal Investigator of the Monitoring Project oversees the third-party monitoring.
(xxv)	A detailed R&R Plan shall be formulated for the 417 PAPs and 309 homestead losers as per R&R Policy of the State Govt. and shall be completed within December 2014; R&R shall include specific income generation schemes, skill development and capacity building, etc. The details of status of implementation and expenditure on the various activities under the R&R Action Plan for the total budget of R&R shall be uploaded on the company website.	
(xxvi)	CSR Plan with a total budgetary provision of Rs 15.92 crores (capital) and 7.34 crore/annum recurring cost) shall be implemented for the life of the project. The details of village-wise	The budgetary provision of Rs. 15.92 crores (Capital) and 7.34 crore/ annum (recurring cost) pertains to the Environment

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ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
	activities undertaken for the amount of Rs 67.69 lakhs already spent on CSR shall be uploaded on the company website and further, details of villagewise activities for provision of Rs 30-40 Cr for CSR for the first 5 years and Rs5/T of coal as recurring expenditure shall also be provided in the annual report and the compliance report furnished to MOEF RO, Bhubaneswar.	Management Plan for the project and shall be implemented during mining operations for the life of the project. NTPC Dulanga Coal Mining Project has spent a total of approx. Rs 2.62 Lakhs under different heads like health, education, infrastructure, drinking water, capacity building / skill development during the period Apr 2024 to Sept 2024.
(xxvii)	A detailed R&R Plan shall be formulated in consultation with the various stakeholders as per prevalent R&R Policies and would cover R&R for individuals and for the displaced community as a whole.	R&R plan for the individuals and for the displaced community as a whole has been prepared in-line with the National R&R Policy & the OPRR Policy and the same has been duly approved of by the District Magistrate & Collector, Sundargarh. Copy of the R&R plan is attached as Annexure-XIV.
(xxviii)	Various activities under R&R Plan should be completed within time- schedule. The detailed R&R and CSR Action Plans be prepared and implemented.	Complied Detailed R&R plan has already been prepared, approved of and has been implemented.
(xxix)	An amount of 67.69 lakhs has been already spent on CSR and further, a provision of Rs 30-40 crores shall be earmarked for CSR for the first 5 years and 5/T of coal as recurring expenditure adjusted to the annual inflation rate.	Being Complied NTPC Dulanga Coal Mining Project has spent a total of approx. Rs 2.62 Lakhs under different heads like health, education, infrastructure, drinking water, capacity building / skill development during the period Apr 2024 to Sept 2024.
(xxx)	An amount of Rs.1592 lakhs (capital costs) and Rs.734 lakhs (recurring) costs earmarked for EMP shall be implemented and detail thereof furnished as part of the compliance report and also uploaded on the company website.	Agreed to Comply Amount earmarked for EMP are being utilized for implementation and being complied with.
(xxxi)	Coal transportation in pit: Rear Dumper, Surface to Siding through Conveyor belts and loading at siding by rail.	Complied Presently transportation is being done in rear dumpers from coal face to CHP – Hopper and wagon loading of coal through RLS.



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(xxxii)	The production shall be within the same Mining Lease area.	Being Complied
(xxxiii)	The OB shall be completely re- handled at the end of the mining.	Agreed to Comply The OB will be re-handled at the end of the mining as per the approved Mining Plan.
(xxxiv)	Final mine void depth will not be more than 40m. The void area will be converted into water body. The rest of the area will be back filled upto the ground level and covered with about a meter thick top soil and put to use.	Agreed to Comply Mining is being done as per the approved Mining Plan for the project. After completion of the mining the mine shall be closed as per the approved mine closure plan.
(xxxv)	Garland drains be provided.	Complied Garland drains having width and depth of 1.5m to 2.0m have been constructed along OB Dumps. All the garland drains are connected to settling pond before discharging the rainwater to Garia Nala. Details of the same is as under:
		 OB dump-1A: 2350 m OB dump-1B: 2920 m Khuntijharia OB dump: 2578 m Beldihi OB dump: 1120 m Up-side of the mine: 2350 m this prevents entry of outside storm water into the mine pit.
(xxxvi)	The land after mining shall be brought back for agriculture purpose.	Agreed to Comply After completion of the mining the mine shall be closed as per the approved mine closure plan.
(xxxvii)	Mine water should be treated for discharge into the lagoon. The quality of lagoon water shall be regularly monitored, and mitigation measures taken.	Presently, no Mine Water is being discharged in Jacons.
(xxxviii)	Everybody in the core area should be provided with mask for protection against fugitive dust emissions.	All the persons working in the dust prone area are being provided with dust mask for



अस्विम पट्टनायक / ARINDAM 154 र र र र र र वरिक प्रदेशक १००० (पर्वादाय करेड १/००/४० दुलंडा सी १५००) एनसेची, विकि

ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
		protection against fugitive dust emissions as a part of PPE during mining operations.
(xxxix)	Dust mask to be provided to everyone working in the mining area.	Complied
		All the persons working in the dust prone area are being provided with dust mask fo protection against fugitive dust emissions as a part of PPE during mining operations.
(xl)	The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.	Complied All the persons working in the dust prone area are being provided with dust mask for protection against fugitive dust emissions as a part of PPE during mining operations.
		Ensuring the use of dust mask by the worken's has been made part of duty of the supervisory staffs.
(xli)	People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.	Complied All the personnel engaged in mining are tested under Occupational Health Checkup. Further, periodical health checkups are done for identification of lungs diseases through Chest X – Ray. All Test Reports are available at site.
(xlii)	The mining area should be grounded by green belt having thick closed thick canopy of the tree cover.	Complied Plantation of trees having thick canopy have been done in the safety zone of the Dulanga Coal mining project Photographs of Safety Zone Gap Plantation along with Fencing is attached as
(xliii)		Annexure-XV.
(Valley)	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation.	Being Complied The Diversion of Garia Nala has been completed. However, embankment works are in progress. The Nalla has taken its natural course. The embankment is designed taking into account the highest flood level and approved by the Water Resource Department, Govt. of Odisha.



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(xliv)	There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.	Agreed to Comply No Surface runoff from OB Stacks /dump being discharged into any nearby agricultural fields. Plantation work has been taken up in the area between the nallah and the project.
(xlv)	OB shall be stacked at one earmarked external OB dumpsite(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forest and its concerned Regional office on yearly basis.	Agreed to Comply Only one external dump has been formed. Presently dumping of the OB is going on in the external OB Dump. The ultimate height of the external OB shall be maintained as per the approval. And the ultimate slope angle of the OB dump shall be maintained as 28 deg.
(xlvi)	Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper setting of silt material.	Complied As per the stipulation, Garland drains (size, gradient and length) and sump capacity have been designed keeping 50% adjoining the mine site. Dimensions vary from 2m to 4m with the gradient of 1:30. Sump capacity has been provided with adequate retention period to allow proper settling of silt materials.
(xlvii)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Agreed to Comply Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation will be designed based on the rainfall data of the area. Construction of retaining wall will be carried out once we reach the optimum height and area section wise.
(xlviii)	Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, आरंदम पट्नायक / ARINDAM PATTNAIK	CHP of capacity 1325 tph is constructed and operational with inbuilt mist type dust suppression system in conveyors.



ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
	conveyor system, haulage roads, transfer points, etc.	provided to check fugitive emissions from crushing operations, haulage roads, transfe points, etc.
		Photographs attached as Annexure-XVI.
(xlix)	Drills shall be wet operated.	Complied
		Wet operated drills are being used during drilling operation.
(1)	The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A3tier green belt comprising of a mix of native species shall be developed all along the major approach roads.	Complied Coal transportation to Darlipalli Super Thermal Power Plant is being done through MGR with wagon loading by Silo. Also, avenue plantation has been taken up during the monsoon season along the roads constructed by NTPC – DLCMP.
(li)	Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to attest the fly rocks and boulders shall be implemented.	Complied Controlled blasting during daytime are practiced with the use of delay detonators. Further, Scientific study of controlled blasting designed by ISM, Dhanbad. Additionally, all stipulations made by DGMS to this effect is being duly adhered to. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders are being implemented. Ground vibrations due to blasting are also being monitored regularly.
(lii)	A Progressive Mine Closure Plan shall be implemented by reclamation and afforestation of 351.23 ha of the total quarry area of 567.19 ha by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. The balance 159.55 ha decoaled area being converted into a water reservoir of 45-50m depth at the post mining stage shall be gently sloped along the upper benches an stabilized and reclaimed with plantation	Agreed to Comply Mine Closure Plan has already been approved as a part of Mining Plan and it envisages the stipulations as made herein by the Ministry. Progressive Mine Closure Plan is being implemented and annual report in this regard is being submitted the Coal Controller of India, Kolkata. Copy of the annual mine closure report is attached as Annexure-XVII.



ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(liii)	area of 106.62 ha and of 60m height	Agreed to Comply Initially the external OB dump was planned in 106.62 ha area, but while granting the forest clearance, an area of 18.34 ha forest land and 2.95 ha of Govt land was excluded hence the present area for the external OB dump is reduced to 86 ha, accordingly only 28.5 mill.CuM shall be accommodated in the external OB dump. However, due to local law & order issues (i.e., resistance from the villagers for rehabilitation activities), the total proposed quantity i.e., 28.5 million Cu.M is unable to be accommodated in the external OB Dump.
		Till end of Sep-24, approx. 17.35 million CuM of OB is accommodated and the balance OB Quantity to be accommodated at the earliest. Presently dumping activities are being carried
		out at Khapurikachhar OB dump and In pil dump.
(liv)	The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.	Agreed to Comply Mine Closure Plan has already been approved as a part of Mining Plan and it envisages the stipulations as made herein by the Ministry.
		Progressive Mine Closure Plan is being implemented and annual report in this regard is being submitted the Coal Controller of India, Kolkata.
		Copy of the annual mine closure report is attached as Annexure-XVII .
(Iv)	Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out	as a part of Mining Plan and it envisages the stipulations as made herein by the Ministry.
	out	Progressive Mine Closure Plan is being implemented and annual report in this regard is being submitted the Coal Controller of India, Kolkata.
		Copy of the annual mine closure report i attached as Annexure-XVII .



अर्दियम पट्टनायक / ARINDAM PATTNAIK वरिष्ठ प्रबंधक / Sr. MAHAGER (पर्यावरण प्रबंधन) / ENVIRONMENT MANAGEMENT) दुलेगा सी.एम.पी./ DULANGA C M.P. एमटीपीसी लिमिटेड / NTPC LTD. सुंदरमङ् / SUNDARGARH

ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(Ivi)	The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.	Agreed to Comply Only one external OB dump has been made at DLCMP. Mining is being done as per the approved mining plan. For phasing out of the mining activity, Mine Closure Plan has already been prepared and approved by the MoC Same is under implementation.
(Ivii)	No groundwater shall be used for mining operations.	Rainwater collected into the mine sump and seepage water is being used for mining purposes. Ground water is being used only for potable use.
		NOC for abstraction of ground water has been obtained from the Central Ground Water Authority, New Delhi vide letter No. 21-4 (513)/ SER/ CGWA/ 2013-1982 dated 04 th Dec. 2017 and renewed vide NOC No. CGWA/ NOC/MIN/REN/2/2022/7124. Renewal application submitted to CGWA and is under consideration.
		Copy of the NOC application is attached as Annexure-XVIII.
(Iviii)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	Regular monitoring of groundwater level and quality is being carried out through NABL Accredited as well as OSPCB empaneled laboratory. The frequency of monitoring is as per the schedule mentioned. Record of Ground water level for the period Apr'24 to Sep'24 is attached as Annexure -XIX. The ground water quality report for the period Apr'24 to Sep'24 is annexed for your kind reference and necessary record. Annexure – IV.
(lix)	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in	Complied Water level is being monitored through network of borewells/wells) in core and buffer zone of DLCMP.



ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
	case the village wells go dry due to dewatering of mine.	Record of Ground water level for the period Oct'23 to Mar'24 is attached as Annexure -XIX.
		To augment the ground water in the area, rainwater harvesting structures have been constructed in the Vocational Training Centre & Coal Laboratory building and Pond construction activities in R&R Colony and Pond deepening activities have been undertaken in the nearby villagers as water conservation measures.
		Further, water tankers are also being deployed in nearby villages during summer season as a part of Community development activity.
(lx)	Sewage treatment plant shall be	Complied
	installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.	The township of NTPC Dulanga is integrated with NTPC Darlipalli and STP of 1200 KLD is provided in the integrated township.
		However, STP has been provided for NTPO administrative Office.
		For mines pit offices septic tank followed by soak pit have been provided.
		ETP having 50KLD capacity has been constructed and is being used for treatmen of Effluent water generated during vehicle washing.
		Inlet and outlet water samples of ETP is being monitored. All the parameters are under permissible limit. Copy of report for period Oct'23 to Mar'24 is annexed at Annexure XX.
(lxi)	Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialized agency/institution within the District/State and the results reported to this Ministry and to DGMS.	All the personnel engaged in mining ar tested under Occupational Health Checkup Further, periodical health checkups are don for identification of lungs diseases throug Chest X – Ray and hearing impairment, any, through a specialist in the field.



अर्दिम पहनायक / ARINDAM PATTNAIK यश्चित्र प्रबंदक / St. MANAGER (पर्वावरण प्रबंदक) / (ENVIRONMENT MAIR/ETPENT) दुलंगा सी.एम पी. / DULANGA C. M.P. एमटीपीसी लिकिटेड / NTPC LTO. संदरगढ / STINDARGARH

ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(Ixii)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its concerned Regional office.	Mining operation started in the month of February 2018. Copy of Notice of Opening of Mine submitted to DGMS, Dhanbad is attached as Annexure-XXI . Land use map for both core and buffer has been prepared on a scale of 1: 5000 based on Satellite Imagery path available in 2021 and was submitted with last half yearly compliance. Copy of Land Use Map is attached as Annexure-XXII . The next report is to be submitted in 2024 Preparation of the same is in progress by M/s Minegate India (Through MDO) and shall be
(lxiii)	A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & forests within 6 months of grant of Environmental	submitted in the 2nd HYC for the year 2024 25. Complied An ESCROW account for depositing of the Mine Closure cost have been opened for the DLCMP. Till date Rs 27.48 Cr. has been deposited in the ESCROW account.
	Clearance.	Detailed Final Mine Closure Plan have already submitted to the MoEF & CC vide our letter ref no: 0100/ DLCMP/FD/ES/ 02/ 0814 dated 25/08/2014.
		Copy of the approval of mine closure plan is attached as Annexure-XXIII .
(Ixiv)	The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.	Being Complied Various socio-economic and welfare measures are being undertaken as initial community development in consultation with the Panchayats of the local villages and administration and the same is being carried out accordingly. This practice shall be followed over the entire life of the mine.
(lxv)	The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.	Complied All the commitment made during Public Hearing have been implemented.



ECC No.	Specific EC Conditions	Compliance Status as on 30.09.2024
(lxvi)	Corporate Environment Responsibility:	Complied
	The Company shall have a well laid down Environment Policy approved by the Board of Directors.	The Corporate Environment Responsibility Policy of NTPC already exists and the same is also being revised from time to time.
	b. The Environment Policy shall prescribe for standard operating process/procedures to bring into	Recently Corporate Environment Policy has been revised in 2021 Copy of the said Policy has been attached as Annexure-XXIV .
	focus any infringements/ deviation/violation of the environmental or forest	Hierarchical System of the Environment Management Cell is given below: Chairman: Head of the Project
	c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished. d. To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	 Vice Chairman: Mine Agent Member Secretary: AGM (Env Mgmt) 2 nos. Advisors: Mining, Safety 3 nos. Members: Process Managers Convenor: Sr Manager (Env Mgmt) System of Reporting of Reporting of occurrence of any non-compliance of Econditions is as give below: Regular meeting of Environment Management Cell Discussion and review of action taken or

अरिंदम पट्टनायक / ARINDAM PATTNAIK वरिष्ठ प्रबंधक / Sr. MANAGER (पर्वादरण प्रबंधक) / (ENVIRONMENT MANAGEMENT) दुलंगा सी.एक.पी. / DULANGA C. M. P. एकटीपीसी लिमिटेड / NTPC LTD. सुंदरगढ़ / SUNDARGARH

ECC No.	General EC Conditions	Compliance Status as on 30.09.2024
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Agreed to Comply Necessary approval shall be obtained from the MoEF & CC for any changes in mining technology and scope of working.
(ii)	No change in the calendar plan of production for quantum of mineral coal shall be made.	Complied
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM2.5, SO2, and NOx monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni. Cd, Cr. etc. carried out at least once in six months.	Complied Six nos. of ambient air quality monitoring stations in the core zone and 04 nos. of stations in the buffer zone have been established in consultation with the Odisha State Pollution Control Board at different locations for monitoring of air quality parameters as mentioned such as PM ₁₀ , PM _{2.5} , SO ₂ , and NO _x . Heavy metals such as Hg, As, Ni, Cd and Cr. etc. are also carried out once in six months. The AAQ monitoring reports for the period from Apr'2024 to Sep'2024 is attached for your kind reference and necessary record. Annexure — XXV. Also 01 (One) No. Continuous Ambient Air Quality Monitoring Station has been installed at our site to monitor the air quality. Photograph has been attached as Annexure — XXVI.
(iv)	Data on ambient air quality (PM ₁₀ , PM _{2.5} , SO ₂ , and NO _x) and heavy metals such as Hg, As, Ni. Cd, Cr, and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	Monitoring is being carried out through NABL accredited laboratory and the monitoring reports are being submitted monthly to concerned Regional Office and to the State Pollution Control Board and along with compliance report biannually to IRO, MoEF&CC. The AAQ monitoring reports for the period from Oct'2023 to Mar'2024 are attached as Annexure – XXV.

ECC No.	General EC Conditions	Compliance Status as on 30.09.2024
(v)	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc. shall be provided with ear plugs/muffs.	Planned periodic maintenance of the equipment engaged in the mining is being done to prevent excessive noise. Adequate measures are taken for control of noise levels below 85 dBA in the work environment during the operation phase of mining block. Workers in high noise environment are also provided with ear plugs/muffs.
(vi)	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	Complied ETP having 50KLD capacity has been constructed and is being used for treatment of Effluent water generated during vehicle washing. Inlet and outlet water samples of ETP is being monitored. All the parameters are under permissible limit. Copy of report is annexed at Annexure-XX. The treated wastewater is being reused for vehicle washing. Photograph of ETP is attached as Annexure-XXVII.
(vii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Complied Regular pollution monitoring of all vehicle involved in the mining project are in practice to control emission during operation of the mine.
(viii)	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analyzed through a laboratory recognized under EPA Rules, 1986.	number and type of pollution monitoring

ECC No.	General EC Conditions	Compliance Status as on 30.09.2024
(ix)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Complied Protective respiratory devices are provided to the personnel working in dusty areas. They are provided with adequate training and information on safety & health aspects regularly.
(x)	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed, and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	Complied Initial medical examination of all the workers deployed in the mine has been taken and periodically health check-ups are being done. A schedule is prepared for implementation of Occupational Health Surveillance Program of workers to determine the impact due to exposure to dust and to take corrective measures for the same. Compliances regarding environment quality, health issues of outsourced manpower are taken care of during outsourcing.
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	Complied A separate Environmental Management Cell (EMC) under the control of senior executive who directly reports to the head of the company already exists for the project. EMC meetings are held regularly. Details of EMC is mentioned at ECC no. LXVI.
(xii)	The funds earmarked for environment protection measures shall be kept in separate account and shall not be diverted for other purpose. Year—wise expenditure shall be reported to this Ministry and its concerned Regional Office.	Agreed to Comply The requisite funds for environmental protection measures have been included in the project cost. Financial provision stipulated towards environment protection measures will not be diverted for other purpose. Year wise expenditure incurred on environment protection measures is attached as Annexure-XXVIII.
(xiii)	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven	Complied The advertisement was published in The Samaj (Kolkata, Baleswar, Brahmapur, Vishakapatnam, Sambalpur,



अरिंदम पट्टनापक / ARINDAM PATTNAIK वरिष्ठ प्रवेषक / St. MANAGER (पर्वावरण प्रवेषन) / IENVIRONMEN (पर्वावरण) / IENVIRONMEN (पर्वावरण) / IENVIRONMEN (पर्वावरण) / IENVIRONMEN (URL) / IE

ECC No.	General EC Conditions	Compliance Status as on 30.09.2024
	days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.	Bhubaneswar, Cuttack, Rourkela) on 08.03.2014. A copy of the same is attached as Annexure-XXIX.
(xiv)	A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.	Complied Copy of EC is uploaded in the company website.
(xv)	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office. District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.	
(xvi)	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance condition shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM ₁₀ , PM _{2.5} , SO ₂ , and NO _x (ambient) and critical sectorial parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	The clearance letter has been uploaded on the company's website. The monitoring data of the stipulated environmental quality parameters being displayed at the entrance of the mine office. The photograph of display has been attached as Annexure-XXX . The compliance status has been uploaded on the NTPC website.

अर्दिम पृष्टुनायक / ARINDAM PATTNAIK
वरिष्ठ प्रजेयक / St. MANAGER
(पर्वावरण प्रजेयन) / (ENVIRONMENT MANAGEMENT)
दुलंगा सी.एम.पी./ DULANGA G. M. स.
एमधीपीसी लिमिटेड / NTPG LTD
सुंदरगढ़ / SUNDARGARH

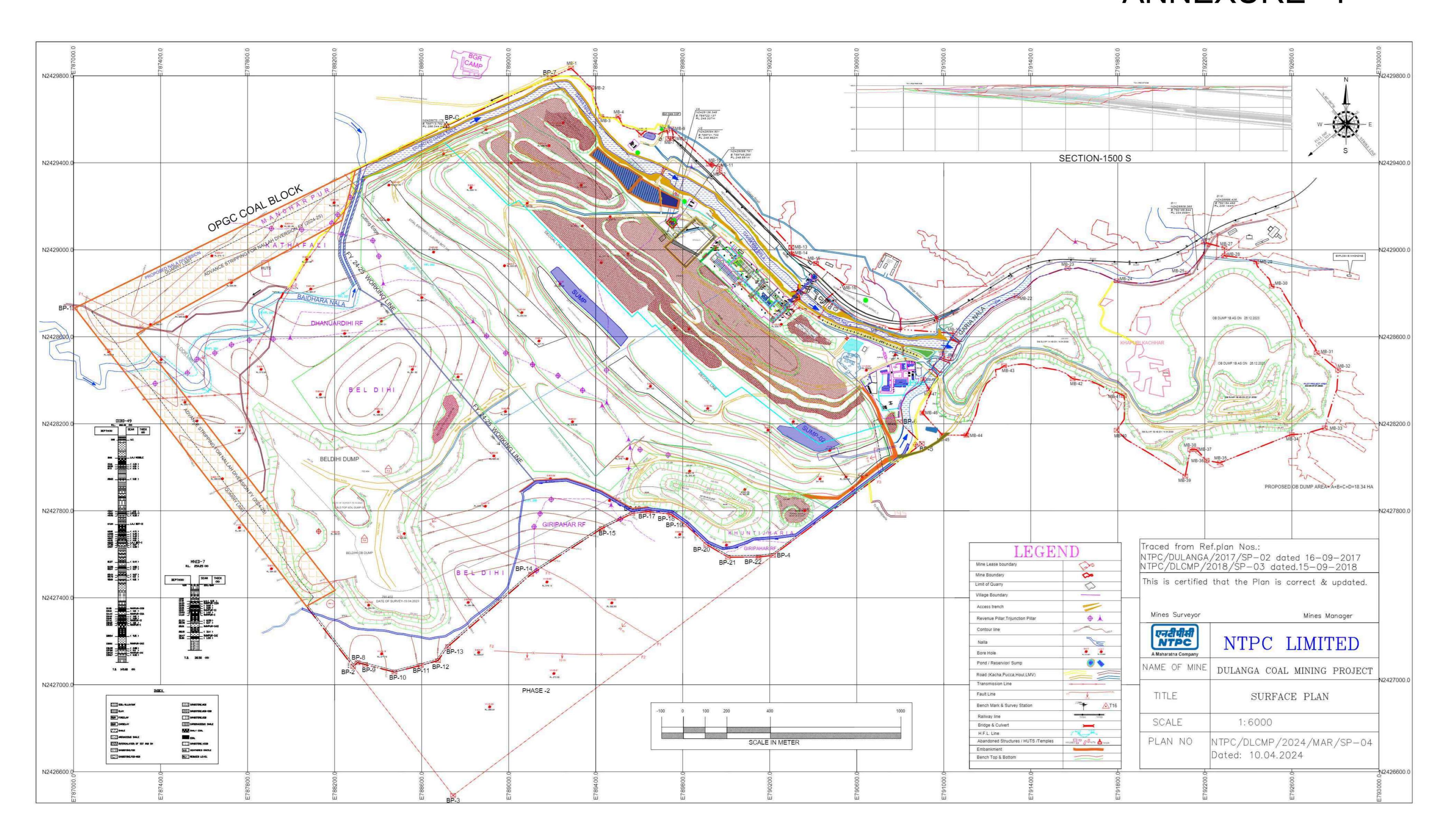
ECC No.	General EC Conditions	Compliance Status as on 30.09.2024
(xvii)	The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Offices of CPCB and the SPCB.	Complied Six-monthly progress reports are being submitted regularly. The last Six-monthly progress reports for the period Oct'2023 to Mar'2024 was submitted on 06.06.2024.
(xviii)	The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information /monitoring reports.	Noted and agreed
(xix)	The Environmental statement for each financial year ending 31 March in Form-V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Office of the MoEF by e-mail.	Complied The Environmental Statement for each financial year ending 31st March are being submitted to the Odisha State Pollution Control Board and Regional Office of MoEF & CC in prescribed Form-V and the same is also being uploaded on NTPC website. Last submission was made for FY 2023-24 on 27.09.2024. Copy of the same has been uploaded on NTPC website.
5.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	Complied
6.	The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.	Noted and agreed All necessary clearances/approvals that are required for the project are obtained. We abide by the further condition for environmental protection issued by the Ministry or any other competent authority.
7.	The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.	Complied Environment Audit Cell is in place for the same.

ECC No.	General EC Conditions	Compliance Status as on 30.09.2024
8.	The Ministry or any other competent authority may stipulate any further condition for environmental protection.	Noted and agreed Agreed to Comply any additional condition stipulated by the Ministry or any other competent authority.
9.	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environmental (Protection) Act, 1986.	Noted and agreed
10.	The above conditions will 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 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.	

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ANNEXURE - I



ANNEXURE - II

Avenue Plantation



Plantation in Infra Office







Vacant Area Plantation



Plantation Near View Point







Plantation along MGR



Sapling Distribution







Government of Odisha Department of Water Resources

Odisha - AGM (Mining)
er Resources - Dam (TS)
Date: 23/8/2021

WR-MAJII-WRC-0009/2016 (OSWAS) Irr.-II-WRC-161/21 (Physical)

From

Ms Archana Patnaik, IAS, Special Secretary to Government.

To

The General Manager, M/s NTPC Ltd., Dulunga Coal Mining Project, 2nd Floor, Megha Mallahar, Mission Road, Sundargarh.

Permission for diversion of Garia Nalla and its tributaries (Baidhar Nallah and Nallah -B) flowing within the coal block boundary of Dulunga Coal Mining Project allotted to NTPC Ltd.

Sir,

In inviting reference to your Correspondence No-0100/ NTPC/DLCMP/MDO/2017/17 dated 05.04,2017 on the subject noted above I am directed to say that Government in Water Resources Department have been pleased to accord permission in favour of your industry for diversion of Garia Nalla and its tributaries (Baidhar Nallah and Nallah -B) flowing within the coal block boundary of Dulunga Coal Mining Project allotted to NTPC Ltd. with the following terms & conditions:-

Terms & Conditions:-

- 1. NTPC shall divert the Garia Nalla and its tributaries (Baidhar Nallah and Nala -B) in accordance with the provisions made in the mining plan of Dulanga Coal Block which has been approved by Ministry of Coal, Government of India and as per the condition(s) stipulated in the Environment clearance granted for Dulanga Coal Block by MOEF&CC.
- 2. NTPC shall divert the Garia Nalla and its tributaries namely Baidhar Nallah and Nala -B within the land under their possession on its own cost. All direct or indirect and annual expenditure on maintenance of the above said nallahs shall be borne by NTPC.
- 3. Any adverse impact noticed due to the diversion must be set right by NTPC at its own cost.
- The gradient of the original nallah shall be maintained in the proposed diverted route by NTPC.
- 5. The regime channel section shall be maintained in the proposed diversion alignment by NTPC. Smooth transition shall be provided between diversion and original nallah section by NTPC.

P.T.O.



- Safe distance shall be maintained by NTPC from the diversion channel to the mining operation boundary for safety point of view following Govt. norms.
- NTPC shall ensure that riparian rights of the people residing in the downstream area shall not be affected upon diversion of Garia Natlah and its tributaries namely Baidhar Nallah and Nallah -B.
- 8. The water quality shall be maintained in the nallah by NTPC to ensure the protection of the riparian right of people living in the d/s of the diversion channel. NTPC shall not discharge/dispose any untreated and contaminated waste material into the nallahs so that the flora and fauna will be in peril.
- Ecological and environmental damages, if any, arising during and after diversion of nallahs shall
 be the sole responsibility of NTPC for which they shall be treated as per law. NTPC shall have
 to obtain permission or clearance from Competent Authorities on ecology, environment and
 forest aspects as necessary.
- 10. The diverted nallahs shall be treated as public property.
- Any construction activities /interference should be consistent with the hydraulic compulsions and structural safety standards.
- 12. NTPC shall ensure that diversion portion of nallah is adequate to carry design flood discharge. In case of failure, change of path of nallahs is noticed after diversion, NTPC is liable for reconstruction at their cost and pay compensation if damages occur to public/private properties.
- 13. Necessary safety arrangement shall be the responsibility of NTPC while executing the diversion work of nallahs. The Company shall have to provide barricading, display boards and other necessary caution boards while executing the work.
- 14. Cutting of any tree or removal of any utility services along the proposed diversion alignment if required, NTPC shall have to obtain clearances from concerned approving authorities.
- 15. NTPC shall procure insurance from reputed insurance Company against damages during execution. In case of damage caused to any assets due to diversion of nallahs, DoWR shall not be accountable or liable in any manner whatsoever.
- NTPC shall intimate Revenue official's viz. Tahasildar & Collector of the district regarding such diversion in order to incorporate it in the cadastral map & ROR.
 - DoWR shall reserve the right to review/modify/revoke the permission in case of violation of terms and conditions of the permission.
 - NTPC shall construct peripheral drains for discharge of flood water of the catchments s Mining Lease area if required.
 - 19. The diverted nallahs are to be properly fenced and protected against accidents.
 - The interest of the local villagers is to be suitably addressed in the event of diversion.



- NTPC shall make necessary arrangement so that seepage water from diverted Nallah shall not enter into the mining area.
- 22. The work should be executed in accordance with the Codal Provision with the overall objective of environmental safeguards. Latest codal provision and National/International best practices must be followed. DoWR shall not be responsible for any breach of the safeguards.
- 23. DoWR shall have the right to order such works as may be necessary to maintain the integrity of the nallahs at any time during or after the execution not covered in approved scheme. NTPC shall be bound to execute the same as per instruction of DoWR at their own cost.

		Tours faithfully
Memo No. 2175 Copy forwarded to) AVR. Dtd. 7 2.	Special Secretary H. Chvernment
Copy forwarded to	the FIC Odiebe Dt. d.	19/201
CE Designs, Bhubaneswar		10 majody
W- N 2/252	2 21-	, Under Secretary to Government
Memo No. 71 65	_/WR, Dtd/2/2/	Under Secretary to Government
Copy forwarded to Indus	tries Department / Steel &	Mines Department/ IPICOL / IDCO for
information and necessary	action.	
		for entered
		Under Secretary to Government
Copy forwarded to Colle	ctor & District Magistrate,	Sundargarh for information and necessary
action.		Alan 23/00/20 21
Memo No. 21 254	_/WR, Dtd. 23/8/2	Under Secretary to Government
Copy forwarded to Exc	ecutive Engineer, Sundarg	arh Irrigation Division, Sundargarh for
information and necessary	action.	
		Daniel od son
		Under Secretary to Government



(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

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/-Waste-Water)

Pg No: 1 of 1

TC-7440

Date: 27 Apr 2024

Name and Address of the Customer

Date of Sampling Sample Collected by

ULR-TC744024000000239F

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample Type of Container Weather Condition

Atmospheric Temperature

Sample ID. No. 1. ERSIPL/WA/294 Test Report No: ERSIPL/TR/WA/120

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

: 12.04.2024

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

Representative of the Customer.

: 17.04.2024 : 17.04.2024 : 25.04.2024

As per Applicable Test Method

3 ltrs

Glass Bottle, HDPE Bottle

Scattered Clouds

: 28 °C

Locations

1. Tap water inside NTPC site office

TEST FINDINGS:

					Result
SI	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	ERSIPL/ WA/294
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022		6.5 to 8.5	7.11
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.34
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	128.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	26.61
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	249.3
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	28.06
08	Sulphate as SO₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	21.42
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	130.0

Note-

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- 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)

(Authorized Signatory)





Environmental Research and Services (India) Pvt. Ltd.

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Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 2

Date: 27 Apr 2024

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Test Report No: ERSIPL/TR/WA/T-120

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

R K Jena, Field Supervisor ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Collected in presence of Sample Received on

Analysis Started on Analysis Completed on

17.04.2024 17.04.2024 : 25.04.2024

12.04.2024

Method of Sampling Quantity of Sample

: As per Applicable Test Method

: 3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 28°C

6

Sample ID. No.

1. ERSIPL/WA/294

Locations

1. Tap water inside NTPC site office

Si Parameters Analyzed			11.14	Permissible Limit	Result
		Test Method	Unit	as per 15:10500, 2012	ERSIPL/ WA/294
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0
02	Odour	IS 3025:Part 05:2018	en.	Agreeable (A)	А
03	Taste	IS 3025:Part 07,08: 1984 Reaffirmed-2017	-	Agreeable (A)	A
04	Nitrate as NO ₃	IS 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0
05	Residual Free Chlorine	15 3025:Part 26: 2021	mg/L	0.2 (min)	Nil
06	Copper	15 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND
07	Manganese	IS 3025: Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND
08	Phenolic Compound	15 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND
10	Cadmium	IS 3025:Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND





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Pg No: 2 of 2

					Pg
11	Selenium .	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND
12	Total Arsenic	IS 3025:Part 37: 2022	mg/L	0.01	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND
18	Polynuciear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND
20	Pesticides	Pesticides USEPA gas-liquid chromatography		-	ND
21	Aluminium	IS 3025:Rart 55: 2003 Reaffirmed-2019	mg/L	0.03	ND
22	Boron	15 3025:Part 57: 2021	mg/L	0.5	ND
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND

ND-Not Detected

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mariager



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ULR-TC7440240000000240F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 27 Apr 2024

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling Quantity of Sample

Type of Container

Weather Condition

Atmospheric Temperature

Sample ID. No.

1. ERSIPL/WA/295

2. ERSIPL/WA/296

3. ERSIPL/WA/297

4. ERSIPL/WA/298

Test Report No: ERSIPL/TR/WA/121

12.04.2024

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

Representative of the Customer.

17.04.2024

17.04.2024

25.04.2024

As per Applicable Test Method

: 3 ltrs

: Glass Bottle, HDPE Bottle

: Scattered Clouds

: 28°C

Locations

1. Tube Well, NTPC Dispensary, Villagae Bihajor

Open Well in Village Kanktora

3. Tube Well in Village Kalamegha

Open well in Village Kathfali

TEST FINDINGS:

				Permissible		Result				
SI	Parameters Analysed	Test Method	Unit	Limit as per 15:10500, 2012	ERSIPL/ WA/295	ERSIPL/ WA/296	ERSIPL/ WA/297	ERSIPL/ WA/298		
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	144	6.5 to 8.5	6.65	6.66	6.91	7.05		
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.37	0.32	0.48	0.31		
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	134.0	46,0	342.0	36.0		
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.06	0.07	0.08	0.08		
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	26.61	15.77	49.28	21.68		
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	331.8	89.7	535.6	65.9		
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	26.45	10.42	58.52	8.82		
08	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	30.37	4.10	25.60	6.34		
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1		
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Beaffirmed-2019	mg/L	200.0	36.0	62.0	272.0	44.0		

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Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste-Water)

Pg No: 1 of 2

Date: 27 Apr 2024

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling

Quantity of Sample

Type of Container

Weather Condition

Atmospheric Temperature

Test Report No: ERSIPL/TR/WA/T-121

: 12.04.2024

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

17.04.2024 17.04.2024 : 25.04.2024

: As per Applicable Test Method

: 28 °C

Glass Bottle, HDPE Bottle

: Scattered Clouds

Sample ID. No.

1. ERSIPL/WA/295

2. ERSIPL/WA/296

3. ERSIPL/WA/297 4. ERSIPL/WA/298

TEST FINDINGS:

Locations

Tube Well, NTPC Dispensary, Villagae Bihajor

2. Open Well in Village Kanktora

3. Tube Well in Village Kalamegha

4. Open well in Village Kathfali

	SI Parameters Test Method Unit	251 251 25 10	20.22	Permissible Limit as per		Re	sult	
SI		15:10500, 2012	ERSIPL/ WA/295	ERSIPL/ WA/296	ERSIPL/ WA/297	ERSIPL/ WA/298		
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0
02	Odour	IS 3025:Part 05:2018	1,000	Agreeable (A)	А	A	А	A
03	Taste	15:3025:Part 07,08: 1984 Reaffirmed-2017	i e	Agreeable (A)	A	А	А	А
04	Nitrate as NO ₃	(S 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0
05	Residual Free Chlorine	is 3025;Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil
06	Copper	IS 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
07	Manganese	IS 3025:Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND
08	Phenolic Compound	IS 3025:Part 43: 1992 Reaffirmed-2019	rng/L	0.001	ND	ND	ND	ND
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND







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Pg No: 2 of 2

							P.	, NO: 2
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
12	Total Arsenic	15 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part S2: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	***	ND	ND	ND	ND
21	Aluminium	IS 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	IS 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

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(Authorized Signatory) S.P.Pattanayak

Teon.Mar.ager



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ULR-TC744024000000241F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 27 Apr 2024

Test Report No: ERSIPL/TR/WA/122

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

: 12.04.2024

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on

17.04.2024

Analysis Started on Analysis Completed on 17.04.2024 25.04.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

Scattered Clouds

Atmospheric Temperature

: 28 °C

Sample ID. No.

Locations

1. ERSIPL/WA/299

Open well in Village Khuntjharia

ERSIPL/WA/300ERSIPL/WA/301

Bore well in Village Rengalmunra
 Open well in Village Bendrichua

4. ERSIPL/WA/302

4. Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

			79	Permissible		Res	sult	
SI	Parameters Analysed	Test Method	Unit	Limit as per 15:10500, 2012	ERSIPL/ WA/299	ERSIPL/ WA/300	ERSIPL/ WA/301	ERSIPL/ WA/302
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	1946	6.5 to 8.5	6.14	7.22	6.57	6.81
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.29	0.42	0.26	0.43
arian di Ameri	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	44.0	256.0	34.0	126.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07	0.08	0.07	0.07
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	21.68	61.10	22.67	15.77
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	199.8	672.9	71.2	359.4
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	10.42	46.49	8.82	24.85
08	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/t.	200.0	9.48	28.43	5.90	20.67
09	Fluoride	15 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1
10	Total Alkalinity as CaCO ₃	i5 3025:Part 23: 1986 Reaffirmed:2019	mg/L	200.0	38.0	310.0	46.0	152.0

Note-

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Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 2

Date: 27 Apr 2024

Test Report No: ERSIPL/TR/WA/T-122

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

: 12.04.2024

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on 17.04.2024 17.04.2024 25.04.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 28 °C Locations

Sample ID. No.

1. Open well in Village Khuntjharia

ERSIPL/WA/299
 ERSIPL/WA/300

2. Bore well in Village Rengalmunra

3. ERSIPL/WA/301

Open well in Village Bendrichua
 Bore Well R & R Colony, Kalamegha

4. ERSIPL/WA/302TEST FINDINGS:

	Parameters Analysed		Unit	Permissible Limit as per IS:10500, 2012	Result				
SI		Test Method			ERSIPL/ WA/299	ERSIPL/ WA/300	ERSIPL/ WA/301	ERSIPL/ WA/302	
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	IS 3025:Part 05:2018	100	Agreeable (A)	А	Α.	A	А	
03	03 Taste IS 3025:Part 07,08: 198 Reaffirmed-2017		144	Agreeable (A)	A	A	А	A	
04	Nitrate as NO ₃	15 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	IS 3075:Part 26: 2021		0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper IS 3025:Part 42: 1992 Reaffirmed-2019		mg/L	0.05	ND	ND	ND	ND	
07	Manganese IS 3025:Part 59: 2006 Reaffirmed-2022		mg/L	0.1	ND	ND	ND	ND	
08	Phenolic IS 302S:Part 43: 1992 Compound Reaffirmed-2019		mg/L	0.001	ND	ND	ND	ND	
09	Mercury	i5 3025:Part, 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025:Part 41: 1992	mg/L	0.003	ND	ND	ND	ND	





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							PE	No: 2
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
12	Total Arsenic	IS 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	АРНА 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L		ND	ND	ND	ND
21	Aluminium	IS 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	IS 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

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- 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) Pyt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager

.. END OF TEST REPORT



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

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ULR-TC744024000000300F

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/150

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on : 14.05.2024 : 14.05.2024

Analysis Completed on

: 21.05.2024

04.05:2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 38°C

Sample ID. No.

Locations

1. ERSIPL/WA/320

1. Tap water inside NTPC site office

TEST FINDINGS:

			-	Permissible Limit	Result
SI	Parameters Analysed	Test Method	Unit	as per IS:10500, 2012	ERSIPL/ WA/320
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	4. 4	6.5 to 8.5	7.08
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.09
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	136.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	80.0
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	30.55
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	251.7
07	Calcium as Ca	IS 3025:Purt 40: 1991 Reaffirmed-2019	mg/L	75.0	30.46
08	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	22.01
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	138.0

Note-

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- 2. Total Liability of ER5 (I) Pvt. Ltd. is limited to the Invoice Amount.
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- 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)

(Authorized Signatory) S.P.Pattanayak





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Test Report Format No.: ERSIPL/FM/40

Date.....

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 2

Date: 30 May 2024

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling

Quantity of Sample

Type of Container

Weather Condition

Atmospheric Temperature

Test Report No: ERSIPL/TR/WA/T-150

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

04.05.2024

: Representative of the Customer.

: 14.05.2024 : 14.05.2024

: 21.05.2024

: As per Applicable Test Method

: Glass Bottle, HDPE Bottle

: Scattered Clouds

: 38 °C

Sample ID. No.

1. ERSIPL/WA/320

Locations

1. Tap water inside NTPC site office

	Parameters			Permissible Limit	Result	
SI	Analyzed	Test Method	Unit	as per IS:10500, - 2012	ERSIPL/ WA/320	
01	Colour	IS 302S:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	
02	Odour	IS 3025:Part 05:2018	***	Agreeable (A)	A	
03	Taste	is 3025:Part 07,08: 1984 Reaffirmed-2017	-	Agrecable (A)	A	
04	Nitrate as NO ₃	IS 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	
05	Residual Free Chlorine	is 3025.Part 26: 2021	mg/L	0.2 (min)	Nil	
06	Copper	15 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	
07	Manganese	IS 3025:Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	
08	Phenolic Compound	IS 3025 Pwrt 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	





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Date.....

Pg No: 2 of 2

					- 0
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND
12	Total Arsenic	IS 3025 Part 37: 2022	mg/L	0.01	ND
13	Cyanide	is 3025-Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND
14	Lead	i5 3025-Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND
15	Zinc	IS 3025-Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND
19	Mineral Oil	15 3025 Part 39: 2021	mg/l.	0.5	ND
20	Pesticides	USEPA gas liquid chromatography	mg/L		ND
21	Aluminium	15 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND
22	Boron	IS 3025:Part 57: 2021	mg/L	0.5	ND
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND

ND-Not Detected

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Teun.Mar.ager



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ULR-TC744024000000301F

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/151

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

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

: Representative of the Customer.

04.05.2024

14.05.2024

Sample Collected in presence of Sample Received on

Analysis Started on

: 14.05.2024 : 21.05.2024

Analysis Completed on Method of Sampling

As per Applicable Test Method

Quantity of Sample

: 3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

Scattered Clouds

Atmospheric Temperature

: 38 °C

Sample ID. No.

1. ERSIPL/WA/321

2 EDGIDI /A/A/322

ERSIPL/WA/322
 ERSIPL/WA/323

4. ERSIPL/WA/324

Locations

1. Tube Well, NTPC Dispensary, Villagae Bihajor

2. Open Well in Village Kanktora

3. Tube Well in Village Kalamegha

4. Open well in Village Kathfali

TEST FINDINGS:

		Test Method	Unit	Permissible Limit as per 15:10500, 2012	Result				
SI	Parameters Analysed				ERSIPL/ WA/321	ERSIPL/ WA/322	ERSIPL/ WA/323	ERSIPL/ WA/324	
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	-	6.5 to 8.5	6.71	6.73	6.95	7.02	
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.35	0.33	0.51	0.30	
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	140.0	56.0	336.0	42.0	
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.06	0.08	0.07	0.08	
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	29.57	19.71	47.30	24.64	
06	Total Dissolved Solids	15 3025:Part 16: 2023	mg/L	500.0	327.6	87.9	529.4	63.9	
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	28.06	13.63	57.72	10.42	
80	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	29.93	4.70	26.04	6.49	
09	Fluoride	15 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1	
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	42.0	70.0	266.0	50.0	

Note-

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(Authorized Signatory)





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Test Report Format No.: ERSIPL/FM/40

Date.....

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 2

Date: 30 May 2024

Name and Address of the Customer

Date of Sampling Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Type of Container Weather Condition

Atmospheric Temperature

Sample ID. No.

1. ERSIPL/WA/321

ERSIPL/WA/322
 ERSIPL/WA/323

4. ERSIPL/WA/324

At Parish Paris

Test Report No: ERSIPL/TR/WA/T-151

: Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

: 04.05.2024

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

Representative of the Customer.

: 14.05.2024 : 14.05.2024 : 21.05.2024

: As per Applicable Test Method

2.1

: Glass Bottle, HDPE Bottle

: Scattered Clouds

: 38°C

Locations

1. Tube Well, NTPC Dispensary, Villagae Bihajor

2. Open Well in Village Kanktora

Tube Well in Village Kalamegha

4. Open well in Village Kathfali

	Parameters	B 50 E E E E E E E E E E E E E E E E E E		Permissible Limit as per IS:10500, 2012	Result				
SI	Analysed	Test Method	Unit		ERSIPL/ WA/321	ERSIPL/ WA/322	ERSIPL/ WA/323	ERSIPL/ WA/324	
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	IS 3025-Part 05:2018	(44)	Agreeable (A)	A	Ä	A	A	
03	Taste	IS 3025:Part 07,08: 1984 Reaffirmed-2017	3	Agreeable (A)	А	A	Α	A	
04	Nitrate as NO ₃	IS 3025-Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	15 3025 Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper	IS 3025 Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	IS 3025-Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND	
08	Phenolic Compound	IS 3025 Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury	IS 3025-Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025:Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND.	ND	ND	





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Ref. No.

Date...pg No: 2-of 2----

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11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
12	Total Arsenic	IS 3025-Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025 Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025 Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025 Part 39: 2021	mg/L	0.5	ND	ND	NO	ND
20	Pesticides	USEPA gas liquid chromatography	mg/L	966	ND	ND	ND	ND
21	Aluminium	IS 3025-Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	IS 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	IS 3025-Part 54: 2003 Reaffirmed-2019	mg/t	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

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(Authorized Signatory) S.P.Pattanayak Tech.Mar.ager



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ULR-TC744024000000302F

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/152

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

: 04.05.2024

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on
Analysis Started on
Analysis Completed on
Method of Sampling

: 14.05.2024 : 14.05.2024

Method of Sampling

21.05.2024

Quantity of Sample

: As per Applicable Test Method

Type of Container

3 ltrs

Type of Container Weather Condition Glass Bottle, HDPE Bottle

Weather Condition

: Scattered Clouds

Atmospheric Temperature

: 38 °C

Sample ID. No.

Locations

1. ERSIPL/WA/325 2. ERSIPL/WA/326 Open well in Village Khuntjharia
 Bore well in Village Rengalmunra

3. ERSIPL/WA/327

3. Open well in Village Bendrichua

4. ERSIPL/WA/328

4. Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

				Permissible	Result				
SI	Parameters Analysed	Test Method	Unit	Limit as per IS:10500, 2012	ERSIPL/ WA/325	ERSIPL/ WA/326	ERSIPL/ WA/327	ERSIPL/ WA/328	
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	(Art)	6.5 to 8.5	6.19	7.32	6.65	6.89	
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.27	0.48	0.29	0.44	
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	52.0	248.0	36.0	132.0	
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.08	0.07	80.0	0.08	
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	25.62	59.13	23.65	18.72	
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	201.4	669.3	72.8	354.8	
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	12.83	44.09	9.62	28.06	
08	Sulphate as SO ₄	iS 3025 (Part 24/5ec 1) : 2022	mg/L	200.0	9.03	27.59	6.19	21.12	
09	Fluoride	15 3025 Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1	
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Iteaffirmed-2019	mg/L	200.0	46.0	304.0	48.0	158.0	

Note-

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Test Report Format No.: ERSIPL/FM/40

Date.

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 2

Date: 30 May 2024

Test Report No: ERSIPL/TR/WA/T-152

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling Sample Collected by : 04.05.2024

Sample Collected in presence of

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

Sample Received on

: Representative of the Customer.

Analysis Started on Analysis Completed on : 14.05.2024 : 14.05.2024

Method of Sampling Quantity of Sample

: 21.05.2024 : As per Applicable Test Method

Type of Container

Weather Condition

: Glass Bottle, HDPE Bottle : Scattered Clouds

Atmospheric Temperature

: 38 °C

Sample ID. No.

- Locations 1. Open well in Village Khuntjharia ERSIPL/WA/325
- 2. ERSIPL/WA/326
- 2. Bore well in Village Rengalmunra
- ERSIPL/WA/327
- 3. Open well in Village Bendrichua

4. ERSIPL/WA/328

4. Bore Well R & R Colony, Kalamegha TEST FINDINGS:

	Parameters		121.50.5425	Permissible Limit as per X:10500, 2012	Result				
SI	Analysed	Test Method	Unit		ERSIPL/ WA/325	ERSIPL/ WA/326	ERSIPL/ WA/327	ERSIPL/ WA/328	
01	Colour	15 3025 Part 04: 1983 Reaffirmed 2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	IS 3025: Part 05:2018		Agreeable (A)	A	A	А	А	
03	Taste	IS 3025: Part 07,08: 1984 Reaffirmed-2017	*	Agreeable (A)	A	A	А	А	
04	Nitrate as NO ₃	is 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	i5 3025 Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper	IS 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	IS 3025 Part 59: 2006 Reaffirmed-2022	mg/t	0.1	ND	ND	ND	ND	
08	Phenolic Compound	i5 3025 Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury	IS 3025-Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	15 3025:Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND	ND	ND	





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Ref. No.

Date...pg No: 2-of-2----

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11	Selenium	IS 3025-Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
12	Total Arsenic	IS 3025 Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	15 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025 Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	(\$ 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	-	ND	ND	ND	ND
21	Aluminium	IS 3025-Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	IS 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

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(Authorized Signatory) S.P.Pattaneyak Teun.Mar.ager



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ULR-TC744024000000357F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 01 July 2024

Test Report No: ERSIPL/TR/WA/179

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on

18.06.2024 18.06.2024

11.06.2024

Analysis Completed on

26.06.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition

Sunny 39 °C

Atmospheric Temperature

Locations

Sample ID. No. 1. ERSIPL/WA/402

1. Tap water inside NTPC site office

TEST FINDINGS:

				Permissible Limit	Result	
SI	Parameters Analysed	Test Method	Unit	as per i5:10500, 2012	ERSIPL/ WA/40	
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	9.00	6.5 to 8.5	7.11	
02	Turbidity	IS 3025;Part 10; 2023	NTU	1.0	0.43	
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	138.0	
04	Total Iron	(\$ 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.08	
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	31.54	
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	249.3	
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	31.26	
80	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	22.61	
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	140.0	

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 Pvr. Ltd.





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Ref. No.

Test Report Format No.: ERSIPL/FM/40
TEST REPORT (Water/ Waste Water)

Date.....

Pg No: 1 of 2

Date: 01 July 2024

Name and Address of the Customer

Test Report No: ERSIPL/TR/WA/T-179

: Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

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

Sample Collected in presence of

: Representative of the Customer.

Sample Received on Analysis Started on : 18.06.2024 : 18.06.2024 : 26.06.2024

11.06.2024

Analysis Completed on Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature : Sunny : 39 °C

Sample ID. No.

1. ERSIPL/WA/402

Locations

1. Tap water inside NTPC site office

20	Parameters		9.	Permissible Limit	Result
SI	Analyzed	Test Method	Unit	as per i5:10500, - 2012	ERSIPL/ WA/402
01	Colour	IS 3025: Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0
02	Odaur	IS 3025:Part 05:2018	::	Agreeable (A)	A
03	Taste 15 3025 Part 07.08: 1984 — Agreeable (A)		A		
04	Nitrate as NO ₃	IS 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0
05	Residual Free Chlorine	IS 3025-Part 26: 2021	mg/L	0.2 (min)	Nil
06	Copper	IS 3025:Part 42: 1992 Reaffirmed-2019	mg/t	0.05	ND
07	Manganese	IS 3025:Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND
80	Phenolic Compound	135 3025 Part 43: 1992 Weathirmed-2019 /mg/L D.DD1		0.001	ND
09	Mercury	IS 3025-Pare 48: 1994		0.001	NO
10	Cadmium	75 3025-Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND





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Re	f. N	O.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

Date.....

Pg No: 2 of 2

					1.8
11	Selenium	IS 3025 Part 56: 2003 Reaffirmed-2019	mg/l,	0.01	ND
12	Total Arsenic	IS 3025:Part 37: 2022	mg/L	0.01	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/l.	0.05	ND
14	Lead	IS 3025;Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND
18	Polynuclear aromatic hydrocarbons	АРНА 6440	mg/L	0.0001	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	_	ND
21	Aluminium	rs 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND
22	Boron	IS 3025-Part 57: 2021	mg/L	0.5	ND
23	Nickel	IS 3025-Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND

ND-Not Detected

Note-

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



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ULR-TC7440240000000358F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 01 July 2024

Name and Address of the Customer

Date of Sampling Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Type of Container

Weather Condition Atmospheric Temperature

Sample ID. No.

1. ERSIPL/WA/403 2. ERSIPL/WA/404 3. ERSIPL/WA/405

4. ERSIPL/WA/406

Test Report No: ERSIPL/TR/WA/180

: Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

: 11.06.2024

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

Representative of the Customer.

: 18.06.2024 : 18.06.2024 : 26.06.2024

: As per Applicable Test Method

3 ltrs

Glass Bottle, HDPE Bottle

: Sunny : 39 °C

Locations

1. Tube Well, NTPC Dispensary, Village Bihajor

Open Well in Village Kanktora

Tube Well in Village Kalamegha
 Open well in Village Kathfali

TEST FINDINGS:

	Parameters Analysed	Test Method		Permissible		Re	sult	
SI			Unit	Limit as per 15:30500, 2012	ERSIPL/ WA/403	ERSIPL/ WA/404	ERSIPL/ WA/405	ERSIPL/ WA/406
01	pH value	15 3025:Part 11: 1983 Reaffirmed-2022	72	6.5 to 8.5	6.78	6.81	6.91	7.06
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.48	0.39	0.56	0.35
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	136.0	62.0	330.0	44.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07	0.07	0.08	0.07
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	28.58	21.68	45.33	25.62
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	324.8	89.7	526.9	66.5
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	27.25	15.23	56.11	11.22
08	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	30.97	5.75	26.79	8.13
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	42.0	74.0	262.0	52.0

Note

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Ref. No.	***************************************	
Aller Street or Street		

Date.....

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water)

Pg No: 1 of 2

Date: 01 July 2024

Test Report No: ERSIPL/TR/WA/T-180

Name and Address of the Customer

: Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

: 11.06.2024

Sample Collected by

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

Sample Collected in presence of

: Representative of the Customer.

Sample Received on

: 18.06.2024

Analysis Started on Analysis Completed on : 18.06.2024 : 26.06.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

: 3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

: Sunny : 39 °C

Atmospheric Temperature

Locations

Sample ID. No. 1. ERSIPL/WA/403

1. Tube Well, NTPC Dispensary, Village Bihajor

2. ERSIPL/WA/404

2. Open Well in Village Kanktora

3. ERSIPL/WA/405

Tube Well in Village Kalamegha
 Open well in Village Kathfali

4. ERSIPL/WA/406

	Parameters			Permissible Limit as per		Result				
SI	Analysed	Test Method	Unit	15:10500, 2012	ERSIPL/ WA/403	ERSIPL/ WA/404	ERSIPL/ WA/405	ERSIPL/ WA/406		
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0		
02	Odour	IS 3025:Part 05:2018	77	Agreeable (A)	Α	А	А	A		
03	Taste	IS 3025:Part 07,08: 1984 Reaffirmed-2017	201	Agreeable (A)	A	А	A	Ā		
04	Nitrate as NO ₃	IS 3025; Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0		
05	Residual Free Chlorine	IS 3025; Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	NII	NII		
06	Copper	IS 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND		
07	Manganese	IS 3025-Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND		
08	Phenolic Compound	IS 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND		
09	JE 2025 Gue 48: 1004		mg/L	0.001	ND	ND	ND	ND		
10	Cadmium	IS 3025:Part 41: 1992 Reaffirmed-2019	1/gm	0.003	ND	ND	ND	ND		





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Ref. No.

Date Pr No: 2 of 2

3-10	(ASILIEC/LOTE	IS 3025:Part 56: 2003		32000	N-15-	ARG	Dutenp	7.50
11	Selenium	Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
12	Total Arsenic	15 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	15 3025:Part 27: 1985 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025: Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	NE
16	Anionic detergents	IS 13428 2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
7	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	NE
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025 Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	7994	ND	ND	ND	NO
21	Aluminium	is 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
2	Boron	15 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	NE
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	NE

ND-Not Detected

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(Authorized Signatory) S.P.Pattanayak Teca.Mar.ager



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ULR-TC744024000000359F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 01 July 2024

Test Report No: ERSIPL/TR/WA/181

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

11.06.2024

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on 18.06.2024 18.06.2024

Method of Sampling

26.06.2024

As per Applicable Test Method

Quantity of Sample

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature

Sunny 39 °C

Sample ID. No.

Locations

- 1. ERSIPL/WA/407
- 2. ERSIPL/WA/408
- 3. ERSIPL/WA/409
- 4. ERSIPL/WA/410

- 1. Open well in Village Khuntjharia
- 2. Bore well in Village Rengalmunra
- 3. Open well in Village Bendrichua
- 4. Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

	Parameters Analysed		Unit	Permissible		Re	sult	
SI		Test Method		Emit as per 15:10500, 2012	ERSIPL/ WA/407	ERSIPL/ WA/408	ERSIPL/ WA/409	ERSIPL/ WA/410
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	396	6.5 to 8.5	6.24	7.38	6.74	6.92
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.36	0.51	0.25	0.48
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	56.0	254.0	38.0	136.0
04	Total Iron	IS 3025-Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.08	0.07	0.07	0.08
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	27.59	62.09	24.64	19.71
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	203.9	662.7	68.4	349.3
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	13.63	46.49	10.42	28.86
08	Sulphate as SO ₄	1S 3025 (Part 24/Sec 1) : 2022	mg/t.	200.0	9.48	28.58	5.90	21.72
09	Fluoride	is 3025 Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1
10	Total Alkalinity as CaCO ₃	IS 3025: Part 23: 1986 Reaffirmed 2019	mg/L	200.0	50.0	310.0	50.0	160.0

Note-

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Ref. No.

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water)

Date.

Pg No: 1 of 2

Date: 01 July 2024

Date of Sampling

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

11.06.2024

Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling Quantity of Sample

Type of Container

Weather Condition

Atmospheric Temperature

Sample ID. No.

 ERSIPL/WA/407 ERSIPL/WA/408 3. ERSIPL/WA/409

4. ERSIPL/WA/410

Test Report No: ERSIPL/TR/WA/T-181

Sundargarh district, Odisha.

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

Representative of the Customer.

: 18.06.2024 : 18.06.2024 : 26.06.2024

As per Applicable Test Method

Glass Bottle, HDPE Bottle

Sunny 39°C

Locations

- 1. Open well in Village Khuntjharia
- 2. Bore well in Village Rengalmunra
- 3. Open well in Village Bendrichua
- 4. Bore Well R & R Colony, Kalamegha

ci	Parameters Analysed	*********	ev.m	Permissible Limit as per	Result				
SI		Test Method	Unit	15:10500, 2012	ERSIPL/ WA/407	ERSIPL/ WA/408	ERSIPL/ WA/409	ERSIPL/ WA/410	
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	12 Odour 15 3025/Part 05:		5.00	Agreeable (A)	A	A	A	A	
03	Taste	IS 3025: Part 07,08: 1984 Reaffirmed-2017	24	Agreeable (A)	A	A	A	Α	
04	Nitrate as NO ₃	IS 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	IS 3025:Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper	IS 3025:Part 42: 1992 Heaffirmed-2019	mg/t.	0.05	ND	ND	ND	ND	
07	Manganese	15 3025:Part.59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND	
08	Phenolic Compound	is 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025-Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND	ND	ND	





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Ref. No.

Date PENO: 2 of 2

		1					Pi	No: 2
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/t.	0.01	ND	ND	ND	ND
12	Total Arsenic	15 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed 2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed:2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L		ND	ND	ND	ND
21	Aluminium	IS 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	IS 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	IS 3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

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(Authorized Signatory) S.P.Pattanayak Tech, Mariager



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ULR-TC7440240000000408F

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/205

Name and Address of the Customer :

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

: 09.07.2024

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Collected in presence of Sample Received on

16.07.2024

Analysis Started on

16.07.2024 26.07.2024

Analysis Completed on Method of Sampling

As per Applicable Test Method

Quantity of Sample

3 Itrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature

Sunny 33 °C

Sample ID. No.

33 °C

1. ERSIPL/WA/483

1. Tap water inside NTPC site office

TEST FINDINGS

	namanananah u o o	- Anna se		Permiscible Limit	Result
51	Parameters Analysed	Test Method	Unit	as per i5:10500, 2012	ERSIPL/ WA/483
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	100	6.5 to 8.5	7.08
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.47
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	146.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	35.48
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/t	500.0	247.48
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	33.67
08	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	21.42
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1
10	Total Alkalinity as CaCO _s	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	148.0

Note

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(Authorized Signatory) S.P.Pattanayak Tech.Mar.ager

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





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Re	f.	No.	
-	•		***************************************

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water) Date.

Pg No: 1 of 2

Date: 03 Aug 2024

Test Report No: ERSIPL/TR/WA/T-205

Name and Address of the Customer :

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.07.2024

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd.

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on

16.07.2024 16.07.2024

Analysis Completed on

26.07.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature Sunny 33 °C

Sample ID, No.

Locations

1. ERSIPL/WA/483

Tap water inside NTPC site office

SI	Parameters Analyzed	Test Method	Unit	Permissible Limit as por iS:10500,	Result	
		rest wethou	Onte	2012	ERSIPL/ WA/483	
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-7021	Hazen	5.0	<5.0	
02	Odour	15 3025:Part 05:2018	+	Agreeable (A)	A	
03	Taste	15 3025: Part 07,08: 1984 Reaffirmed-2017	+	Agreeable (A)	A	
04	Nitrate as NO ₃	IS 3025:Part 34: 1983 Reaffirmed-2019	me/t	45.0	<5.0	
05	Residual Free Chlorine	85 3025:Part 26: 2021	mg/L	0.2 (min)	Nil	
06	Copper	IS 3025:Part 42: 1992 Reaffirmed-2019	me/L	0.05	ND	
07	Manganese	(5 3025:Part 59: 2006 Reaffirmed-2022	rng/L	0.1	ND	
08	Phenolic Compound	IS 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	
10	Cadmium	IS 3025:Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	



Ref. No.



GSTIN: 21AAACE6224D1ZE

Date.

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	in one of "				Pg No
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND
12	Total Arsenic	IS 3025:Part 37: 2022	mg/L	0.01	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND
14	Lead	15 3025: Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND
15	Zinc	IS 3025;Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND
17	Total Chromium	15 3025:Purt 52: 2003 Reaffirmed-2019	mg/L	0.05	ND
18	Polynuclear aromatic hydrocarbons	APHA 5440	mg/L	0,0001	ND
19	Mineral Oil	IS 3025:Purt 39: 2021	mg/L	0.5	ND
20	Pesticides	LISEPA gas-liquid chromatography	mg/L	-	NĐ
21	Aluminium	IS 3025:Part 55: 2003	mg/L	0.03	ND

ND-Not Detected

Boron

Nickel

Note-

22

23

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Reaffirmed-2019

15-3025:Part 57: 2021

IS 3025:Part 54: 2003

Reaffirmed-2019

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mg/L

mg/L

mg/L

0.5

0.02

ND

ND

ND



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ULR-TC7440240000000409F

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/206

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.07.2024

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd.

Sample Collected in presence of Sample Received on Representative of the Customer. 16.07.2024

Analysis Started on Analysis Completed on

16.07.2024 26.07.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample : 3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature Sunny 33 °C

Sample ID, No.

Locations

1. ERSIPL/WA/484

1. Tube Well, NTPC Dispensary, Village Bihajor

2. ERSIPL/WA/485 3. ERSIPL/WA/486 Open Well in Village Kanktora
 Tube Well in Village Kalamegha

4. ERSIPL/WA/487

Open well in Village Kathfali

TEST FINDINGS:

	Parameters Analysed	Test Method	Unit	Permissible Limit as per 15:10500, 2012	Result				
51					ERSIPL/ WA/484	ERSIPL/ WA/485	ERSIPL/ WA/486	ERSIPL/ WA/487	
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	т	6.5 to 8.5	6.81	6.87	6.89	7.11	
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.51	0.43	0.53	0.34	
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	138.0	52.0	348.0	38.0	
04	Total Iron	15 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07	0.08	0.07	0.07	
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	29.57	16.75	48.29	21.68	
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	319.5	91.3	527.2	71.6	
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	28.06	12.02	60.12	8.82	
08	Sulphate as 50 ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	29.48	5.00	25.30	7.54	
09	Fluoride	15 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1	
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	44.0	62,0	284.0	42.0	

Note

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager

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





Pg No: 1 of 2

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Ref. No	Test Report Format No.: ERSIPL/FM/40	Date
	TEST REPORT (Water/ Waste Water)	

Test Report No: ERSIPL/TR/WA/T-206

Date: 03 Aug 2024

Name and Address of the Customer Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling 09.07.2024

Sample Collected by T Mohanta, Dy QM 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 3 ltrs

Type of Container Glass Bottle, HDPE Bottle

Weather Condition Sunny Atmospheric Temperature : 33 °C

Sample ID, No.

Locations 1. ERSIPL/WA/484 1. Tube Well, NTPC Dispensary, Village Bihajor 2. ERSIPL/WA/485 2. Open Well in Village Kanktora 3. ERSIPL/WA/486 3. Tube Well in Village Kalamegha

4. Open well in Village Kathfali

4. ERSIPL/WA/487 TEST FINDINGS:

SI	Parameters Analysed	Test Method	Unit	Permissible Limit as per 15:10500, 2012	Result				
31					ERSIPL/ WA/484	ERSIPL/ WA/485	ERSIPL/ WA/486	ERSIPL/ WA/487	
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	IS 3025:Part 05:2018	41	Agreeable (A)	A	A	A	A	
03	Taste	IS 3025:Part 07,08: 1984 Resffirmed-2017	~	Agreeable (A)	A	A	А	Α	
04	Nitrate as NO ₂	IS 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	(5 3025:Part 26: 2021	mg/L	0.2 (min)	NII	NII	Nil	Nil	
06	Copper	fS 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	IS 3025-Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND	
08	Phenolic Compound	15 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025:Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND	ND	ND	





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		of the second				-	ate	No: 2
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND .	ND	ND
12	Total Arsenic	IS 3025 Part 37: 2022	mg/t	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	15 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	NO	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	I5 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	A9HA 6440	mg/L	0.0001	ND	ND	ND	NĐ
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-Equic chromatography	mg/L	1999	ND	ND	ND	ND
21	Aluminium	IS 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	IS 3025:Part 57: 2021	mg/l.	0.5	ND:	ND	ND	ND
23	Nickel	IS 3025 Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	NO

ND-Not Detected

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(Authorized Signatory) S.P.Pattanayak Tecn.Mariager



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ULR-TC744024000000410F

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/207

Name and Address of the Customer

: Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

T Mohanta, Dy QM ERS(I) Pvt. Ltd.

Date of Sampling

Sample Collected by Sample Collected in presence of

: Representative of the Customer. : 16.07.2024

Sample Received on Analysis Started on Analysis Completed on 16.07.2024 16.07.2024 26.07.2024

: 09.07.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample : 3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature : Sunny : 33 °C

Sample ID. No.

1. ERSIPL/WA/488 2. ERSIPL/WA/489 3. ERSIPL/WA/490 4. ERSIPL/WA/491

Locations

Open well in Village Khuntjharia
 Bore well in Village Rengalmunra
 Open well in Village Bendrichua
 Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	Result				
SI					ERSIPL/ WA/488	ERSIPL/ WA/489	ERSIPL/ WA/490	ERSIPL/ WA/491	
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	*	6.5 to 8.5	6.29	7.41	6.69	6.97	
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.32	0.56	0.29	0.43	
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	48.0	262.0	36.0	132.0	
04	Total Iron	15 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.08	0.09	0.07	0.08	
05	Chioride	sloride IS 3025:Part 32: 1988 mg/L 250.0 26.61 66.03 2		23.65	21.68				
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	206.5	658.2	65.8	351.6	
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	12.83	48.90	9.62	26.45	
08	Sulphate as SO ₄	IS 3025 (Part 24/5ec 1) : 2022	mg/L	200.0	9.93	26.79	6.94	20.82	
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed 2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1	
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23: 1986 Reaffirmed-2019	mg/L	200.0	38.0	318.0	46.0	166.0	

Note-

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(Authorized Signatory) 8.P.Pattanayak Tecn.Mar.ager





: Dulanga open cast Coal Mining project of M/s NTPC Limited in

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Ref. No	Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water)	Date
16 1 24 4 1 1 1		Pg No: 1 of 2
Date: 03 Aug 2024	Test Report No: ERSIPL/TR/WA/T-207	7

: 09.07.2024

16.07.2024

16.07.2024

26.07.2024

Sundargarh district, Odisha.

: T Mohanta, Dy QM ERS(I) Pvt. Ltd.

As per Applicable Test Method

Glass Bottle, HDPE Bottle

Representative of the Customer.

Name and Address of the Customer

Date of Sampling Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Type of Container

Weather Condition

Atmospheric Temperature

Sample ID. No.

- ERSIPL/WA/488 2. ERSIPL/WA/489
- 3. ERSIPL/WA/490
- ERSIPL/WA/491

: 33 °C Locations

: Sunny

3 ltrs

- 1. Open well in Village Khuntjharia
 - 2. Bore well in Village Rengalmunra
 - 3. Open well in Village Bendrichua
 - 4. Bore Well R & R Colony, Kalamegha

247	Parameters Analysed	Test Method	Unit	Permissible Limit as per	Result				
SI				15:10500, 2012	ERSIPL/ WA/488	ERSIPL/ WA/489	ERSIPL/ WA/490	ERSIPL/ WA/491	
01	Colour	IS 3025:Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	IS 3025:Part 05:2018	2	Agreeable (A)	A	A	A	A	
03	Taste	15 3025:Part 07,08: 1984 Reaffirmed-2017		Agreeable (A)	A	A	A	A	
04	Nitrate as NO ₃	15 3025 Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	(5 3025: Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper	IS 3025 Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	IS 3025:Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND	
08	Phenalic Compound	IS 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury .	IS 3025: Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND	ND	ND	





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0				Charles and	- T	D	ate	No: 2
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND -	ND	ND
12	Total Arsenic	IS 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	15 13428 2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	IS 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	APHA 6440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025:Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	9666	ND	ND	ND	ND
21	Aluminium	IS 3025:Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Boron	15 3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	15 3025 Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note:

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak

Tecn.Mariager

.....END OF TEST REPORT



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ULR-TC744024000000489F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/WA/245

Name and Address of the Customer :

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.08.2024

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd.

Sample Collected in presence of

Representative of the Customer. 17.08.2024

Sample Received on Analysis Started on Analysis Completed on

17.08.2024 28.08.2024

Method of Sampling

As per Applicable Test Method

- 3 ltrs

Quantity of Sample Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

Rainy/Overcast

Atmospheric Temperature

: 28 °C

1. ERSIPL/WA/577

Locations

1. Tap water inside NTPC site office

TEST EINDINGS

				***************************************	Result
SI	Parameters Analysed	Test Method	Unit	Permissible Limit as per IS:10500, 2012	ERSIPL/ WA/577
01	pH value	IS 3025; Part 11: 1983 Reaffirmed-2022	164	6.5 to 8.5	7.16
02	Turbidity	IS 3025:Part 10: 2023	* NTU	1.0	0.59
03	Total Hardness as CaCO ₂	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	152.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.09
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	37.45
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	243.1
07	Calcium as Ca	i5 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	35.27
08	Sulphate as 50₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	22.31
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/t.	1.0	<0.1
10	Total Alkalinity as CaCO ₃	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	152.0

Note:

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- 5. This report shall not used in any advertising media or as evidence in the court of law without prior written coasent of ERS (II)

(Authorized Signatory)

S.P.Pattanayak Tech.Mariager





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Ref. No.

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water)

Date.....

Pg No: 1 of 2

Date: 31 Aug 2024

Name and Address of the Customer

Test Report No: ERSIPL/TR/WA/T-245

09.08.2024

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

T Mohanta, Dy QM ERS(I) Pvt. Ltd.

Representative of the Customer.

Date of Sampling

Sample Collected by Sample Collected in presence of

Sample Received on Analysis Started on

Analysis Completed on Method of Sampling

Quantity of Sample Type of Container

Weather Condition Atmospheric Temperature 17.08.2024 17.08.2024

28.08.2024

As per Applicable Test Method

3 itrs

Glass Bottle, HDPE Bottle

Rainy/Overcast

28 °C

Sample ID. No.

1. ERSIPL/WA/S77

Locations

1. Tap water inside NTPC site office

TEST FINDINGS:

-	Parameters			Permissible Umit	Result	
SI	Analyzed	Test Method	Unit	so per 15:10500, - 2012	ERSIPL/ WA/577	
01	Colour	IS 3025: Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	
02	Odour	15 3025 Part 05:2018	-	Agreeable (A)	A	
03	Taste	IS 3025: Part 07,08: 1984 Reaffirmed-2017	120	Agreeable (A)	A	
04	Nitrate as NO ₃	IS 3025 Part 34: 1983 Realfirmed-2019	mg/L	45.0	<5.0	
05	Residual Free Chlorine	IS 3025 Part 26: 2021	mg/L	0.2 (min)	Nil	
06	Copper	IS 3025:Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	
07	Manganese	is 3025 Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	
08	Phenolic Compound	IS 3025: Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	
09	Mercury	IS 3025:Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	



CIN - U731000R1995PTC003889



GSTIN: 21AAACE6224D1ZE

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Ref. No.

Date.

Pg No: 2 of 2

					17
11	Selenium	IS 3025: Part 56: 2003 Reaffirmed-2019	eng/L	0.01	ND
12	Total Arsenic	IS 3025: Part 37: 2022	mg/L	0.01	ND
13	Cyanide	IS 3025: Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND
14	Lead	IS 3025: Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND
15	Zinc	15 3025: Part 49: 1994 Reaffirmed 2019	mg/L	5.0	ND
16	Anionic detergents	15 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND
17	Total Chromium	IS 3025: Part S2: 2003 Reaffirmed-2019	mg/L	0.05	ND
18	Polynuclear aromatic hydrocarbons	APHA 5440	mg/L	0,0001	ND
19	Mineral Oil	i5 3025: Part 39: 2021	mg/L	0.5	ND
20	Pesticides	USEPA gas liquid chromatography	mg/L		ND
21	Aluminium	IS 3025: Part S5: 2003 Reaffirmed-2019	mg/L	0.03	ND
22	Boron	iS 3025: Part 57: 2021	mg/L	0.5	ND
23	Nickel	IS 3025:Part 54: 2003 Heaffirmed-2019	me/L	0.02	ND

ND-Not Detected

Note-

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(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager

......END OF TEST REPORT



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ULR-TC744024000000490F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/WA/246

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.08.2024

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Collected in presence of Sample Received on

17.08.2024

Analysis Started on Analysis Completed on

17.08.2024 28.08.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition

Rainy/Overcast

Atmospheric Temperature

28 °C

Sample ID. No.

1. ERSIPL/WA/578

2. ERSIPL/WA/579

3. ERSIPL/WA/580 4. ERSIPL/WA/581

Locations

- 1. Tube Well, NTPC Dispensary, Village Bihajor
- 2. Open Well in Village Kanktora
- 3. Tube Well in Village Kalamegha
- 4. Open well in Village Kathfali

TEST FINDINGS:

		Test Method	Unit	Permissible Limit as per 15:10500, 2012	Result					
Sì	Parameters Analysed				ERSIPL/ WA/578	ERSIPL/ WA/579	ERSIPL/ WA/580	ERSIPL/ WA/581		
01	pH value	IS 3025 Part 11: 1983 Reaffirmed-2022	.77	6.5 to 8.5	6.87	6.96	6.81	7.12		
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.63	0.52	0.67	0.39		
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	134.0	56.0	342.0	42.0		
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07	0.08	0.08	0.08		
05	Chloride	15 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	29.57	17.74	47.30	23.65		
06	Total Dissolved Solids	IS 3025 Part 16: 2023	mg/L	500.0	313.9	89.5	521.5	76.0		
07	Calcium as Ca	IS 3025 Part 40: 1991 Reaffirmed-2019	mg/L	75.0	27.25	12.83	58.52	9.62		
08	Sulphate as SO ₄	15 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	28.58	5.75	24.40	8.43		
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1		
10	Total Alkalinity as CaCO ₈	IS 3025 Part 23: 1986 Reaffirmed-2019	mg/L	200.0	42.0	64.0	280.0	46.0		

Note:

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(Authorized Signatory)

8.P.Pattanavak Tecn.Mar.ager

.....END OF TEST REPORT





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Ref. No.

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water) Date.....

Pg No: 1 of 2

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/WA/T-246

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.08.2024

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Collected in presence of Sample Received on

17.08.2024

Analysis Started on Analysis Completed on 17.08.2024 28.08.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

Rainy/Overcast

Atmospheric Temperature

: 28 °C

Sample ID, No.

Locations

1. ERSIPL/WA/578 2. ERSIPL/WA/579 Tube Well, NTPC Dispensary, Village Bihajor
 Open Well in Village Kanktora

3. ERSIPL/WA/580

3. Tube Well in Village Kalamegha

4. ERSIPL/WA/581

4. Open well in Village Kathfali

TEST FINDINGS:

SI	Parameters	Test Method		Permissible Limit as per 15:10500, 3012	Result				
SI	Analysed		Unit		ERSIPL/ WA/578	ERSIPL/ WA/579	ERSIPL/ WA/580	ERSIPL/ WA/581	
01	Colour	IS 3025-Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	is 3025-Part 05:2018		Agresable (A)	A	A	А	A	
03	Taste	IS 3025:Part 07,08: 1984 Reaffirmed-2017	w	Agreeable (A)	A	A	A	A	
04	Nitrate as NO ₃	IS 3035-Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	IS 3025 Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper	is 3025 Part 42: 1992 Reaffirmed 2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	IS 3025 Part 59: 2006 Reaffirmed-2022	mg/t	0.1	ND	ND	ND	ND	
08	Phenolic Compound	IS 3025 Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury	IS 3025-Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND	ND	ND	





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Ref. No. ..

								No: 21
TI	Selenium	IS 3025:Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND	Date	ND.
12	Total Arsenic	(5 3025 Part 37; 2022	mg/L	0,01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025:Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 : 2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	15.3025-Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
18	Polynuclear aromatic hydrocarbons	APHA 5440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025 Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	200	ND	ND	ND	ND
1	Aluminium	IS 3025 Part 55: 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	ND	ND
22	Baron	(S-3025:Part 57: 2021	mg/L	0.5	ND	ND	ND	ND
23	Nickel	15 3025 Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	NO	ND	ND

ND-Not Detected

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager

.....END OF TEST REPORT



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ULR-TC7440240000000491F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/WA/247

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.08.2024

Sample Collected by Sample Collected in presence of T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Received on Analysis Started on

17.08.2024 17.08.2024

Analysis Completed on

28.08.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition

Rainy/Overcast

Atmospheric Temperature

28 °C

Sample ID. No.

1. ERSIPL/WA/582

2. ERSIPL/WA/583

3. ERSIPL/WA/584 4. ERSIPL/WA/585

Locations 1. Open well in Village Khuntjharia

2. Bore well in Village Rengalmunra

3. Open well in Village Bendrichua

4. Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

	-		Unit	Permisible	Result					
SI	Parameters Analysed	Test Method		1)mit as per (5:10500, 2012	ERSIPL/ WA/582	ERSIPL/ WA/583	ERSIPL/ WA/584	ERSIPL/ WA/585		
01	pH value	15 3025:Part 11: 1983 Reaffirmed-2022	Chie	6.5 to 8.5	6.98	7.51	6.76	7.03		
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.45	0.66	0.33	0.47		
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	52.0	272.0	38.0	138.0		
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.08	0.09	0.08	0.10		
05	Chloride	IS 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	28.58	68.99	24.64	25.62		
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	214.3	648.9	66.3	354.8		
07	Calcium as Ca	IS 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	13.63	52.10	10.42	28.86		
08	Sulphate as SO ₄	15 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	10.67	25.90	7.69	27.72		
09	Fluoride	IS 3025-Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1		
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23: 1986 Reaffirmed-2019	mg/L	200.0	44.0	324.0	48.0	172.0		

Note-

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> (Authorized Stratory) S.P.Pattanayak Tech.Mariager





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Ref. No.

Test Report Format No.: ERSIPL/FM/40
TEST REPORT (Water/ Waste Water)

Date.....

Pg No: 1 of 2

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/WA/T-247

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

09.08.2024

Sample Collected by Sample Collected in presence of T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on 17.08.2024 17.08.2024 28.08.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample : 3 lt

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition

Rainy/Overcast

Atmospheric Temperature

: 28 °C

Sample ID. No.

- 1. Open well in Village Khuntjharia
- ERSIPL/WA/582
 ERSIPL/WA/583
- 2. Bore well in Village Rengalmunra
- ERSIPL/WA/584
 ERSIPL/WA/585
- Open well in Village Bendrichua
 Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

	Parameters	15.15.45%	Unit	Permissible Limit as per IS:10500, 2012	Result				
SI	Analysed	Test Method			ERSIPL/ WA/582	ERSIPL/ WA/583	ERSIPL/ WA/584	ERSIPL/ WA/585	
01	Colour	IS 3025/Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.0	<5.0	<5.0	<5.0	
02	Odour	IS 3025 Part 05:2018	(46)	Agreeable (A)	A	A	A	A	
03	Taste	IS 3025: Part 07,08: 1984 Reaffirmed-2017	-	Agreeable (A)	А	A	A	A	
04	Nitrate as NO ₃	15 3025:Part 34: 1983 Reaffirmed-2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	i5 3025 Part 26: 2021	mg/L	0.2 (min)	Nil	NII	Nit	Nil	
06	Copper	IS 3025 Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	is 3025:Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	NO	ND	ND	
08	Phenolic Compound	IS 3025:Part 43: 1992 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
09	Mercury	IS 3025-Part 48: 1994 Reaffirmed-2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reaffirmed-2019	mg/L	0.003	ND	ND	ND	ND	





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Ref. No. .

							P	g No: 2
ΥΥ	Selenium	IS 3025 Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND	Date	ND
12	Total Arsenic	IS 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND
13	Cyanide	IS 3025:Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	IS 3025 Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zinc	IS 3025 Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	ND
16	Anionic detergents	IS 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND
17	Total Chromium	25 3025 Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND.	ND
18	Polynuclear aromatic hydrocarbons	АРНА: 5440	mg/L	0.0001	ND	ND	ND	ND
19	Mineral Oil	IS 3025 Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	4	ND	ND	ND	ND
21	Aluminium	IS 3025 Part 55; 2003 Reaffirmed-2019	mg/L	0.03	ND	ND	NĐ	ND
22	Boron	15 3025 Part 57: 2021	.mg/L	0.5	ND	ND	ND	ND
23	Nickel	(5:3025:Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager

.....END OF TEST REPORT



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-TC744024000000542F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/WA/272

Name and Address of the Customer :

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

13.09.2024

Sample Collected by

Mr RK Jena, ERS(I) Pvt. Ltd.

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on 18.09.2024

Analysis Completed on Method of Sampling

26.09.2024

Quantity of Sample

As per Applicable Test Method

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature : Overcast

Sample ID. No.

28 °C Locations

1. ERSIPL/WA/649

1. Tap water inside NTPC site office

TEST FINDINGS

				Permissible Cimit	Result
51	Parameters Analysed	Test Method	Unit	as per 15:19500, 2012	ERSIPL/ WA/649
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	2	6.5 to 8.5	7.13
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0,51
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed 2019	mg/L	200.0	152.0
04	I otal Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.09
05	Chloride	IS 3025 Part 32: 1988 Reaffirmed-2019	mg/L	250.0	38.43
06	Total Dissolved Solids	tS 3025:Part 16: 2023	mg/L	500.0	251.6
07	Calcium as Ca	IS 3025:Purt 40: 1991 Reaffirmed-2019	mg/L	75.0	35.27
08	Sulphate as SO ₄	(S 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	23.51
09	Fluoride	15 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1
10	Total Alkalinity as CaCO,	IS 3025:Part 23: 1986 Reaffirmed-2019	mg/L	200.0	154.0

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanavak Teun.Mar.ager

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





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Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water)

Date_

Pg No: 1 of 2

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/WA/T-272

Name and Address of the Customer :

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

13.09.2024

Sample Collected by

Mr RK Jena, ERS(I) Pvt. Ltd.

Sample Collected in presence of Sample Received on

Representative of the Customer.

Analysis Started on

18.09.2024 18.09.2024

Analysis Completed on

26.09.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature Overcast 28 °C

Sample ID. No.

Locations

1. ERSIPL/WA/649

1. Tap water inside NTPC site office

TEST FINDINGS:

51	Parameters	Test Method	Unit	Fermisable Limit is per IS:10500,	Result
21	Analyzed	Test Method	Unit	2012	ERSIPL/ WA/649
01	Colour	IS 3025-Part G4: 1983 Roaffirmed-2021	Hazen	5.0	<5.0
02	Odour	853025;Part 05;2008	-	'Agreeable (A)	Α
03	Taste	15 5025 Part 07,08: 1984 Restfirmed-2517	100	Agraeukile (A)	A
04	Nitrate as NO ₁	ly 3005 than 34: 1983 Roaffirmed-2019	mg/L	45.0	<5.0
05	Residual Free Chlorine	IS 9025 Pays 26: 2021	mg/L	0.2 (min)	Nil
06	Copper	IS 3025 Part 43: 1997 Resiftement 2019	nig/L	0.05	ND
07	Manganese	15 3025 Part 59: 2006 Reaffirmed-2022	ma/L	0.1	ND
08	Phenolic Compound	IS 3025:Part 43: 1992 Reaffirmed-2019	rig/L	0.001	ND
09	Mercury	15 3025 Part 48: 1994 Ricaffirmed-2019	mg/L	0.001	NO
10	Cadmium	15 3025 Part 41: 1992 Reaffirmed 2019	mig/s:	0.003	NO





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0					Date Pg No	o: 2 of
11	Selenium	IS 3025:Part 56: 2003 Reaffirmed 2019	mg/s.	0.01	ND	
12	Total Arsenic	IS 3075:Part 37: 2022	mg/t.	0.01	ND	
13	Cyanide	IS 3025 Part 27: 1986 Reaffirmed-2019	mg/li.	0.05	ND	
14	Lead	IS 3025 Part 47: 1994 Reaffirmed-2019	mg/L	0.01	ND	
15	Zinc	15 3025:Part 49: 1904 Beaffirmed-2019	mg/l	5.0	NO	
16	Anionic detergents	15 13428 :2005 Reaffirmed-2019	mg/t.	0.2	NO	
17	Total Chromium	IS 3825/Part 52: 2003 Reoffermed 3019	mg/L	0.05	ND	
18	Polynuclear uromatic hydrocarbons	APHA 6440	mg/L	0.0001	NO	
19	Mineral Oil	IS 3025:Part 30: 2005	mg/L	0.5	ND	
20	Pesticides	USEPA gen-liquid chromatography	me/L	-	NO	
21	Aluminium	IS-3025 Part 55, 2009 Reafflorned-2019	mg/L	0.03	NO	
22	Boron	IS 3025 Part 57: 2021	mg/L	0.5	ND	
23	Nickel	35 3025 Part 54: 2503 Reaffement 2053	vig/L	0.02	ND	
23	POCKE	Reaffernest 2013	merc	0.02	NU	1

ND-Not Detected

Note

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 Pos. Ltd.

(Authorized Signatory) S.P.Pattanayak Teun.Mar.ager

.....END OF TEST REPORT



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ULR-TC744024000000543F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/WA/273

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

13.09.2024

Sample Collected by

Mr RK Jena, ERS(I) Pvt. Ltd.

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on 18.09.2024 18.09.2024

Analysis Completed on

26.09.2024

Method of Sampling Quantity of Sample As per Applicable Test Method

: 3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition
Atmospheric Temperature

Overcast 28 °C

Sample ID. No.

Locations

1. ERSIPL/WA/650

1. Tube Well, NTPC Dispensary, Village Bihajor

ERSIPL/WA/651
 ERSIPL/WA/652

Open Well in Village Kanktora
 Tube Well in Village Kalamegha

4. ERSIPL/WA/653

4. Open well in Village Kathfali

TEST FINDINGS:

			Unit	Permissible :	Result					
51	Parameters Analysed	Test Method		Limit as per 15:10500, 2012	ERSIPL/ WA/650	ERSIPL/ WA/651	ERSIPL/ WA/652	ERSIPL/ WA/653		
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	544	6.5 to 8.5	6.85	6.91	6.87	7.08		
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.56	0.41	0.59	0.38		
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	130.0	62.0	334.0	50.0		
04	Total fron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/L	0.3	0.07	0.07	0.08	0.07		
05	Chloride	15 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	27.59	20.70	45.33	27.59		
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	317.9	93.5	523.4	76.2		
07	Calcium as Ca	IS 3025 Part 40: 1991 Reaffirmed-2019	mg/L	75.0	25.65	14.43	56.91	12.02		
08	Sulphate as SO ₄	i5 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	27.39	5.45	24.40	8,13		
09	Fluoride	IS 3025:Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1		
10	Total Alkalinity as CaCO ₃	15 3025 Part 23: 1986 Reaffirmed 2019	mg/L	200.0	40.0	70.0	274.0	54.0		

Note-

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(Authorized Signatory





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Kel. No)

Test Report Format No.: ERSIPL/FM/40
TEST REPORT (Water/ Waste Water)

Date.....

Pg No: 1 of 2

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/WA/T-273

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

13.09.2024

Sample Collected by Sample Collected in presence of Mr RK Jena, ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Received on Analysis Started on 18.09.2024 18.09.2024

Analysis Completed on Method of Sampling

26.09.2024 As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature Overcast : 28 °C

Sample ID. No.

1. ERSIPL/WA/650

2. ERSIPL/WA/651

- 3. ERSIPL/WA/652
- 4. ERSIPL/WA/653

Locations

- 1. Tube Well, NTPC Dispensary, Village Bihajor
- Open Well in Village Kanktora
- 3. Tube Well in Village Kalamegha
- 4. Open well in Village Kathfali

TEST FINDINGS:

	Parameters Analysed	(Eq. (25)11) = 0	Unit	Permissible Limit as per 15:10500, 2012	Result				
SI		Test Method			ERSIPL/ WA/650	ERSIPL/ WA/651	ERSIPL/ WA/652	ERSIPL/ WA/653	
01	Colour	15 3025 Part 04: 1983 Reaffurwed-2021	Hazen	5.0	<s.0< td=""><td><5.0</td><td><5.0</td><td><5.0</td></s.0<>	<5.0	<5.0	<5.0	
02	Odour	75 3025 Part 05:3038	[86]	Agreeable (A)	A	A	A	A.	
03	Taste	15:3025 Part 07:08: 1594 Reaffirmed-2017	**	Agreeuble (A)	A	A	A	А	
04	Nitrate as NO ₃	is 3025 Part 34: 1983 Reaffirmed-2019	mg/t.	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	tS 3025 Part 26: 2021	mg/L	0.2 (min)	Nil	Nil	Nil	Nil	
06	Copper	IS 3025 Part 42: 1992 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	15 3025 Part 59: 2006 Reaffirmed 2022	mg/L	0.1	ND	ND	ND	ND	
08	Phenolic Compound	IS 3025 Part 43: 1992 Reinfirmed 2019	mg/L	0,001	ND	ND	ND	ND	
09	Mercury	iS 3025 Part 48: 1994 Reaffirmed 2019	mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reaffirmed 2019	mig/L	0.003	ND	ND	ND	ND	





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Pe No. 2 of 2 Ref. N

							P	g INCL Z C	6
11	Selenium	IS 3025 Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND L	ND	ND	Ť
12	Total Arsenic	is 3025:Part 37: 2022	mg/L	0.01	ND	ND	ND	ND	ľ
13	Cyanide	(S 3025 Part 27: 1986 Reaffirmes-2019	mg/L	0.05	ND	ND	ND	ND	
14	Lead	IS 3025 Fart 47, 1994 Reaffirmed 2019	mg/L	-0.01-	ND	ND	ND	ND	
15	Zinc	ts 3025 Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND:	ND	ND	
16	Anionic detergents	I5 13428 :2005 Reaffirmed-2019	mg/L	0.2	ND	ND	ND	ND	
17	Total Chromium	15 3025 Fart 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND	
18	Polynuclear aromatic hydrocarbons	APHA 5440	mg/E	0.0001	ND	ND	ND	ND	
19	Mineral Oil	i5 3025 Part 39: 2021	eng/L	0.5	ND	ND:	ND	ND	
20	Pesticides	USEPA gas liquid chromatography	rng/1.	1995	ND	ND	ND	ND	
21	Aluminium	IS 3025:Part 55: 2003 Reaffirmed-2019	rog/L	0.03	ND	ND	ND	ND	
22	Boron	15 3025 Port 57: 2021	mg/L	0.5	ND	ND	ND	ND	l
23	Nickel	15 3025; Part 54: 2003 Reaffirmed-2019	mg/L	0.02	ND	ND	ND	ND	

ND-Not Detected

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(Authorized Signatory)

.....END OF TEST REPORT



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

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ULR-TC744024000000544F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (Water/ Waste Water)

Pg No: 1 of 1

TC-7440

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/WA/274

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

13.09.2024

Sample Collected by

Mr RK Jena, ERS(I) Pvt. Ltd.

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on

18.09.2024 18.09.2024

26.09.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

3 ltrs

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition

Overcast

Atmospheric Temperature

: 28°C

Sample ID. No.

1. ERSIPL/WA/654

2. ERSIPL/WA/655

3. ERSIPL/WA/656 4. ERSIPL/WA/657

Locations

Open well in Village Khuntjharia

Bore well in Village Rengalmunra

3. Open well in Village Bendrichua

4. Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

			Unit	Permissible		Re	sult	
SI	Parameters Analysed	Test Method		Umit as per IS:10500, 2012	ERSIPL/ WA/654	ERSIPL/ WA/655	ERSIPL/ WA/656	ERSIPL/ WA/657
01	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	156	6.5 to 8.5	6.36	7.44	6.77	7.01
02	Turbidity	IS 3025:Part 10: 2023	NTU	1.0	0.33	0.62	0.35	0.46
03	Total Hardness as CaCO ₃	IS 3025:Part 21: 2009 Reaffirmed-2019	mg/L	200.0	50.0	258.0	34.0	132.0
04	Total Iron	IS 3025:Part 53: 2003 Reaffirmed-2019	mg/t	0.3	0.08	0.10	0.08	0.08
05	Chloride	15 3025:Part 32: 1988 Reaffirmed-2019	mg/L	250.0	27.59	64.06	22.67	22.67
06	Total Dissolved Solids	IS 3025:Part 16: 2023	mg/L	500.0	211.5	649.3	66.6	356.80
07	Calcium as Ca	15 3025:Part 40: 1991 Reaffirmed-2019	mg/L	75.0	10.67	25.75	6.49	26.45
08	Sulphate as SO ₄	IS 3025 (Part 24/Sec 1) : 2022	mg/L	200.0	10.67	25.75	6.49	20.07
09	Fluoride	IS 3025 Part 60: 2008 Reaffirmed-2019	mg/L	1.0	<0.1	<0.1	<0.1	<0.1
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23: 1986 Reaffirmed-2019	mg/L	200.0	42.0	314.0	44.0	166.0

Nate-

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ĸe	r. No	

Test Report Format No.: ERSIPL/FM/40 TEST REPORT (Water/ Waste Water)

Date.....

Pg No: 1 of 2

Date: 28 Sept 2024

Name and Address of the Customer

Date of Sampling Sample Collected by

Sample Collected in presence of

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample

Type of Container Weather Condition

Atmospheric Temperature

Sample ID. No.

- ERSIPL/WA/654
- 2. ERSIPL/WA/655 ERSIPL/WA/656
- 4. ERSIPL/WA/657

Test Report No: ERSIPL/TR/WA/T-274

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

13.09.2024

Mr RK Jena, ERS(I) Pvt. Ltd.

Representative of the Customer.

18.09.2024

18.09.2024 26.09.2024

As per Applicable Test Method

3 ltrs

Glass Bottle, HDPE Bottle

Overcast 28 °C

Locations

- 1. Open well in Village Khuntiharia
- 2. Bore well in Village Rengalmunra
- 3. Open well in Village Bendrichua
- 4. Bore Well R & R Colony, Kalamegha

TEST FINDINGS:

100	Parameters Analysed		Unit	Permissible timit as per IS:10500, 2012	Result				
SI		Test Method			ERSIPL/ WA/654	ERSIPL/ WA/655	ERSIPL/ WA/656	ERSIPL/ WA/657	
01	Colour	IS 3025-Part 04: 1983 Reaffirmed-2021	Hazen	5.0	<5.O	<5.0	<5.0	<5.0	
02	Odour	15 3025 Part 05:2018	(86)	Agrenable (A)	А	A	A	A	
03	Taste	IS 8025 Part 07,08: 1984 Reaffirmed 2017	-	Agrecable (A)	A	А	A	Α.	
04	Nitrate as NO ₁	IS 3025 Part 34: 1983 Roaffirmed 2019	mg/L	45.0	<5.0	<5.0	<5.0	<5.0	
05	Residual Free Chlorine	15.3025.Part 26: 2021	:mg/k:	0.2 (min)	Nil	Nil	160	Nil	
06	Copper	IS 3025 Part 42 1992 Reaffirmed 2019	mg/L	0.05	ND	ND	ND	ND	
07	Manganese	rs 3025 Part 59: 2006 Reaffirmed-2022	mg/L	0.1	ND	ND	ND	ND	
08	Phenolic Compound	IS-3025 Purt 43: 1992 Reaffirmed 2019	rog/L	0.001	ND	NO	ND	ND	
09	Mercury	IS 8025 Part 48, 1994 Reafferned-2019	.mg/L	0.001	ND	ND	ND	ND	
10	Cadmium	IS 3025 Part 41: 1992 Reafferned 2019	mg/L	0.003	ND:	ND	ND	ND	





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

							P	g No: 2
11	Selenium	is 3025-Part 56: 2003 Reaffirmed-2019	mg/L	0.01	ND	ND I	ND ND	ND
12	Total Arsenic	rs 3025; Part 37: 2022	mg/L	0:01	ND	ND	ND	ND
13	Cyanide	rS 3025-Part 27: 1986 Reaffirmed-2019	mg/L	0.05	ND	ND	ND	ND
14	Lead	t5 3025;Part 47: 1994 Reuffirmed-2019	mg/L	0.01	ND	ND	ND	ND
15	Zine	t5 3025:Part 49: 1994 Reaffirmed-2019	mg/L	5.0	ND	ND	ND	NĐ
16	Anionic detergents	IS 13428-2005 Reaffirmed-2019	mg/L	0.2	ND	NO.	NO	ND
17	Total Chromium	15 3025:Part 52: 2003 Reaffirmed-2019	mg/L	0.05	ND	ND.	ND	ND
18	Polynuclear aromatic hydrocarbons	АРНА 6440	mg/L	0.0001	ND	NO	ND	ND
19	Mineral Oil	15 3025 Part 39: 2021	mg/L	0.5	ND	ND	ND	ND
20	Pesticides	USEPA gas-liquid chromatography	mg/L	-	ND	ND	ND	ND
21	Aluminium	IS 3025 Part SS: 2003 Reaffirmed-2019	mg/L	0.03	ND	NO	ND	ND
22	Boron	iS 3025 Part 57: 2021	mg/L	0.5	ND.	ND	ND	ND
23	Nickel	15 3025 Part 54: 2003 Boaffirmed-2019	mg/L	0.02	ND	ND	ND	ND

ND-Not Detected

Note-

- The test results relate only to the items sampled and sested.
- Total Liability of ERS (I) Pvt. Ltd. is limited to the toyoicii Amount.

- This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pat. Etd.
- Samples (Fitter Papers & Thimbtes) received shall be destroyed after 01 year & Geseque/liquid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I) Pict. Ltd.

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

.....END OF TEST REPORT

एनटीपीसी **NTPC** • 000223 ANNEXURE - V

एनटीपीसी लिमिटेड

(भारत सरकार का उद्यम)

NTPC Limited

(A Govt. of India Enterprise)

दुलंगा कोल माइनिंग प्रोजेक्ट Dulanga Coal Mining Project

Ref.: 0100/DLCMP/FD/ES/02/08/44

Date: 25.08.2014

To,

The Director

Ministry of Environment, Forests & Climatic Change, Gov of India

Indira Paryavaran Bhawan,

Jorbagh, Aliganj

New Delhi - 110003

Reserved by C.R. Section quieves and a review of Environment & Forest with means / Govt. of India

d. w. en. utter, old the C.C.O. Complex Loddi Road of fixed New Debi-110008

Subject: Compliance of Specific condition Nos. 4A(x) & 4A (Ixiii) of environmental clearance accorded for Dulanga Coal Mining project (7MTPA in an area of 785,37ha= (803,71ha-18,34ha=785,37ha); of M/s NTPC Limited, Ib valley coalfields, Dist. Sundargarh, Odisha.

Reference: Letter No.: J/11015/1140/2007-IA.II(M) dated 03.03.2014 issued by MoEF, Gol.

Sir.

With reference to above subject, it is to mention that the Ministry of Environment and Forests, Government of India have accorded Environmental clearance for Dulanga Coal Mining project (7MTPA in an area of 785.37ha= (803.71ha-18.34ha=785.37ha); of M/s NTPC Limited. Ib valley coalfields, Dist. Sundargarh, Odisha vide J/11015/1140/2007-IA.II(M) dated 03.03.2014. In compliance to the subject Specific conditions of Environmental clearance, the compliance details are furnished below and the same is also being funished in soft in form of CD:

Condition No. 4A (x) - An integrated calendar plan of production including the details re-handling separately in external and internal dumps should be furnished to MOEF for record.

An integrated calendar plan of production including the details re-handling separately in external and internal dumps is furnished as **Annexure-I**.

Condition No. 4A (Ixiii) - A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & forests within 6 months of grant of Environmental Clearance.

A brief note on detailed final mine closure plan along with details of corpus fund as per the Revised Mining Plan is enclosed as **Annexure-II**.

The Revised Mining Plan including **Mine Closure Plan** (1st Revision) (April 2012) of Dulanga Coal Block of IB valley Coalfield, Sundargarh District, Odissa has been approved by MoC, vide letter No 13016/27/2012-CA-I Dated 14th August, 2012.

The copy the approval letter of MoC and the relevant information on the detailed Final Mine Closure Plan along with details of Corpus Fund as per the Revised Mining Plan approved by MoC is enclosed at **Annexure-III**).

This is for your kind information in compliance to above conditions please.

Thanking You.

Yours Faithfully

(C. R. Barik) 25 81

Addi. General Manager (I/c)

Enclosure: As above

An integrated calendar plan of production including the details re-handling separately in external and internal dumps

The mining method in the proposed Dulanga coal Mining Project is opencast mining method by shovel-dumper combination for excavation of OB and Surface miner as well as shovel-dumper combination for extraction coal. The extractable coal reserves is 152Million Tonne. With the rated output of 7MTPA the life of mine computed as 24 years. In addition to this, there will be construction period of two years before commencement of actual production from the mine.

A total quantity of 394.00Cum of overburden (including 3.65 M.Cu.m of top soil) will be removed from the quarry of the project during the life of 24 years of mining operations. In the initial years the excavated OB will be dumped in the external surface dump and the back filling operations will commence only after sufficient decoaled areas is available within the quarry. With assessed overall stripping ratio of 2.59 cum/t and annual target of 7 MT, the yearly average overburden removal would be in the order of 18.4 M cum.

The OB generated during 1st & 2nd year will be exclusively disposed in external surface dump located at south eastern side of ML (Block) area, lying outside the allotted coal block boundary. In the 3rd and 4th year, disposal of waste will be partly in surface dump and partly in backfilling. From the start of 5th year and onward full scale backfilling will start. The external OB dump will expand over an area of 86 ha and the dump is designed to accommodate 28.5 Mcum.

About 7% of waste will be disposed on the proposed overburden dump. Remaining 93% of the total waste will be disposed of in the mined out de-coaled area.

The calendar programme of coal production and OB removal is furnished hereunder.

Calendar Programme of coal production and OB removal in Dulanga Coal Block

Year	Coal Progressive (Mt)	Coal Cumulative (Mt)	Total waste (OB) (Mcum) prog.	Total waste (OB) (Mcum) Cumulative	Stripping ratio (cum/t) prog	Stripping ratio (Cum/t)
C1			, , ,			
C2	,					
1	1	1	4.5	4.5	4.5	4.5
2	2.5	3.5	10.5	15	4.2	4.29
3	4.5	8	5.5	30.5	3.44	3.81
4	7	15	18	48.5	2.57	3.23
5	7	22	18	66.5	2.57	3.02
6	7	29	18.4	84.9	2.63	2.93
7	7	36	18.4	103.3	2.63	2.87
8	7	43	18.4	121.7	2.63	2.83
9	7	50	18.4	140.1	2.63	2.8
10	7	57	18.4	158.5	2.63	2.78
11	7	64	18.4	176.9	2.63	2.76
12	7	71	18.4	195.3	2.63	2.75
13	7	78	18.4	213.7	2.63	2.74
14	7	85	18.4	232.1	2.63	2.73
15	7	92	18.4	250.5	2.63	2.72
16	7	99	18.4	268.9	2.63	2.72
17	7	106	18.4	287.3	2.63	2.71
18	7	113	18.4	305.7	2.63	2.71
19	7	120	18.4	324.1	2.63	2.7
20	7	127	18.4	342.5	2.63	2.7
21	7	134	18.4	360.9	2.63	2.69
22	7	141	18.4	379.3	2.63	2.69
23	6	147	10	389.3	1.67	2.65
24	5	152	4.7	394	0.94	2.59
Total	152		394			2.59

The dumping schedule is given in Table below:

Dumping Schedule (Figure in Mm³)

Year	Exte	rnal Dump	Inter	nal Dump	Total		
	OB	Cumm OB	OB	Cumm OB	OB	Cumm OB	
C1							
C2							
1	4.50	4.50	0.00	0.00	4.50	4.50	
2	10.50	15.00	0.00	0.00	10.50	15.00	
3	9.00	24.00	6.50	6.50	15.50	30.50	
4	4.50	28.50	13.50	20.00	18.00	48.50	
5	0.00	28.50	18.00	38.00	18.00	66.50	
6	0.00	28.50	18.40	56.40	18.40	84.90	
7	0.00	28.50	18.40	74.80	18.40	103.30	
8	0.00	28.50	18.40	93.20	18.40	121.70	
9	0.00	28.50	18.40	111.60	18.40	140.10	
10	0.00	28.50	18.40	130.00	18.40	158.50	
11	0.00	28.50	18.40	148.40	18.40	176.90	
12	0.00	28.50	18.40	166.80	18.40	195.30	
13	0.00	28.50	18.40	185.20	18.40	213.70	
14	0.00	28.50	18.40	203.60	18.40	232.10	
15	0.00	28.50	18.40	222.00	18.40	250.50	
16	0.00	28.50	18.40	240.40	18.40	268.90	
17	0.00	28.50	18.40	258.80	18.40	287.30	
18	0.00	28.50	18.40	277.20	18.40	305.70	
19	0.00	28.50	18.40	295.60	18.40	324.10	
20	0.00	28.50	18.40	314.00	18.40	342.50	
21	0.00	28.50	18.40	332.40	18.40	360.90	
22	0.00	28.50	18.40	350.80	18.40	379.30	
23	0.00	28.50	10.00	360.80	10.00	389.30	
24	0.00	28.50	4.70	365.50	4.70	394.00	
OTAL	28.50		365.50		394.00		

Proper attention will be given to the stability of the external surface dump, backfilled dump and crown dump from failures and leaching out.

Re-handling of dump

In view of recommendations of Expert Appraisal Committee (EAC) and Environmental Clearance (EC) granted by MoEF, the internal dumps (Western & Eastern) will be re-handled for void filling. Due to this re-handling, the depth of void will reduce from 255m to 40-50m and the whole area of 351.23Ha will be reclaimed. The height of east side internal dump reduced matching to surrounding ground level and afforested. The height of west side internal dump reduced upto 30m from surrounding ground level and afforested.

Year-wise re-handling of OB is furnished in table below.

Year	OB Reha	ndled (Mm3)	
	Progressive	Cumulative	
25 th	22.4	22.4	
26 th	22.4	44.8	
27 th	22.4	67.2	
28 th	22.4	89.6	
29 th	22.4	112.0	
Total	112.0		

Final topography shall confirm to the surrounding ground level except in some areas and final void area.

BRIEF NOTE ON DETAILED FINAL MINE CLOSURE PLAN ALONG WITH DETAILS OF CORPUS FUND

BACKGROUND

Revised Mining Plan including Mine Closure Plan (1st Revision) (April 2012) of Dulanga Coal Block of IB valley Coalfield, Distt. Sundergarh. Orissa was approved by MoC, vide letter No 13016/27/2012-CA-I Dated 14th August,2012 (Copy Enclosed at Annexure-I)

As this is a Progressive Mine Closure Plan (PMCP), only tentative cost estimate has been envisaged and estimated as per the guidelines issued by MoC. Detailed Mine Closure Plan shall be prepared 5 years prior to the actual closure of the mining operations.

ANNUAL CLOSURE COST

As mentioned above, the annual closure cost has been calculated as per the guidelines issued by MoC (vide letter no 55011-01-2009-CPAM dated 27/08/2009 & 18.02.2011). As per circulated guidelines of MoC the closure cost for an opencast mine is to be modified based on the Wholesale Price Index (WPI) as notified by Govt. of India.

The WPI for all commodities Issued from Office of Economic Advisor, Ministry of Commerce and Industry, Govt. of India (Base date: 2004-05) was 129.60 in Aug'09 and 148.10 in Feb'11. The closure cost was `.6.00 Lakhs per ha in Aug'09. The current closure cost has been arrived by multiplying `. 6.00 Lakhs per ha by the ratio of WPI in Feb'11 and WPI in Aug'09 which comes to be `. 6.86 Lakhs per ha. The calculation methodology is as follows:

Total lease hold area Considered for mine closure (A) : 890.63 ha

Mine closure cost per Ha for opencast mine in Aug'09 : 6.00 Lakhs

Mine closure cost per Ha for opencast mine in Feb'11(B) : '. 6.86 Lakhs

Life of the mine (C) : 26 years

(Incl. 2 years of construction period)

Annual base price [(A X B)/C] (for 1st year) : `. 2.35 Crores

Total closure cost for opencast mine : `.120.05 Crores

(Compounding @ 5% annual escalation)

The year wise closure cost is tabulated in the following Table as per the approved Revised Mining Plan

YEAR WISE AMOUNT TO BE DEPOSITED IN ESCROW ACCOUNT

YEAR	AV. COST PER ANNUM	YEAR WISE EXPENDITUR WITH 5 % ESCALATION			
	(*. CRORES)	(`.CRORES)			
C1	2.35	2.35			
C2	2.35	2.47			
P1	2.35	2.59			
P2	2.35	2.72			
P3	2.35	2.85			
P4	2.35	3.00			
P5	2.35	3.15			
P6	2.35	3.30			
P7	2.35	3.47			
P8	2.35	3.64			
P9	2.35	3.83			
P10	2.35	4.02			
P11	2.35	4.22			
P12	2.35	4.43			
P13	2.35	4.65			
P14	2.35	4.88			
P15	2.35	5.13			
P16	2.35	5.38			
P17	2.35	5.65			
P18	2.35	5.94			
P19	2.35	6.23			
P20	2.35	6.54			
P21	2.35	6.87			

YEAR	AV. COST PER ANNUM (*. CRORES)	YEAR WISE EXPENDITURE WITH 5 % ESCALATION (*.CRORES)
P22	2.35	7.21
P23	2.35	7.57
P24	2.35	7.95
TOTAL	61.07	120.05

Total Estimated cost for completing the envisaged closure activities comes to **Rs**120.05 Crores. This Estimated cost will be modified based on WPI as notified from Govt, of India from time to time.

ABANDONMENT COST/CORPUS FUND

Tentative cost of likely closing activities as envisaged below has been estimated considering base date as Feb '2011. Actual closing activities and activity wise costs may change during the preparation of Final Mine Closure Plan which will be prepared 5 years before the likely cessation of mining operation. A time schedule for abandonment along with tentative fund requirement over the life of mine has been shown in the bar chart given below: (Prepared inline with Table 11.9, Chapter XI of Approved Revised Mining Plan, Enclosed at Annexure-II)

Tentative Fund Requirement for Closure Activities (Without Escalation)

SI. No.	Detailed Activities to be undertaken	P-5	P-10	P-15	P-20	P-24	End of Mine Closure
1.0	Mine Area & Waste Management						
1.1	Plantation along the block boundary, embankment, approach road, CHP, Cross country conveyor, Railway siding etc and around the mine infrastructure area				S		
1.2	Physical reclamation of external dump (Levelling, Spreading of top soil, toe wall formation, drain etc.)						
1.3	Physical reclamation of internal and external dump (Levelling, Spreading of top soil, toe wall formation, drain etc.)	ģ					
1.4	Bio reclamation of above items						
1.5	Barbed wire fencing as per requirement						
2.0	Environnemental Management (Air, Water, Waste, Noise etc)						
2.1	Treatment of mine water before discharging into nala/river						
2.2	Thorough inspection of external and stabilized internal dumps to find state of its stabilization & Bio reclamation.	3					

SI. No.	Detailed Activities to be undertaken	P-5	P-10	P-15	P-20	P-24	End of Mine Closure
2.3	Action to stabilize & vegetate uncovered patches, if any.				_	_	DEPART SALESPARES
2.4	Inspection of garland drains & bunds around external dumps to prevent leachate water from entering natural water courses directly.						
2.5	Inspection of embankment to prevent entry of uncontrolled water to mine						
2.6	Strengthening of embankment						
2.7	Quarterly sampling of water,air,noise and soil and it's mitigation						
2.8	Record keeping, monitoring and reporting						
3.0	Actions for safety & security of local community due to abandonment of the mine or part of the mine						
3.1	Regular inspection of the mined out area, O.B. dumps etc. for assessing the closure job.				_		
3.2	Action for making safe the drainage areas, fire areas etc.					_	
3.3	Making 2 meter high pucca wall/stone fencing around the top edge of the mined out area, where immediate void exists at the quarry edge (to avoid drowning).	- 100					
3.4							
3.5	Survey of the total project area for updating mine plans Under Coal Mine Regulation.						
4.0	Social & Economic Aspects						
4.1	C.S.R activities					_	
5.0	Execution & Supervision						
5.1	Purchasing / Hiring of equipment for closure activities etc.				_	_	
5.2	Execution & Supervision of the activities by mining and other statutory personal.					_	
6.0	Miscellaneous charges towards activities incidental/related to progressive mine closure including power cost, deployment of security personal, 3 years post closure environmental monitoring, supervision, rehandling of OB, protective & rehabilitation measures including their maintenance & monitoring etc.						
	Total estimated expenditure incurred in Rs Crore	20.00	25.00	30.00	35.00	45.00	61.07

(The amount deposited in the Escrow Account and the amount to be released does not include the interest accrued in the Escrow Account.)

FINANCIAL ASSURANCE

As per guidelines for Mine Closure Plan, NTPC shall take following actions for ensuring the financial assurance to complete the mine closure activities:

Opening of a Escrow Account

The proponent (NTPC) shall open an escrow Account with any Scheduled Bank. The beneficiary of this account shall be Coal Controller Organisation (on behalf of central Government). The proponent shall deposit the amount detailed in **Table No 11.10**, Chapter XI of the Approved Revised Mining Plan, on yearly basis into this Escrow account.

Estimated cost will be modified based on WPI as notified by Government of India.

Condition for operating the Escrow Account

An agreement, outlining detailed terms and conditions of operating the Escrow account, shall be finalized and executed amongst the project owners, concerned Bank and the Coal Controller. The agreement shall be executed before the grant of permission by the coal controller to open the mine.

Release of Funds from Escrow Account

Mining will be carried out in a phased manner initiating afforestation/ Reclamation work in the mined out area of the first phase while commencing the mining in the second phase i.e. continuation of mining activities from one phase to other indicating the sequence of operations depending on the geo mining condition of the mine. Up to 80% of the total deposited amount including interest accrued in the escrow account will be released after every five years in line with the periodic examination of the closure plan as per Clause 3.1 of the Annexure of the Guidelines (Mine Closure Guidelines issued by MoC). The amount released will be equal to the expenditure incurred in the Progressive Mine Closure in past five years or 80% whichever is less. The balance amount at the end of the Final Mine Closure shall be released to mine owner/lease holder on compliance of all provisions of closure plan duly signed by the lessee. It will be certified that said closure of mine complied all statuary rules, regulations, orders made by the Central or State Govt, statutory organisations, court etc and duly certified by the coal controller.

RESPONSIBILITY OF MINE OWNER

NTPC will ensure that protective measures contained in the Mine Closure Plan including reclamation and rehabilitation works have been carried out in accordance with the approved Mine Closure Plan and Final Mine Closure Plan.

NTPC shall submit the coal controller a yearly report before 1st July every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plans. Details of physical progress of the closure activities and expenses incurred will be included in the yearly report.

PROVISION FOR MINE CLOSURE

The mine owner will obtain a mine closure certificate from coal controller to the effect that the protective, reclamation and rehabilitation works have been carried out by the mine owner in accordance with the mine closure plan/final mine closure plan for surrendering the reclaimed land to the State Government concerned.

This is to inform that, Dump management as suggested by EAC was studied in detail considering the geo-mining conditions of the block and it was found that backfilling of the void can be done within five years of post mining operations (exhaustion of coal resources in the present block boundary) by re-handling the Western and Eastern internal dumps as shown in the Final Stage Dump Plan (Plate No. 48).

As per the EAC suggestions, NTPC submitted a Revised Final Stage Dump Plan (Plate No. 53) with void of area of 159 ha, but the depth of void will be reduced from 255m to 50m from surface by re-handling the internal dumps.

Apart from the above, efforts have been made to rework the post mining topography conforming to the surrounding surface level. Instead of planting trees NTPC may resort to spread the bio reclaimed soil over the internal dumps and convert some portion of land based on the practicability, into agricultural land.

No.13016/27/2012-CA-1 Government of India Ministry of Coal

New Delhi, the 4 August, 2012

To.

Shri A.K.Dash,
Addl.GM(PE-Mine Planning & Design)
5th Floor, Engineering Officer Complex,
Sector-24
NTPC Limited,
NOIDA- 201 301

Subject:

Approval of Revised Mining Plan including Mine Closure Plan (1st Revision) (April 2012) of Dulanga coal block of IB Valley Coalfield, Distt. Sundergarh, Orissa-Reg.

Sir.

I am directed to refer to your letter no. CC:PEM:7015:MP:30 dated 17th October, 2011 submitting therewith Revised Mining Plan including Mine Closure Plan (1st Revision) (April 2012) of Dulanga coal block of IB Valley coalfield, Distt Sundergarh, Orissa and to say that the matter has been considered and the approval of the Central Government thereon is hereby conveyed under Section 5(2)(b) of the Mines & Minerals(Development & Regulation) Act, 1957 subject to the following conditions:-

- (i) The mining company shall take all necessary precautions regarding safety of mine workings, persons deployed therein.
- (ii) Mining Lease to be acquired shall not encroach into any other coal block.
- (iii) The approval of the Mining Plan is without prejudice to the requirement of approvals from competent/prescribed authority under the relevant rules/regulations
- 2. Two copies of the approved Revised Mining Plan including Minc Closure Plan (1st Revision) duly signed by the competent authority are returned herewith with the request that a copy of the approved Revised Mining Plan including Mine Closure Plan (1st Revision) may be submitted to the concerned State Government for necessary action and also a photocopy of the approved Revised Mining Plan including Mine Closure Plan (1st Revision) may be sent to the Coal Controller for monitoring the block.

Yours faithfully

(Sandeep Gupta)
Under Secretary to the Govt. of India

Encl: as above Copy to:

The Under Secretary, CPAM Section, Ministry of Coal for information and record.

CHAPTER-XI

PROGRESSIVE AND FINAL MINE CLOSURE PLAN

11.1 INTRODUCTION

The present Mine Closure Plan is prepared for 890.63 ha, which includes block area, external OB dump area, facilities, diversion of nala & road, colony etc.

Earlier Mine Closure Plan based on the Approved Mining Plan has already been submitted to MoC on 04.11.2010. The presentation to the standing committee was made on 07.03.2011. Observations from MoC received on 07.04.2011. The observations of MoC along with reply to the observations on the Earlier Mining Closure Plan are enclosed in **Annexure-XVL**

In view of the reasons as explained in the Chapter-II. NTPC has prepared Revised Mining Plan based on which Progressive & Final Mine Closure Plan is also prepared which is in line with the MoC guidelines issued in this regard and covering all the aspects of Mine Closure Plan(already submitted to MoC). As per the Revised Mining Plan in Phase-I of mining operation the life of Mine is estimated as 26 years including 2 years of construction period.

NTPC has also envisaged approaching to MoEF during 20th year of mining operation for seeking permission of mining of 87 ha of forest land. If the permission is granted by the MoEF, life of mine will be enhanced by approximately 6 years and accordingly the mine closure activities will be applicable and implemented from the date of exhaustion of resources.

11 1.1 REASONS FOR CLOSURE

Mine will be closed either

- after exhaustion of coal reserves or
- by any order of government or
- by any violation of statutory obligation or
- any other unforeseen reason.

Chapter-XI Progressive and Final Mine Closure Plan

RQP N

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

BAPTORY NUMBER CONGH Recognised Qualified Person No. 34011/(15)/2009-CPAM May new Delh-110001

11.1.2 STATUTORY OBLIGATIONS

All applicable statutory rules, regulations, bye-laws etc. and statutory requirement related to Govt. licenses, workers compensation, insurance etc., including minimum wage act for workers employed by the outside agency will be adhered.

Following statutory rules, regulations, bye-laws etc will be adhered:

- 1. Coal Mines Regulation, 1957
- Mines Act. 1952.
- Mines Rules, 1966
- Vocational Training Rules, 1966
- 5. Indian Electricity Rules, 1956
- DGMS circulars
- 7. Factories Act, 1948 (as applicable to mines)
- Explosive Act and Rules,
- Recommendations of National Safety Conferences, Tripartite Safety Review Committees.
- Special guidelines issued by DGMS following accident's enquiries etc.
- 11. ILO code of Safety & Health in opencast Mines (1991)
- Special conditions imposed while execution of lease deed, approval of Mining Plan, directive issued by the Ministry of Coat, conditions imposed by the MoEF, State Pollution Control Board or by any other Government organization will be followed.

Mining Plan of this block has been approved. All conditions stipulated in approved Mining Plan, Environmental clearance and other statutory clearances which are still to come will be complied.

List of clearances along with their status is as elaborated in Table No. 11.1.

सदीय प्रकार Ounder Secondary of Missage / Secondary Govt. of 1 at 15 feet) (New Delhi-11 July

Chapter-XI Progressive and Final Mine Closure Plan

SAMUIV KUMAR SINGH Racounised Qualified Person No. 34011/(16)/2009-CP/CI

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

TABLE NO. 11.1 LIST OF CLEARANCES

CLEARANCE/STUDY	STATUS	REMARKS			
Approval of Mining Plan - MoC	Approved	All conditions			
Public Hearing SPCB	Completed	as stipulated			
Environment clearance - MOEF	In process	in received			
Approval from the State govt for Garia nata diversion	Awaited	statutory clearances			
Forest clearance - MOEF	In process	and other			
Land Acquisition / surface rights - State Govt/Govt of India	In Process	statutory clearances			
Clearance for use of explosives and construction of magazine – Chief Controller of Explosives	In Process	which are still to come will			
Permission for opening of coal mine from DGMS	In Process	be complied.			
Rehabilitation & Resettlement of displaced families	In Process	1			

11.1.3 CLOSURE PLAN PREPARATION

A Final Mine Closure plan shall be prepared 5 years before the likely cessation of mining operations. However, conceptual Mine Closure Plan has been prepared by RQP and is being put up for approval by the competent authority.

11.2 WATER QUALITY MANAGEMENT

The Control of Control Water is an essential resource that sustains all life supporting system on the earth. It is an essential requirement for all human activities right from survival to the development. Therefore, quality and quantity of water are the utmost important factors for survival and sustainable development. Hydro geologically the district is mainly confined to Precambrian crystalline ground water and Gondwana ground water province.

11.2.1 EXISTING SURFACE & GROUND WATER BODIES

11.2.1.1 Surface Water Resources

The source of the surface water is mainly River, Nalas and Ponds. The drainage system of the study area is dendrites' to sub-dendritic type and well developed. The drainages are flowing towards East and southeast directions. A major source of surface water in the study area is Basundhra, Garia, Bichna, Bagmora, Brahmani, Bhesrakharu, Lilari and Tangramounda Jhari

Chapter-XI Progressive and Final Mine Closure Plan

SAMULY KUMAR SINGH Ricophised Qualified Person No. 31011/(15)/2009-CPAM RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

SANNEEP GUPTA

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Nala. Garia Nala, flows along the central part of the exploration block and more or less bisects the block into two sub-blocks.

11.2.1.2 Ground water sources

The groundwater in sedimentary formation occurs under confined conditions and is limited to the thickness of the formation. The Barakar formation acts as a good aquifer due to high porosity and permeability in the formation Predominantly western part of the study area comprises of hills and rugged topography, the water level is at great depth as compared to the pediplain areas. Mostly the rainwater gets run-off in this area and hence the percentage of recharge of ground water is very less. The water table of this area varies from 5m to 20m, in the valley-fill areas, the water table is at shallow depth. The ground recharge in these areas is very high. The major source of drinking water is dug wells and hand pumps, which are available in almost all the villages in the study area.

11.2.2 EXISTING WATER QUALITY (SURFACE & GROUNDWATER)

The ground water becomes the main source of drinking water in the rural areas. The ground water quality in the study area is of acceptable quality for drinking purpose. In some of the villages high percentage of iron content has been reported, which is beyond acceptable limit (i.e. Desirable limit: 0.3 and Permissible limit: 1.0) for drinking water purpose. Summarised water quality results are shown in **Table 11.2** and Water analytical data from the villages of the study area is given in **Table 11.3**

TABLE 11.2 SUMMARISED WATER QUALITY RESULTS

n. n	L	TIMIT	OBSERVED RANGE		
PARAMETER	Desirable	Permissible	Ground Water	Surface Water	
рН	6.5 - 8.5	6.5 - 8.5	6.89 - 7.88	6.94 - 7.36	
Total hardness (as CaCO ₃),mg/l	300	600	60 - 292	44 - 64	
Iron (as Fe),mg/l	0.3	1.0	0.02 - 0.75	0.1 - 0.37	
Chlorides (as CI),mg/l	250	1000	12 - 103	12 - 18	
Total dissolved solids / (/	500	2000	85 - 554	82 - 96	
Calcium (as Ca), mg/l	ODEEP 75 PTA	200	8.1-94.8	8.2 - 14.7	
Sulphate (as SO4), mg/F Wall	der 5200° cal	400	0.15 -	0.9 - 4.14	
Nitrate (as NO3), mg/l	Govi. 450001 W Della 110001	100	1 - 89	5 - 6	
Fuoride (as F), mg/l 로 보레가	1.0	1.5	0.1 - 0.77	0.11 - 0.14	
Alkalinity	200	600	48 - 162	42 - 52	

Chapter-XI Progressive and Final Mine Closure Plan

SANUTY HUM AR SINGH Recognised Qualified Person No. 31911/(15)/2009-CPAM

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

TABLE 11.3 WATER ANALYTICAL DATA FROM THE VILLAGES OF THE STUDY AREA

SL. NO.	VILLAGE NAME	LOCATION OF WATER SOURCE	Fe
	P.S. HEMGIR, DI	STT. SUNDARGARH	
1	Kanika	Jhupudipara/Mahajit	0.20 -1.50
2	Durubaga	Near School/Near Post Office	0.3 -2.00
3	Duduka	Near Boy's Hostel/Road side	0.4 -3.00
4	Garjanbahal	Bhaisalpara/U.P.School	0.3 -8.00
5	Kiripashira	Basti/Harijanpada	0.1-8.00
6	Tithaitangara	School/Basti	0.03 -0.6
7	Laikera	Gandapara/Harizanpara	0.2 -4.00
8	Chuanahal	Mission (K.Para)	0.3
9	Kanakatora	Mundapara/Junadihi	0.1 -1.5
10	Ratakhandi	Basti/School	0.02 -0.5
11	Kalamegha	Alekhpara/Dhanmunda	0.2 -4.00
12	Dulanga	Basti/Basti	13
13	Manoharpur	Basty	1
14	Majhapada	Basti/School	0.1 -0.8
15	Khuntijhaaria	School	4
16	Tangardihi	Manipur/Ghanachal	0.5 -8.0
17	Telia	Basti	6.0
18	Singaribahal	Basti	0.3

11.2.3 IMPACT ON WATER QUALITY DUE TO MINING

11.2.3.1 IMPACT ON SURFACE WATER

The surface water quality is likely to be affected with higher load no feeting suspended solids by the following:

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- Wash off from dumps
- Soil erosion from mine and roads
- Pumping out mine water to surface water channels

The outside dump may contribute to the pollution of surface water in terms of suspended solids. Since dumping location proposed to be carried out at a safe distance from nalas, it will have negligible impact on water pollution. The pumped out water during dewatering may carry higher levels of suspended

Chapter-XI Progressive and Final Mine Closure Plan

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

SAMULY KUMAR SINGH Rocconised Qualified Person No. 34011/(15)/2009-CPAM

Page XI-5

solids. Other sources of pollution are by oil spillage at the pit head and at the facilities viz. Workshop, resulting in oil and grease contamination of surface water if appropriate control measures are not adopted.

Ground water pollution can take place only if dumps and stock piles contain harmful chemical substances, which may get leached by precipitation of water and percolate to the ground water table, thus causing water pollution.

However, this is not the case with this mine, as neither the coal nor the OB, contains any harmful ingredients which may leach down to the water table and pollute it. Therefore, no adverse impact on ground water quality is anticipated considering this aspect. The leaching down of pollutants (oil, grease etc.) to the ground water may render the water unpotable and hence cannot be used by the local people. The percolation of sewage waste from the pit head as well as colony area will also pollute the ground water if control measures are not adopted as envisaged in the management plan.

11.2.3.2 IMPACT ON WATER REGIME

No impact on the surface water resources is envisaged as the water is not proposed to be drawn from surface or ground water resources. The water from the mine sump will be used for all purposes. However, in view of availability of ground water at shallow levels, the ground water level in the surrounding vicinity of the mine will be lowered causing drying of wells upto certain distance.

11.2.4 WATER REQUIREMENT

Industrial water required for HEMM washing, sprinkling on haul roads for dust suppression and for watering the mine site plantations, will be supplied from pumping installation at mine sump and surface reservoir (settling pond). The drinking water will be supplied from mine sump after proper treatment and stored in overhead tank near the facilities area and distributed through pipe lines to different facilities area for drinking and domestic purposes during operational stage. However, during construction stage (till adequate water in mine sump is not available), potable water will be drawn from bore wells

Total requirement of fresh water for mining and allied activities is estimated as 1500 m /day besides the water which is reclaimed and reused for plantation from colony and canteen sewage effluent. The water requirements

Chapter-XI Progressive and Final Mine Closure Plan

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Out of total fresh requirement of 1500 cum/day, 653 cum/day is potable and there 847cum/day is for industrial use from mine water. Additional requirement is met by reclaimed water from colony ETP, canteen etc (435 cum). Hydrogeological study has been carried out and the report is attached with the earlier Mine Closure Plan.

TABLE 11.4 WATER REQUIREMENTS

SI. No	Particulars	Water (m ³ /day)
1.	Sprinkling @ 68 m ³ /Mt of annual coal production excluding CHP	480.00
2.	CHP excluding washery	160.00
3.	Plantation @ 15 m ³ /ha for peak 40 ha in 3rd year = 600 m ³ - recirculated from colony STP 408 m ³ - 27 m ³ from canteen	165.00
4.	Vehicles washing @ 2 m³/vehicle/day for 30 Vehicles = 60 m³ - 48 m³ recirculated	12.00
5.	Fire fighting water evaporation 10% of 45 m ³ /Mt of annual coal production	30.00
	Sub - total (Industrial)	847.00
	Drinking at working place @ 45 lpd/head for about 1350 workers	60.00
	Colony for 945 employees (70% satisfaction) @ 135 lpd/head	510.00
3,	Canteen for 100 seater @ 68 lpd (500 persons)	34.00
	Others (LS)	49.00
	Sub-total (Potable)	653.00
13	Total	1500.00

11.2.5 WATER POLLUTION CONTROL MEASURES

11.2.5.1 Effluent from Mine

4173 YOU'S I GOVE OF INDI IREN INEW Dalls 110001 To prevent surface and ground water contamination by folligrease and sewage waste, following control measures are proposed to be implemented.

Leak proof containers will be used for storage and transportation of oil/grease. In the store also, the container containing oil/grease will be kept in empty safe open containers of higher volume than the containers to avoid oil/grease spillage. The area over which oil/grease is handled will be kept effectively impervious. Any wash off from the oil/grease handling area or workshop will be drained through impervious drains,

Chapter-XI Progressive and Final Mine Closure Plan

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

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collected in specially constructed pit and treated appropriately before releasing it into the natural drains.

- The sewage waste generated will be drained by underground impervious drains, lead to appropriately designed septic tanks and soak pits to prevent any pollution of surface or ground water.
- 11.2.5.2 The surface and ground water in and around the mine, loading plant and infrastructure will be regularly tested and appropriate control measures adopted in case of any pollutant is detected above the prescribed limit.
- 11.2.5.3 All stacking and loading areas will be provided with proper garland drains equipped with baffles to prevent wash offs from reaching the downstream natural channels.

11.2.6 CONTROL MEASURES FROM STORM WATER

Control measures to be adopted are briefly discussed below:

- Check dams will be provided to prevent solids from wash off and screen if any from the mine related activities.
- Peripheral bunds will be erected on the outer edge of the abandoned benches before reclamation so that the soil is not carried away by storm water.
- A water gradient of about 1 in 100 will be kept at every bench towards inside of the bench to prevent formation of gullies in the bench slopes causing serious erosion.
- Chutes will be constructed by using local stone or masonry to guide the water in areas with loose soil to prevent erosion and uncontrolled descent of water wherever necessary.

Construction of garland drains around freshly excavated and with loose material is a solution of the second district of the second distri

Any areas with loose debris within the lease hold will be planted.

11.2.7 MEASURE TO MINIMISE ADVERSE EFFECTS ON WATER REGIME

During the process of mine rehabilitation and with the completion of backfilling, a water body will be created in the mined out pit which will act as water reservoir improving the ground water recharge, source of attraction for Chapter-XI Progressive and Final Mine Closure Plan

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

SAMUIV KUMAR SINGH Recognised Qualified Person No. 34011/(15)/2009-CPAM

fauna and will help in the maintenance of afforested areas. To enhance aesthetic appearance, parks and lawns will be made around the water body. Selected water quality parameters of ground and surface water resources within 10 km radius of the study area have been studied for assessing the water environment and evaluate anticipated impact of the proposed project. Secondary data shows that water quality in ground water sources is within permissible fimits

11.3 PROPOSED NALA DIVERSION

11.3.1 GARIA NALA

As explained in Chapter-IiI Clause 3.9

11.3.2 NALA A (BAIDHARA NALA) AND NALA B

As explained in Chapter-III Clause 3.9

11.3.3 IMPACT OF NALA DIVERSION ON LOCAL COMMUNITY

The project affected persons will be suitably rehabilitated in the R&R colony earmarked for them located nearby. The impact of diversion does not have any impact on water availability for the local community.

11.4 AIR QUALITY MANAGEMENT

There will be constant monitoring of air quality to keep within the prescribed norms. Dust pollutants are generated during blasting and while operating diesel equipment and these will be kept at minimum levels by ensuring good blast design and good equipment maintenance. Dust suppression system and dust extraction system will be in operative. Plantation around the quarry and CHP will put up a green belt for mitigating air pollution. External OB dump afforested

11.4.1 EXISTING AIR QUALITY STATUS

11.4.1.1 Construction Phase

The sources of air pollution in the region are vehicular traffic, dust arising from unmettalled village roads, domestic fuel burning and fugitive emissions. The ambient air quality test results are given in Table 11.5.

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27:09:10.

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Page XI-9

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TABLE 11.5 AMBIENT AIR QUALITY TEST RESULTS (µg/m³) (Sep. To Nov.2009)

LOCATION		RPN	Λ		SPM			SO	ž		NO _x	
LOCATION	Mi	Ma	98%il	Min	Max	98%il	Mi	Ma	98%il	Min	Max	98%il
Dulanga	34	44	44	98	127	127	76	9.7	9.7	9.2	12.8	12.7
Bendrichua	34	44	44	96	125	125	6.5	9.9	9.8	9.7	13.4	13.4
Rangalmund	36	46	46	102	131	130	8.7	10.	10.9	10.	14.3	13.9
Manoharpur	34	45	45	98	128	127	6.3	8.7	8.5	9.0	12.4	12.4
Kanika	38	47	47	108	135	135	8.0	11.	10.9	11.	14.9	14.9
Khunt Jharia	36	45	45	103	128	128	7.3	9.6	9.6	10.	12.7	12.7
Lamihara	35	44	44	99	127	126	6.1	9.7	9.7	9.8	12.8	12.7

11.4.1.2 IMPACT ON AIR QUALITY DUE TO MINING

The main activities, which generally contribute to air pollution in mining industry, are:

- Drilling and blasting
- Excavation and loading
- Transportation
- Crushing at CHP

The excavation / loading of the OB/coal will be done by hydraulic shovels. The transportation of OB and coal will be carried out in the same way as is generally done in OC mining i.e. by dumpers. Dust generation by this is anticipated. Coal crushing at CHP will also generate dust.

The opencast mining operations are generally prone to generation of high levels of SPM and to a limited extent SO₂. NOx and CO due to fossil fuel based vehicles, machines and blasting using explosive and fuel combustion effective pollution due to SO₂. NOx and SPM may result in irritation and inflammation of eyes and congestion of throat and oedema of lungs. Carbon monoxide can cause loss of haemoglobin in blood and subsequently stresses on those suffering from cardio-vascular and pulmonary diseases. High level of CO in the air is dangerous and may be fatal.

11.4.2 AIR POLLUTION MITIGATION MEASURES

The mining operations and related activities are anticipated to increase the levels of SPM and gaseous pollutants to a limited extent. The control measures to be adopted are mentioned in the following paragraphs.

Chapter-XI Progressive and Final Mine Closure Plan

SAMJIV KUMAR SINGH Recognised Qualified Person No. 34011/(15)/2009-CPAM RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

11.4.2.1 Controlling fugitive dust

Dust particles which are normally generated during various mining, crushing operation and transportation deteriorate the ambient air quality. Adequate control measures are, therefore proposed to be taken during mining operations, transportation and crushing/loading operations. These control measures are discussed as follows:

11.4.2.2 Mines

- Dust suppression systems (like water spraying) will be adopted at
 - Faces before and after blasting
 - Faces while loading
- Dust extraction systems will be used in drill machines and crushing plant.
- Dust generation will also be reduced by using sharp drill bits for drilling THE SANDEEP GUPTA holes; drills with flushing system. Africa Minder Secretary

11.4.2.3 Haul roads and stock-piles

- whites the many sampley of Cost Dust suppression system (like water spraying) would be adopted at roads which are used for transportation. Sprinklers (Whirling) have been proposed to be installed along the roads to suppress the dust
- Suitable dust extraction or suppression systems such as mist sprays with or without chemical will be provided at appropriate places for preventing dust pollution during handling and stockpiling of coal.

11.4.2.4 Preventing dispersal of air borne dust

In addition to the control measures proposed during mining and transportation operations, following steps will be taken to prevent air pollution due to airborne dust

- Dense tree belts will be planted around the mine and sites housing crushing and loading facilities.
- Plantation over already mined out area will be done after backfilling as per schedule (with minimum gap between excavation and afforestation)

Chapter-XI Progressive and Final Mine Closure Plan

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

Rough sed Qualified Person No. 2/10/11/(15)/2009-CPAM Dust masks will be provided as safety measure to the workers, engaged at dust generation points like drills, loading/unloading points crushers etc.

11.4.2.5 Measures to mitigate CO levels

All heavy and light vehicles shall be tested for pollutants concentration in their exhausts regularly and well maintained. Strict vigil will be kept in and around the operational area for any fire which shall be immediately controlled.

11.4.2.6 Measures to mitigate NOx levels

The main reasons of production of NOx gases are:

- a. Poor quality of explosive having large oxygen imbalance which can be due to following reasons:
 - Manufacturing defect
 - The use of expired explosives in which disintegration of ingredients has taken place.
- Incomplete detonation is caused mainly due to low primer: column ratio.

To ensure that NOx levels do not increase during the proposed mining operations, the following control measures will be adopted:

- i) Good quality explosives will be used for which the oxygen balance will be checked from time to time. The expired explosives will not be used for which a strict vigil will be kept on the date of manufacture. Even as a normal procedure, all explosives will be subjected to a visual inspection and if disintegrated ingredient are spotted, the explosives will not be used even if it is within expire date.
- Primer: Column ratio will be rationalised. The ratio thus established, for producing minimum NOx, will be adhered to.

The mine ambient air quality will be regularly tested to detect the presence of any pollutants above prescribed limits and appropriate measures will be adopted.

11.4.2.7 Measures to control noise pollution

The following control measures will be adopted to keep the ambient noise levels below permissible limits 75 dB (A).

Chapter-XI Progressive and Final Mine Closure Plan

SAMJIV KUMAR SINGH Recognised Qualified Person No. 34011/(15)/2009-CFAM RQP No. 34011/(15)/2009-CPAM dated 27:09:10.

- i. Provision and maintenance of thick tree belts to screen noise.
- ij. Avenue plantation within the project area to dampen the noise
- 111. Proper maintenance of noise generating machinery including the transport vehicles will be ensured.
- Provision of the air silencer to modulate the noise generated by the machines will be made wherever required.

To protect the workers from exposures to higher noise levels the following measures will be adopted.

- Provision of protective devices like ear muffs/ear plugs to those workers who cannot be isolated from the source of noise
- Confining the noise by isolating the source of noise
- iii. Reducing the exposure time of workers to the higher noise levels

11.4.2.8 Measures to reduce ground vibrations due to blasting and prevent fly rocks

The vibrations due to blasting will be studied before the commencement of mining operations and the recommendations/suggestion given as per the result of the said study will be strictly adhered to especially the charge per delay. SANDEEP GUPTA

WASTE MANAGEMENT

11.5.1 TYPE OF ROCKS

The entire block is covered with Barakar formation. This formation constitutes fine to coarse grained, white to grey feldspathic, micaceous sandstone, shale, fire clay and carbonaceous shale with economic coal horizons. The Karharbari formation is noticed towards the east of village Dulanga. The rocks are mostly coarse to gritty, carbonaceous sandstone pebbly at places with unaltered fresh pink feldspar and quartz pieces. Few very thin carbonaceous shale and coal bands are also intersected in some boreholes. The block is free from any igneous intrusions.

As per the geological report, no major, minor and trace elemental analysis of different rock types was available. The chemical analysis of coal indicates presence of non toxic minerals. The sandstones of Barakar Formation constitute major part of area forms a principal aquifer. The chemical analysis of ground water shows the trace element like Cu, Mn, Hg, Cd, Se, As, Pb, Zn, Cr, Al and B are present below deduction limit. The ground water quality

Chapter-XI Progressive and Final Mine Closure Plan

DAPUT KUMAR SINGH Ruse hised Qualified Person No. 34011/(15)/2009-CPAM

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

Page XI-13

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140

indirectly infers the source rocks characters. Hence, the rock of Dulanga block contains no toxic elements.

11.5.2 REMOVAL OF OVERBURDEN

As explained in Chapter-V, Clause No. 5.7.4

11.5.3 TYPES OF SOLID WASTE

Four types of solid waste are likely to be generated through mining activities.

These are:

- a) Overburden (both topsoil and waste)
- b) Sludge from washing HEMM
- c) Sludge created by mine water in settling pond.
- d) Municipal solid waste

The solid waste generated as mentioned above can have severe impacts on the health and surroundings of the area if proper management as suggested below is not done for handling these wastes. The solid waste dumping will lead to land degradation by occupying virgin area to an extent of about 73.84 Ha before the end of 3rd year. It will also cause an impact on topography and visual asthetics due to its 60 m height.

11.5.4 PROTECTIVE MEASURES AND MANAGEMENT OF SOLID WASTES

11.5.4.1 Management of Overburden

As explained in Chapter-V, Clause No. 5.7.4 & Clause 5.7.5. The generation and disposal of total waste quantities for the life of the mine are shown in **Table 11.6**

TABLE 11.6
CUMULATIVE WASTE DISPOSAL (TOPSOIL & OB)

End of	Mined Area (ha)	Surface Dump (ha)	Backfilling (Mm ³)	Top Soil (Mm³)	Total Waste (Mm³)	Backfilling Area (ha)
1st	29 06	4.5	0	0.17	4.67	0
2nd	37,47	10.5	0	0.17	10.67	0
3rd	35.4	13	2.5	0.17	15.67	24
4th	56.01	10.5	7.5	0.17	18.17	28
5th	39.28	0	18	0.17	18.17	15
Conceptual (24th)	510.78	38.50	355.50	3.65	359.15	413

Chapter XI Progressive and Final Mine Closure Plan

SAMULY KULLAR SINGH Recognised Qualified Person No. 34211/(15)/2009-CPAM RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

11.5.4.2 Protective measures

- The dump will be stabilised and afforested. The top soil will be used for spreading over backfilled area and over OB dump for plantation.
 The area of top soil stack will be afforested.
- The area of ground disturbance will be minimized by progressively rehabilitating disturbed land.
- Reclamation of land will be carried out by landscaping, re-vegetation etc. As far as possible the reclamation activities will be taken up concurrently with the mining operations. For re-vegetation, the native plants and saplings suitable for the existing soils and site conditions will be considered.

11.5.4.3 Steps to be taken to avoid Dump Slides

- Dumping of top soil will be avoided at the bottom of the dump as it leads to instability. Dumping of soil and clayey material will be done away from the working area that is on farther end of the dump so that formation of weak planes is avoided.
- Afforestation by planting trees will helped a lot in improving stability of dumps by preventing erosion.
- Construction of retaining walls
- Construction of drains for drainage
- Provision of jute mesh for facilitating grass or vegetative growth on slopes
- Provision of good soil mixed with manure and subsequent irrigation for growth of grass for anchorage on slopes. Plantation mixed with indigenous and fast growing plant species.
- The degraded area will be reciaimed and rehabilitated with local species of plantation in a phased manner
- Plantation will be carried out on waste dumps
- A belt of trees with thick canopy will be created along the mine boundary to intercept dust, gaseous pollutants and noise.

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

Page XI-15

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The void area of the excavated pit will ultimately become a water reservoir. The depth of the void will be reduced in the post mining stage by filling it with waste. This void area will also be suitably sloped, bunded and fenced.

11.5.4.4 Management of Sludge from Oil/Water separator

Effluent from workshops, vehicle washing etc shall will be passed through impermeable drains and will be treated in the oil/water separator. The skimmed oil & grease collected from oil and grease separator shall be sold to the authorised recycling vendors.

11.5.4.5 Management of Sludge created by mine water in settling pond

Sludge from the mine water settling pond will be removed periodically and will be backfilled along with the OB.

11.5.4.6 Sludge from domestic waste

Sludge from the domestic waste will be utilized as manure for the plantation in the mine lease area and on dump.

11.5.4.7 Management of Municipal solid waste

The municipal solid waste e.g. from canteen, etc will be composted and used as manure for plantation along with the domestic sludge.

11.5.4.8 LAND DEGRADATION CONTROL MEASURES

Land degradation is one of the major adverse outcomes of opencast mining activities and any effort to control adverse impacts is considered incomplete when appropriate land reclamation strategy is not adopted. Since the land degradation in this mine is partly in the form of excavated void and partly in the form of external and internal dumps, the reclamation strategy must include a programme for the reclamation of the disturbed land.

11.5.5 TOPSOIL MANAGEMENT

As explained in Chapter-V, Clause 5.7.5

11.5.6 MANAGEMENT OF COAL REJECTS FROM WASHERY

Not Applicable.

Chapter-XI Progressive and Final Mine Closure Plan

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

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SAMJIV KULTAN SINGH Recognised Qualified Person No. 34011/(15)/2009-CPAM

Page XI-16

11.6 DECOMMISIONING OF INFRASTRUCTURE

The infrastructure consists of substation, CHP, Workshops, Mine office, blasting shelters rest shelters etc. The surface master plan showing proposed Infrastructure is attached as **Plate IV**. The mine office & related infrastructure shall be handed over to state govt, for public use. The probable list of facilities which will be dismantled and those which will be retained has been furnished in **Table 11.7**

TABLE 11.7
LIST OF FACILITIES TO BE DISMANTLED OR RETAINED AT THE END OF LIFE
OF DULANGA COAL BLOCK

SI. No.	Facilities	Remarks (Dismantled/Retained)	Corpus fund for maintenance
1.	Service buildings/ Infrastructure		
a	Project/Mine Office	To be retained.	Provision has
b	Workshop	To be retained.	been made in
С	Store	To be retained.	fund requirements
d	Canteen	To be retained.	as provided in
е	First aid centre	To be retained.	Table 11.9
f	Rest shelter	To be retained.	
g	Training centre	To be retained.	20
h	Fire fighting station	To be retained.	18
ì	Pit head bath	To be retained.	TOWN TOWN IS ANDE
j	Magazines	To be retained.	ALES HEAT AND A
k	Environmental laboratory	To be retained.	क्षापदा संभावत । हिंद भारत संस्थाप । हिंद नह विस्ती । New D
1	Dispensary	To be retained	394 (000)
2	Mining Machinery	To be retained.	
3.	Pumps used in mines	To be retained	
4.	Electrical/mechanical equipments used in workshop or other places	To be retained.	
5.	CHP, conveyors and railway siding	To be retained	
6.	Sub-station	To be retained	
7.	Furniture	To be retained.	
8.	Approach road and Culverts	To be retained.	
9.	Haul road and Culverts	To be retained.	
10.	Water supply arrangement	To be retained.	

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27 09.10.

CAPUTY HUMAR SINGH Recharged Qualified Person No. 34011/(15)/2009-CPAM

11. Permanent Manpower	To be transferred to "Forest Area" in SE side or to any other projects of NTPC or VRS	
------------------------	---------------------------------------------------------------------------------------------------	--

11.7 DISPOSAL OF MINING MACHINERY

Nearly all the mining machinery will be used for dip side/indicated area. Only the scraps and non-usable machines, if any, will be auctioned.

11.8 SAFETY & SECURITY

Security Personnel will be detailed for a period of two years after mine closure for protecting new plantations in the reclamation area and look after the protective fence around the boundary of the mine to prevent any stray animal/man entering the area.

11.9 ECONOMIC REPERCUSSIONS OF CLOSURE OF MINE AND MANPOWER RETRENCHMENTS

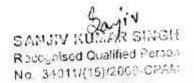
The mine will be one of the highly mechanized open cast mine and will require services of highly skilled and semi skilled work force.

After closure of mining operations, local residents employed in the mine may be offered jobs elsewhere in the running projects of the Company. Employees who would be retrenched would get adequate compensation as per existing labour laws/ golden hand sack / VRS or any other scheme of the Company prevailing at the time of mine closure. In addition, parting employees can also utilize their savings accumulated during the period of employment for their own post- employment resettlement.

Number of persons engaged in the satellite occupations connected to the mining industry will be estimated during the preparation of Final Mine Closure Plan which will be prepared 5 years prior to likely cessation of mining operation. Those persons will be taken care of as per the Company's policy.

The Company would endeavour for harmonious relations with PAPs, not only and the product of the

Chapter-Xi Progressive and Final Mine Closure Plan



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The Company would like continuance of the social welfare amenities created for the employees and PAPs and try to meet the expectations of the society under the given financial constraints. The persons will be imparted lectures on the financial mechanism for its sustenance after the mine closure.

11.10 TIME SCHEDULING FOR ABANDONMENT

Tentative details of likely closing activities with manpower requirement as envisaged below has been estimated based on the present mine closure plan. Actual closing activities and manpower requirement may change during the preparation of Final Mine Closure Plan which will be prepared 5 years before the likely cessation of mining operation. A time schedule for abandonment along with tentative manpower requirement has been shown in the bar chart given in **Table 11.8**.

TABLE 11.8
TIME SCHEDULE FOR ABANDONMENT ALONG WITH MANPOWER
REQUIREMENT FOR CLOSURE ACTIVITIES

St.	Activities to be		1st	Year	2nd	Year	3rd	Year	4th	Year
No.	undertaken		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
1.0	Mined Out Area & Waste Management	Manpower of NTPC								
1.1	Physical reclamation of internal and external dump (Levelling, Spreading of top soil, toe wall formation, drain etc.)	Outsourced (under the supervision of NTPC) Environmental Engr-1								
12	Physical reclamation of land of batter and haul road	Surveyor-2 Chainman-4	M			M				
1.3	Bio reclamation of item 1.1 & 1.2		KIN		KOM!	100				
1.4	Making safe approach up to the water lagoon for future uses	12	UPTA							
1.5	Barbed wire fencing श्रेदी	THE SKNDEEP C	Marin .		THE REAL PROPERTY.	1000		SHOW!		
2.0	Environmental Management (Air, Water, Waste, Noise	HI SHOT MINEST HER REPORT GOVI. OF REAL NEW Delhir	nd/3 16001		le de la constante de la const					
2.1	Thorough Inspection of external and stabilized internal dumps to find state of its stabilization & Bio reclamation.	Supervisors-2 in each shift Environmental Engineer-1 in each shift	· · · · · · · · · · · · · · · · · · ·							

Chapter-XI Progressive and Final Mine Closure Plan

2007 1.05.71 51.658 F. Co., I sed Qualified Ferson No. 31011(15)/2009-CPAM

RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

Revised Mining Plan - Dulanga Opencast Coal Project - NTPC

SI.	Activities to be		1st	Year	2nd	Year	3rd	Year	4th	Year
No.	undertaken		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
2.2	Action to stabilize & vegetate uncovered patches, if any	Job Outsourced								
2.3	Inspection of garland drains & bunds around external dumps to prevent leachatte water from entering natural water courses directly	Supervisors-2 in each shift Mining Engineer-1 in each shift								
2.4	Inspection of embankment to prevent entry of uncontrolled water to mine	Supervisors-2 in each shift Engineer-1 in each shift								
2.5	Strengthening of embankment									
2.6	Quarterly sampling of water to know its quality status	Lab Assistant- 1 Helper-1				II.				
2.7	Record keeping, monitoring and reporting	Surveyor-1 Chainman-3								
3.0	Management of Infrastructure & Mining Machineries			and the same						
3,1	Decommissioning of structurals & semi permanent constructions	Job Outsourced Civil Engineer- 1,								
3.2	Renovation of Mine/ Project office, Canteen, Training centre, Rest shelter etc.	Supervisor-1, Surveyor-1, Chainman-2	1	0						
3.3	Cleaning of land for vegetation over the area	3E	apuen i 2 Arribra	2	GUPTA rolary				IC .	
3.4	Dismantling of machineries	्य स	a Jisan				1798	15/19	210	
4.0	Actions for safety & security of local community due to abandonment of the mine or part of the mine									

Chapter-XI Progressive and Final Mine Closure Plan

SAMULY KULTAR STAGH Rocognised Qualified Person No. 34011/(15)/2009-CPAM RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

SI.	Activities to be		1st	Year	2nd	Year	3rd	Year	4th	Year
No.	undertaken		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
4.1	Thorough inspection of the mined out area, O.B. dumps for assessing the closure job.	Supervisors-2 in each shift Mining Engineer-1 in each shift						, ian		Tien i
4.2	Action, if required, for making safe, the drainage areas, fire areas etc.									
4.3	Making 2 metre high pucca wall on the slope of internal dumps, along the estimated water level	Supervisor-1 in each shift Civil Engineer- 1 in each shift								
4.4	Making 2 meter high pucca wall around the top edge of the mined out area, where immediate void exists at the quarry edge.									
4.5	Making 2 meter high pucca wall around the external OB Dump									
4.6	Closing with walling and gates in the haul road, to prevent advertant entry into water lagoon	Supervisor-1 in each shift				संदीय गुप अवस्य कोयता ग्रा	4Ung	Subres	IPTA Iny	*
4.7	Filling the haul road up to ground level, from surface up to sealing gate					ाई विस्तर	/New Do	Of Inqu	2) 1	
4.8	Survey of the total project area for updating mine plans Under Coal Mine Regulation	Supervisors-2 in each shift Mining Engineer-1 in each shift								
5.0	Social & Economic Aspects									
5.1	Approval of one time grant as corpus fund for maintenance of some C.S.R activities.	Engineer-1 HR executive/staff -2						Na Carlo		
7	Sub-total								ALL PROPERTY.	1
6.0	Execution & Supervisor									

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27 09.10.

DAMAIV KUMAR SINGH Recognised Qualified Person No. 21011/(15V2009-CPAM

SI.	Activities to be		1st	Year	2nd	Year	3rd	Year	4th	Year
No.	undertaken	- 5	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
6.1	Execution & Supervision of the activities by mining personal.	Mining Engineer-1 HR executive/ staff-2								
7.0	Miscellaneous charges including power cost, deployment of security personal, 3 years post closure environmental monitoring, supervision, power cost etc.	Engineer-2 HR executive/ staff-3								

11.11 ABANDONMENT COST

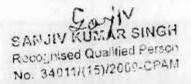
11.11.1 TENTATIVE ABANDONMENT COST

Tentative cost of likely closing activities as envisaged below has been estimated considering base date as Feb '2011 at current cost. Actual closing activities and activity wise costs may change during the preparation of Final Mine Closure Plan which will be prepared 5 years before the likely cessation of mining operation. A time schedule for abandonment along with tentative fund requirement has been shown in the bar chart given below at **Table No** 11.9

TABLE 11.9
ESTIMATED FUND REQUIREMENT FOR CLOSURE ACTIVITIES (WITHOUT ESCALATION, BASE YEAR-FEB '2011)

SI.	Activities to be	Fund	1st	Year	2nd	Year	3rd	Year	4th	Year
No.	undertaken	Require ment	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
1.0	Mined Out Area & Waste Management	Total (₹. Lakh)								
1.1	Physical reclamation of internal and external dump (Levelling, Spreading of top soil, toe wall formation, drain etc.)	79.65	APP TO	1						
1.2	Physical reclamation of land of batter and haul road	52.62	अवर स्रोधः भार	देहिंदी स्था १ व उस हा संस्थित इस्टी स्थान	100 200 200 200 200 200 200 200 200 200	a Cost ndia 10001				

Chapter-XI Progressive and Final Mine Closure Plan



RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

1.3	Bio reclamation of item 1.1 & 1.2	64.69	
1.4	Making safe approach up to the water lagoon for future uses	120.37	
1.5	Barbed wire fencing	170.66	
	Sub-total	487.99	THE PARTY OF THE P
2.0	Environmental Management (Air. Water, Waste, Noise etc)	0.00	
2.1	Thorough inspection of external and stabilized internal dumps to find state of its stabilization & Bio reclamation.	463.76	
2.2	Action to stabilize & vegetate uncovered patches, if any	69.56	
2.3	Inspection of garland drains & bunds around external dumps to prevent leachatte water from entering natural water courses directly	463.76	
2.4	Inspection of embankment to prevent entry of uncontrolled water to mine	463.76	
2.5	Strengthening of embankment	371.01	
2.6	Quarterly sampling of water to know its quality status	18.55	
2.7	Record keeping, monitoring and reporting	324.63	
	Sub-total	2175.02	7
3.0	Management of Infrastructure & Mining Machineries	0.00	जार नावर / U nder Secretary कोटल मंत्रीलग / Ministry of Coal भारत संस्कार / Govt. of India
3.1	Decommissioning of structurals & semi- permanent constructions	284.75	Bildel /New Delhi-110001

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27,09.10.

R. M. J. Kolli AR DITIGH R. M. Jised Qualified Person No. 34011/(15)/2009-CPAM

3.2	Renovation of Mine/ Project office, Canteen, Training centre, Rest shelter etc.	18,55	
3.3	Cleaning of land for vegetation over the area	9.28	
3.4	Dismantling of machineries	92,75	
	Sub-total	405.32	
4.0	Actions for safety & security of local community due to abandonment of the mine or part of the mine	0.00	
4.1	Thorough inspection of the mined out area, O.B. dumps for assessing the closure job.	324.63	
4.2	Action, if required, for making safe, the drainage areas, fire areas etc.	92.75	
43	Making 2 metre high pucca wail on the slope of internal dumps, along the estimated water level.	148.40	
4.4	Making 2 meter high pucca wall around the top edge of the mined out area, where immediate void exists at the quarry edge.	185 50	
4.5	Making 2 meter high pucca wall around the external OB Dump	92.75	
46	Closing with walling and gates in the haul road, to prevent advertant entry into water lagoon	0.46	High To CANDER GUPTA
4.7	Filling the hauf road up to ground level, from surface up to sealing gate.	4,64	16 (600) - 1000 - 1000

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

4.8	Survey of the total project area for updating mine plans Under Coal Mine Regulation.	463.76	
	Sub-total	1312.90	
5.0	Social & Economic Aspects	0.00	
5.1	Approval of one time grant as corpus fund for maintenance of some C.S.R activities.	793 49	
	Sub-total	793.49	
6.0	Execution & Supervisor	0.00	
6,1	Purchasing / Hiring of equipment for closure activities etc.	92.75	
6.2	Execution & Supervision of the activities by mining personal.	463.76	
	Sub-total	556.51	
7.0	Miscellaneous charges including power cost, deployment of security personal, 3 years post closure environmental monitoring, supervision, power cost etc.	375.36	
17	Total	6106.59	10
11.11	CONTRACTOR DECISION		Tidly Trail Saberp (Saberp (Saberp (Saberp (Saberp (Saberp (Saber (Sabe

11.11.2 ANNUAL CLOSURE COST

TITE HEAR / Gavt. of India The annual closure cost has been calculated as per new guidelines issued by our MoC (vide letter no 55011-01-2009 CPAM dated 27/08/2009 & 18 02 2011). As per circulated guidelines of MoC the closure cost for an opencast mine is to be modified based on the Wholesale Price Index (WPI) as notified by Govt. of India.

The WPI for all commodities Issued from Office of Economic Advisor, Ministry of Commerce and Industry, Govt. of India (Base date: 2004-05) was 129.60 in Aug'09 and 148.10 in Feb'11. The closure cost was ₹.6.00 Lakhs per ha in

Chapter-XI Progressive and Final Mine Closure Plan

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RQP No. 34011/(15)/2009-CPAM dated 27,09.10.

the Roman Loveth Fire grased Qualified Person No. 34011/(15)/2009-CFAM Aug'09. The current closure cost has been arrived by multiplying ₹. 6.00 Lakhs per ha by the ratio of WPI in Feb'11 and WPI in Aug'09 which comes to be ₹. 6.86 Lakhs per ha. The calculation methodology is as follows:

Total lease hold area Considered for mine closure (A)

: 890 63 ha

Mine closure cost per Ha for opencast mine in Aug'09

: ₹. 6.00 Lakhs

Mine closure cost per Ha for opencast mine in Feb'11(B)*

: ₹. 6.86 Lakhs

Life of the mine (C)

, 26 years

(Incl. 2 years of construction period)

Annual base price [(A X B)/C] (for 1st year)

: ₹. 2.35 Crores

Total closure cost for opencast mine

. ₹.120.05 Crores

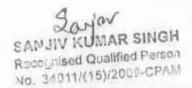
(Compounding @ 5% annual escalation)

The year wise closure cost is tabulated in Table 11.10.

TABLE 11.10
YEAR WISE AMOUNT TO BE DEPOSITED IN ESCROW ACCOUNT

YEAR	AV. COST PER ANNUM (₹. CRORES)	YEAR WISE EXPENDITURE WITH 5 % ESCALATION (₹.CRORES)
C1	2.35	2.35
C2	2.35	2.47
P1	2.35	2.59
P2	2.35	1 () 2.72
P3	2.35	(X 2.85
P4	2.35	THE SANDEEP BUOTA
P5	2.35	at the (United Sec. 2) (Sal
P6	2.35	बदा हरात्य (जिल्लाका) बारत बश्कार (Con. olympia वं किसी (Now Dath) राष्ट्रिय
P7	2.35	3.47
P8	2.35	3.64
P9	2.35	3.83
P10	2.35	4.02
P11	2.35	4.22

Chapter-XI Progressive and Final Mine Closure Plan



RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

.57		
.01		2
.01	-	1.7
		V.F

YEAR	AV. COST PER ANNUM (₹. CRORES)	YEAR WISE EXPENDITURE WITH 5 % ESCALATION (₹.CRORES)
P12	2.35	4.43
P13	2.35	4.65
P14	2.35	4.88
P15	2.35	5.13
P16	2.35	5.38
P17	2.35	5.65
P18	2.35	5.94
P19	2,35	6.23
P20	2.35	6.54
P21	2.35	6.87
P22	2.35	7.21
P23	2.35	7.57
P24	2.35	7.95
TOTAL	61.07	120.05

Total Estimated cost for completing the envisaged closure activities comes to ₹.120.05 Crores. Estimated cost will be modified based on WPI as notified from Govt, of India from time to time.

11.12 FINANCIAL ASSURANCE

As per guidelines for Mine Closure Plan, NTPC shall take following actions for ensuring the financial assurance to complete the mine closure activities!

· Opening of a Escrow Account

The proponent shall open an escrow Account with any Scheduled Bank. The beneficiary of this account shall be Coal Controller Organisation (on behalf of central Government). The proponent shall deposit the amount detailed in previous chapter, on yearly basis into this Escrow account.

Estimated cost will be modified based on WPI as notified by Government of India from time to time.

Condition for operating the Escrow Account

An agreement, outlining detailed terms and conditions of operating the Escrow account, shall be finalized and executed amongst the project owners, concerned Bank and the Coal Controller. The agreement shall

Chapter-XI Progressive and Final Mine Closure Plan

Sauge MUMAR SINGH Isod Qualified Person No. 210111(15)/2009-CPAM RQP No. 34011/(15)/2009-CPAM dated 27.09.10.

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Annexure-VI



Grassing Activities along slope of Non-Active Overburden Dump.

Khapurikacchar OB Dump View







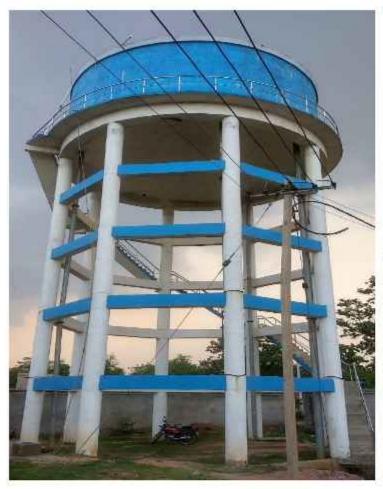
View of Khapurikacchar from OB Dump







OVER HEAD TANK









WATER TREATMENT PLANT

UV PURIFIER IN R&R COLONY

Garland Drains & Sedimentation Pond



Garland Drain



Garland Drain connected to settling pond



Dust Suppression Measures



Water Sprinkling on Haul Roads inside Mines



Fixed Type Sprinkling on Haul Roads Near CHP



Interlocked Dust Suppression arrangement in Surface Miner



Wet Drilling Arrangement

Silo Loading System with PLC based control system and transportation through Rail Wagon





ANNEXURE - X

Sewage Treatment Plant of 1200 KLD at Darlipali Township



OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE) & CHIEF WILDLIFE WARDEN, ODISHA, BDA APARTMENT, 5TH FLOOR, PRAKRUTI BHAWAN, NILAKANTHA NAGAR, BHUBANESWAR

Ph. No.0674-2564587, FAX No.0674-2565062 (Website:odishawildlife.org, E. mail: odishawildlife@gmail.com)

Memo No.748 () /1 WL(C)SSP-270/2012 Dated, Bhubaneswar, the Sept, 2014

To

The Principal Chief Conservator of Forests, Odisha, Bhubaneswar

Sub:

Diversion of 304.75 hectares (originally applied 323.09 hectares) of forest land (273.68 hectares within the Dulanga coal block and 31.07 hectares of forest land outside the coal block) including 4.94 hectares of forest land coming within the safety zone area in Dulanga Coal Mining Projects spreads over Revenue villages of Dulanga, Majhapara, Manoharpur, Kathafali, Beldihi, Khuntijhria and Khapurikachhar and Dhanuadihi RF, Giripahad RF and Satparlia RF in IB valley coalfields in favour of M/s National Thermal Power Corporation Ltd. in Sundargarh Forest Division of Sundargarh District, Odisha

This is to inform you that a Site Specific Wildlife Conservation Plan at a financial outlay of ₹686.00 lakh in respect of the above Coal Mining project of M/s NTPC Ltd. has been approved and communicated to you in this office memo No.9597 dt 3.12.2013, in compliance to the Terms of Reference (TOR) No.(xv) prescribed in letter No.J-11015/1140/2007-IA.II(M) dt 17.1.2008 of Ministry of Environment & Forests, Govt. of India while considering the proposal for opening a new opencast coal mine project of 8 MTPA capacity in Ib Valley Coalfields in Sundargarh district, Odisha by M/s NTPC Ltd.

Subsequently, on the above diversion proposal, Govt. of India, MoEF vide their letter F. No.8-23/2013-FC dt 10.1.2014 granted stage-I approval alongwith some conditions to be fulfilled before grant of Stage-II forest clearance. Out of those, condition No. (xv) & (xvi) deal with deployment of watchers alongwith communication equipments to detect wild animals/elephants and warn the loco driver about movement of animals.

In the Site Specific Wildlife Conservation Plan approved for the above project, provisions have been made for engagement of watchers as well as supply of communication equipments to them. However, keeping in view of the observation of Govt. in F&E Deptt. vide their memo No.15413/F&E dt 21.8.2014, additional provisions at a cost of ₹27.29 lakh have been made in the Site Specific Wildlife Conservation Plan. These together with the financial outlay already approved comes to ₹713.29 lakh (Rupees seven crore thirteen lakh twenty thousand) only for the following activities.

(i) For the Project Area:

(a)	Activities to be implemented in project	area by	₹236.30 lakh
40	M/s NTPC Ltd. in Sundargarh Division as	per the	
	SSWLCP already approved		HOWEN DA HADDOON
(b)	Cost of engagement of watchers in loc and supply of binoculars and search light		₹25.13 lakh
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-2-(ii) For the Project Impact Area: (a) For activities to be implemented by DFO, ₹449.70 lakh Sundargarh Divn. in project impact area as per the SSWLCP already approved (b) Cost of communication equipments and search ₹2.16 lakh lights to be supplied to watchers Sub -Total: ₹451.86 lakh Grand Total (i + ii): ₹713.29 lakh Various activities in the lease hold area will be executed by the Project proponent under the guidance of the Divisional Forest Officer, Sundargarh Divn. An additional amount of ₹2.16 lakh (already deposited ₹449.70 lakh) may be deposited in the CAMPA fund meant for the purpose for implementation of various activities within the project impact area by the Forest Deptt. as envisaged in the plan. All other conditions of the approval letter issued vide this office memo No. 9597 dt 3.12.2013 remain unchanged. Addendum to the already approved Site Specific Wildlife Conservation Plan incorporating the provisions of watchers and communication equipments in compliance to condition No. (xv) & (xvi) of stage-I approval order of Govt. of India, MoEF vide their letter F. No.8-23/2013-FC dt 10.1.2014 is approved herewith. Encl: 2 copies of addenda as above Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha /date 30-09-2014 Copy forwarded to the Divisional Forest Officer, Sundargarh Division for information and necessary action in continuation of this office memo No.9598 dt 3.12.2013. Encl: As above Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha Memo No. 7482 /date 30-09-2014 Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle for information and necessary action in continuation of this office memo No.9599 dt 3.12.2013. Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha Memo No. 7483 /date 30-09, 2014 Copy forwarded to the Special Secretary to Government of Odisha, F & E Deptt., Bhubaneswar for favour of information and necessary action with reference to Deptt. memo No.10F(cons)84/2014-15413/F&E dt 21.8.2014. Encl: As above Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha /date 30-09.2014 Copy forwarded to the Addl. General Manager (I/c), NTPC Ltd., Dulanga

Coal Mining Project, Sundargarh for information and necessary action with reference to

his letter dated 13.9.2014.

Encl: As above

Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha



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NTPC Limited

Talcher Super Thermal Power Station P.O. DEEPSHIKHA 759147

Ref: 00100/2013269952/13.03.2014

To, AD-HOC CAMPA ACCOUNT NO SBO 1025203 CORPORATION BANK GOI, MOEF, PARYAVARAN BHAVAN CGO COMPLEX LODHI ROAD **NEW DELHI 110003**

Date: (3/03/2014

Dear Sir / Madam,

We are pleased to inform you that the company has arranged to remit the amount as per the following details, directly to your bank CORPORATION BANK, LODHI COMPLEX BRANCH account number LOUBT SB01025222.

Total Amount Paid

44,970,000.00

Amount (in words): Rupees Four Crore Forty-Nine Lakh Seventy Thousand Only.

The amount has been credited to your bank account as indicated above though Electronic Clearing Service (ECS) and therefore, no service charge is deductible by your bank. to padacticis by w

If the amount is not received in your account kindly contact the person mentioned below giving the above reference number.

Your's Faithfully,

Designation (n) col 2014

UTR NOT SBIN 714073448783

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE) & CHIEF WILDLIFE WARDEN, ODISHA, BDA APARTMENT, 5TH FLOOR, PRAKRUTI BHAWAN, NILAKANTHA NAGAR, BHUBANESWAR

Ph. No.0674-2564587, FAX No.0674-2565062 (Website:odishawildlife.org, E. mail: odishawildlife@gmail.com)

Memo No.748 () /1 WL(C)SSP-270/2012 Dated, Bhubaneswar, the Sept, 2014

To

The Principal Chief Conservator of Forests, Odisha, Bhubaneswar

Sub:

Diversion of 304.75 hectares (originally applied 323.09 hectares) of forest land (273.68 hectares within the Dulanga coal block and 31.07 hectares of forest land outside the coal block) including 4.94 hectares of forest land coming within the safety zone area in Dulanga Coal Mining Projects spreads over Revenue villages of Dulanga, Majhapara, Manoharpur, Kathafali, Beldihi, Khuntijhria and Khapurikachhar and Dhanuadihi RF, Giripahad RF and Satparlia RF in IB valley coalfields in favour of M/s National Thermal Power Corporation Ltd. in Sundargarh Forest Division of Sundargarh District, Odisha

This is to inform you that a Site Specific Wildlife Conservation Plan at a financial outlay of ₹686.00 lakh in respect of the above Coal Mining project of M/s NTPC Ltd. has been approved and communicated to you in this office memo No.9597 dt 3.12.2013, in compliance to the Terms of Reference (TOR) No.(xv) prescribed in letter No.J-11015/1140/2007-IA.II(M) dt 17.1.2008 of Ministry of Environment & Forests, Govt. of India while considering the proposal for opening a new opencast coal mine project of 8 MTPA capacity in Ib Valley Coalfields in Sundargarh district, Odisha by M/s NTPC Ltd.

Subsequently, on the above diversion proposal, Govt. of India, MoEF vide their letter F. No.8-23/2013-FC dt 10.1.2014 granted stage-I approval alongwith some conditions to be fulfilled before grant of Stage-II forest clearance. Out of those, condition No. (xv) & (xvi) deal with deployment of watchers alongwith communication equipments to detect wild animals/elephants and warn the loco driver about movement of animals.

In the Site Specific Wildlife Conservation Plan approved for the above project, provisions have been made for engagement of watchers as well as supply of communication equipments to them. However, keeping in view of the observation of Govt. in F&E Deptt. vide their memo No.15413/F&E dt 21.8.2014, additional provisions at a cost of ₹27.29 lakh have been made in the Site Specific Wildlife Conservation Plan. These together with the financial outlay already approved comes to ₹713.29 lakh (Rupees seven crore thirteen lakh twenty thousand) only for the following activities.

(i) For the Project Area:

(a) Activities to be in	inplemented in project area by	₹236.30 lakh
	Sundargarh Division as per the	
SSWLCP already		70F 40 L LL
	nent of watchers in loco cabin oculars and search lights	₹25.13 lakh
Section of the sectio	Sub -Total:	₹261.43 lakh

-2-(ii) For the Project Impact Area: (a) For activities to be implemented by DFO, ₹449.70 lakh Sundargarh Divn. in project impact area as per the SSWLCP already approved (b) Cost of communication equipments and search ₹2.16 lakh lights to be supplied to watchers Sub -Total: ₹451.86 lakh Grand Total (i + ii): ₹713.29 lakh Various activities in the lease hold area will be executed by the Project proponent under the guidance of the Divisional Forest Officer, Sundargarh Divn. An additional amount of ₹2.16 lakh (already deposited ₹449.70 lakh) may be deposited in the CAMPA fund meant for the purpose for implementation of various activities within the project impact area by the Forest Deptt. as envisaged in the plan. All other conditions of the approval letter issued vide this office memo No. 9597 dt 3.12.2013 remain unchanged. Addendum to the already approved Site Specific Wildlife Conservation Plan incorporating the provisions of watchers and communication equipments in compliance to condition No. (xv) & (xvi) of stage-I approval order of Govt. of India, MoEF vide their letter F. No.8-23/2013-FC dt 10.1.2014 is approved herewith. Encl: 2 copies of addenda as above Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha /date 30-09-2014 Copy forwarded to the Divisional Forest Officer, Sundargarh Division for information and necessary action in continuation of this office memo No.9598 dt 3.12.2013. Encl: As above Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha Memo No. 7482 /date 30-09-2014 Copy forwarded to the Regional Chief Conservator of Forests, Rourkela Circle for information and necessary action in continuation of this office memo No.9599 dt 3.12.2013. Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha Memo No. 7483 /date 30-09, 2014 Copy forwarded to the Special Secretary to Government of Odisha, F & E Deptt., Bhubaneswar for favour of information and necessary action with reference to Deptt. memo No.10F(cons)84/2014-15413/F&E dt 21.8.2014. Encl: As above Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha /date 30-09.2014 Copy forwarded to the Addl. General Manager (I/c), NTPC Ltd., Dulanga

Coal Mining Project, Sundargarh for information and necessary action with reference to

his letter dated 13.9.2014.

Encl: As above

Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha



NTPC Limited

Talcher Super Thermal Power Station P.O. DEEPSHIKHA 759147

Ref: 00100/2013269951/13.03.2014

AD-HOC CAMPA ACCOUNT NO SBO 1025203 CORPORATION BANK GOI, MOEF, PARYAVARAN BHAVAN CGO COMPLEX LODHI ROAD **NEW DELHI 110003**

Date: 13/03/2014

Dear Sir / Madam,

We are pleased to inform you that the company has arranged to remit the amount as per the following details, directly to your bank CORPORATION BANK, LODHI COMPLEX BRANCH account number SB01025222.

Total Amount Paid

Amount (in words): Rupees Three Crore Twenty-Seven Lakh Eighty-Four Thousand Sixty Only.

The amount has been credited to your bank account as Indicated above though Electronic Clearing Service (ECS) and therefore, no service charge is deductible by your bank.

If the amount is not received in your account kindly contact the person mentioned below giving the above reference number.

Your's Faithfully,

Designation and onlean

INNO. & Dale of port of RTGS is regod to be mentioned.

CN 21164876

UTR NO. SBIN 714073453867

MONITORING REPORT

(April 2023 - September 2023)

THIRD PARTY MONITORING AND EVALUATION OF SITE SPECIFIC WILDLIFE CONSERVATION ACTIVITIES IN DULANGA COAL MINING PROJECT OF NTPC LTD, SUNDARGARH





Submitted to
Additional General Manager (Mining)
NTPC Dulanga Coal Mining Project, Sundargarh

Submitted by
Dr N. Bhol (Principal Investigator)
College of Forestry
Odisha University of Agriculture & Technology
Bhubaneswar- 751 003

MONITORING REPORT

(April 2023 - September 2023)

THIRD PARTY MONITORING AND EVALUATION OF SITE SPECIFIC WILDLIFE CONSERVATION ACTIVITIES IN DULANGA COAL MINING PROJECT OF NTPC LTD, SUNDARGARH

Odisha University of Agriculture and Technology, Bhubaneswar has been engaged by the authorities of NTPC Ltd, SSC- Coal Mining (Ranchi) as 3rd Party in February 2022 for monitoring and evaluation of site specific wildlife conservation activities in Dulanga Coal Mining Project of NTPC, Sundargarh. Dr Nirakar Bhol, I/C of Silviculture & Agroforestry Department is the Principal Investigator and Dr Kumaresh Behera, Assistant Professor, Department of Livestock Production & Management, OUAT is the Co-Principal Investigator of the monitoring team.

The monitoring and evaluation works have been carried out by OUAT scientists since March 2022 and two monitoring reports have been submitted earlier. During April 2023-September 2023, a series of communication has been made with persons concerned dealing the assigned activities of Dulanga Coal Mining Project, Khapuriakachhar, Sundargarh over phone and email. Also communication has been made with the Divisional Forest Office, Sundargarh and its field officials regarding this work. The monitoring team has visited the sites and physically verified the progress of works and documents. The team has visited the office of both Dulanga Coal Mining Project and DFO, Sundargarh and discussed with the concerned staff. The following progress of activities has been observed during April 2023 - September 2023.

A. CORE ZONE ACTIVITIES

The Core Zone activities have been undertaken by Dulanga Coal Mining Authority of NTPC itself since 2018-19. The progress of activities done by NTPC till 31.03.2023 has been reported in the last two reports. The activities done during April 2023 - September 2023 are as follows.

1. Plantation development

Maintenance of plantation over 210 ha with differential cost as in EMP over reclaimed area, over burden dump and safety zone has been done. New plantations of species like Karanj, Neem, Siris and Acacia has been taken up. The plantation activists have involved following costs.

Month	Cost incurred (Rs)	
April 2023	41365	
May 2023	40355	
June 2023	38864	
July 2023	38864	
August 2023	41828	
September 2023	39390	





Raising of new plantation of Karanj

Maintenance of previous year's plantation

A new plantation programme has been initiated w.e.f. 1.9.2023 with a cost of Rs 11,765,537/-. This plantation will be developed along railway line and vacant space adjacent to safety zone near Khapurikachhar area of DLMP. The work has been assigned to Industrial Plantation Division, Raigarh, Chhatisgarh (a plantation unit of Chhatisgarh Govt.). The cost includes maintenance of plantation for 50 months also.

The progress of work is satisfactory. It has been advised not to plant Acacia (Acacia auriculiformis) further. Rather species like Subabul (Leucaena leucocephala) and Kanchan (Bauhinia varigata), Horse tamarind/ Bilati kaian (Inga dulcis), Jamun (Syzygium cumini), Fig (Ficus glomerata) or other plants suitable for wildlife should be planted.

2. Engagement of Van Sahayak

Three numbers of Van Sahayak have been engaged which were sanctioned in the project. The following amount has been paid to them during the assessment period.

Month	Cost incurred (Rs)	
April 2023	42347.22	
May 2023	49711.95	
June 2023	189639.48	
July 2023		
August 2023		
September 2023		

The progress of this activity is satisfactory.

3. Engagement of Van Pal

One Van Pal has been engaged which is sanctioned in the project to supervise nursery and plantation activities. The following amount has been paid to him during the assessment period.

Month	Cost incurred (Rs)	
April 2023	16519.76	
May 2023	19392.77	
June 2023	73979.75	
July 2023		
August 2023		
September 2023		

The progress of this activity is satisfactory.

4. Fire watchers

Five number of fire watchers have been engaged. The following amount has been paid to them during the assessment period.

Month	Cost incurred (Rs)	
April 2023	13768	
May 2023	13768	
June 2023	13768	
July 2023	13768	
August 2023	14765	
September 2023	14294	

The progress of this activity is satisfactory.

Grass seeding

There is target of grass seeding of 100 ha area in the project area. During this reported period no grass seeding has been done. In 2021-22, an area 2.77 ha has been covered under grass seeding. As explained by the officials, the dumping site of overburdens is currently in active stage for which this work has not been undertaken.

6. Photo Voltaic Fencing

Fencing with normal barbed wire has been done for a length of 12.5 km earlier against the provision of 15 km Photo Voltaic Fencing. As per the requirement of site, the rest fencing may be done.

7. Water harvesting structure

In the current period of reporting no water harvesting structure has been made. Water harvesting structures have already been developed as per EMP.

8. Water pollution abatement

No fresh infrastructure for water pollution abatement has been established during the current reporting period. Previously one Effluent Treatment Plant of 50 KLD and Sewerage Treatment Plant of 500 KLD have been established for water pollution abatement and those are running successfully.

9. Minimization of man-animal conflict during road transportation

No new signboards have been erected during the present period to aware people and minimize man-animal conflict during road transportation. However, earlier some signboards have been displayed in important points for this cause. The officials have been asked to erect some new awareness boards in strategic points to minimize man-animal conflict.

Garbage control

Garbage control work is being done in every month. During the assessment period, Rs 1,315,166/- has been spent for this purpose.

11. Weed control

The following amounts have been spent towards weed control.

Month	Cost incurred (Rs)
April 2023	36135
May 2023	37938
June 2023	33381
July 2023	25491
August 2023	32449
September 2023	32579

12. Training and awareness promotion

An awareness promotion activity has been conducted on 5.6.2023 - World Environment Day and an amount of Rs 30539/- has been spent for this.

13. Protection and monitoring vehicle

A vehicle (Bolero) has been provided for protection and monitoring work of site specific wildlife conservation activities. In six months an amount of Rs 380150/- has been spent for this.

14. Raising of Forest Nursery

A forest nursery has been established inside the project area to raise different species of trees for plantation development.



Forest Nursery inside project area of Dulanga Coal Mining Project

Remarks

The overall progress of activities in core zone is satisfactory. The following aspects are to be taken care in future:

- The assignment of developing of new plantations awarded to Industrial Plantation
 Division, Raigarh, Chhatisgarh with an outlay of Rs 11,765,537/- should be monitored
 properly. The agency is to be directed to raise plant species which will be helpful for
 conservation of wildlife.
- Grass seeding of overburden areas should be done as early as possible.
- Some signboards should be erected at strategic points to aware people and minimize man-animal conflict during road transportation.
- Environment awareness programmes such as celebration of Earth Day- 22nd April,
 World Environment Day 5th June, Vanamahotsava 1st week of July, Wildlife Week 1st
 week of October, etc. may be conducted among students and staff.

B. BUFFER ZONE ACTIVITIES

Sundargarh Forest Division is the implementing agency for Buffer Zone activities. Dulanga Coal Mining Project authorities have deposited Rs 4,49,70,000.00 on 14.03.2014 to State Forest Department to carry out buffer zone activities. This money has been given to utilize during planned 10 years period for following activities.

- GIS mapping to monitor forest fragmentation
- Plantation in degraded forest (ANR) over 150 ha
- Fire line 15 km layout
- Fire watching activities
- Habitat improvement through bamboo plantation over 320 ha/over existing forest land including protection and enhancement of regeneration for 10 years
- Excavation of water holes with saltlicks
- Erosion control trenches and check dams on nallas
- 8. Biodiversity monitoring every alternate year and documentation
- 9. Elephant tracking activities
- Solar lighting for 10 villages
- Corpus fund
- Cattle immunization
- 13 Awareness activities
- Anti-poaching and anti-smuggling measures/ Providing communication equipments and search lights to watchers

Unfortunately none of the above activities were undertaken by the Sundargarh Forest Division till 31.03.2023. After getting this monitoring assignment, the OUAT team pursued the matter at the office of DFO, Sundargarh and at the office of PCCF (Wildlife), Bhubaneswar. The following progress has occurred in the current assessment period from 1.4.2023 to 30.9.2023.

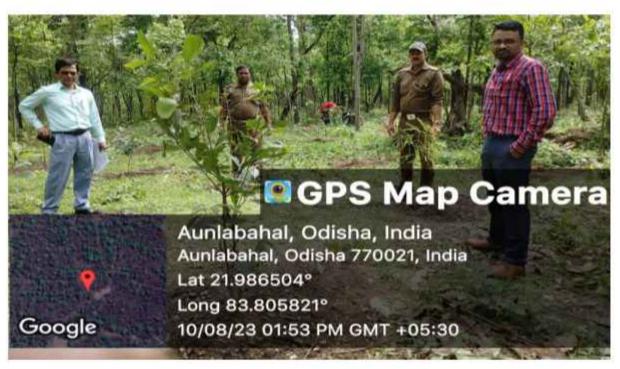
1. GIS mapping to monitor forest fragmentation

This work has not yet been taken up.

Plantation in degraded forest (ANR) over 150 ha

ANR planting over 50ha in Hemgir beat of Hemgir Range and 50ha in Laikera beat of Gopalpur Range has been carried out. The plant species such as jack fruit, arjun, bamboo, jamun, bahada, asana, banyan, peepal, aonla, mango and tamarind have been planted. Hemgir Range has spent Rs 7,30,775/- and Gopalpur Range has also spent Rs 7,30,775/- for such activities by 30.9.2023.





3. Fire line 15 km layout

This work is be done in dry season.

4. Fire watching activity

This work is to be done in dry season.

Habitat improvement through bamboo plantation over 320 ha/over existing forest land

Hemgir Range has raised 160 ha of bamboo plantation of Salia bamboo during this period in Garjanpahad RF. Out of this, 60 ha in Hemgir Section, 60 ha in Daghora Section and 40 ha in Kanika Section have been raised. A total of Rs 18,22,080/- has been spent for these plantations by 30.9.23. Gopalpur Range has raised 30 ha of bamboo plantation.



6. Excavation of water holes with saltlicks

This is to be done in post monsoon period.

7. Erosion control trenches and check dams on nallas

These works will be done in post monsoon period.

8. Biodiversity monitoring every alternate year and documentation

This work has not yet been done.

9. Elephant tracking activities

Two elephant trackers have been engaged by the Hemgir Range and an amout of R50,000/- has been spent towards this.

10. Solar lighting for 10 villages

This work has not been done.

11. Corpus fund

This work is yet to be done.

12. Cattle immunization status

This activity has not been carried out.

13. Awareness activities

This has not yet been done.

14. Anti-poaching and anti-smuggling measures/ Providing communication

equipments and search lights to watchers

This item is yet to be executed.

Remarks

The progress of work in the current assessment period is satisfactory. A significant progress has been made in development of ANR plantations and Bamboo plantations. Two elephant trackers have been also engaged. However, a lot of other activities are yet to be done. The Sundargarh Forest Division has to pay attention for early execution of following

activities.

GIS mapping to monitor forest fragmentation

Fire line 15 km layout

Fire watching activities

Excavation of water holes with saltlicks

Erosion control trenches and check dams on nallas

6. Biodiversity monitoring every alternate year and documentation

7. Solar lighting for 10 villages

Corpus fund

Cattle immunization

Awareness activities

11. Anti-poaching and anti-smuggling measures/ Providing communication

equipments and search lights to watchers

The funding agency and monitoring team have to pursue this matter with authorities

of Sundargarh Forest Division for early execution of the activities.

Bhubaneswar

Date: 19.02.2024

Dr Nirakar Bhol Principal Investigator

College of Forestry, OUAT

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REHABILITATION AND RESETTLEMENT PLAN

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of

NTPC Limited

DULANGA COAL MINING PROJECT



REHABILITATION AND RESETTLEMENT PLAN

NTPC LTD, DULANGA COAL MINING PROJECT,

SUNDARGARH, ODISHA

OFFICE OF THE LAND ACQUISITION OFFICER, HEMGIR NO. 338 / Date: /3/03/14/

TO

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The Addi. General Manager (I/c) NTPC Dulanga Coal Mining Project Sundargarh

Sub:

Approval of Rehabilitation & Resettlement (R&R) plan of Dulanga Coal Mining Project, NTPC Limited, Sundargarh

Ref:

Your letter dated 09.09.2013

Sir,

Please find attached herewith the R&R plan of Dulanga Coal Mining Project of NTPC Limited, Sundargarh duly approved by the competent authority.

This is for your information and necessary action.

Thanking You.

Enclosure: As above.

Yours faithfully,

Land Actrosition Officer, Herney

CONTENTS

1.	INTRODUCTION	1-2
2.	METHODOLOGY	2-2
3.	DETAILS OF PROJECT AREA & DISPLACEMENT	3-4
4.	PERCEIVED IMPACTS ON ENVIRONMENT DUE TO EXECUTION	
	OF PROJECT	4-4
5.	DETAILS OF PROJECT AFFECTED PERSONS OF THE	
	DULANGA COAL MINING PROJECT	4—5
6.	GUIDING PRINCIPLES OF RESETTLEMENT & REHABILITATION	
	PLAN	5-6
7.	DETAILS OF LAND TO BE ACQUIRED	6-7
8.	COMPENSATION FOR ASSETS	7—7
9.	COMPENSATION FOR TREES	77
10	COMPENSATION FOR HOUSES	7-8
11	COMPENSATION FOR OTHER IMMOVABLE ASSETS	
	ATTACHED TO LAND	8-8
12	RESETTLEMENT & REHABILITATION	817
13	PLANNING & IMPLEMENTATION OF R&R PLAN	17—18
14	INITIAL COMMUNITY DEVELOPMENT & CSR ACTIVITIES	18-20
15.	TOTAL PROPOSED FINANCIAL OUTLAY FOR RED DI AN	

1. Introduction

NTPC Limited is the largest Indian State owned electric utilities company which was set up in 1975 to accelerate power development in India. It is emerging as an integrated power major with presence across the entire energy value chain. With a current generating capacity of more than 40 GW, NTPC has embarked on plans to become a 75 GW company by 2017. NTPC Ltd has been allotted a total of Six(06) Coal Mining Blocks across three States, of which Dulanga Coal Mining Block is located in the state of Odisha. The excavated coal from the mine via railway corridor, would be used for Power generation in the Darlipatti Super Thermal Power Plant which is also located in the Sundargarh district.

While land for coal mining area for the block, shall be acquired under CBA Act-1957, the Land for OB Dump and Mine infrastructure including R&R Colony, CHP corridor, CISF colony etc shall be acquired under LA Act, it is estimated that a total of 2044.10 acres of fand would be utilised for the project. which would encompass lands of 8 villages namely, Dulinga, Majhapada Beldihi, Khuntigharia, Kathfali, Manoharpur, Khapurikachar and Kalamegha, Spanning 3 Gram Panchayats of Sanghumda, Kanaktura and Durubaga.

Due to the project, several families would be affected/ relocated and there would be loss of lands coupled with loss of livelihoods. A Socio Economic Survey was conducted by Xavier Institute of Management, Bhubaneswar, in line with the Orissa R&R Policy, in the project affected villages. As per findings obtained from the survey report, about 509 families would be displaced and about 438 families would be affected by the project.

With a view to striking a balance between the company's business initiatives and the development needs of the project affected masses, the project seeks to follow the R&R package approved by Honourable Collector and District Magistrate, the Orissa Resettlement & Rehabilitation Policy and its subsequent amendments issued from time to time. It may be mentioned here that the R&R package, draws immense strength from implementation of past policies, best practices in other States and Orissa Government's Industrial Policy Resolution, 2001.

The current intervention of policy formulation has actually taken note of the lessons teams through these past policies, which essentially reflects Government's genuine spirit of learning and retrospection.

As mandated in the Orissa R&R Policy, emphasis has been given on the following:

- Avoiding displacement wherever possible and minimize it exercising available options.
 Otherwise
- Recognizing voices of displaced communities emphasizing the needs of the indigenous communities and vulnerable sections
- To ensure environmental sustainability through participatory and transparent process
- Help guiding the process of developing institutional mechanism for implementation, monitoring, conflict resolution and grievance redressal.

2. Methodology:

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The Rehabilitation and Resettlement Plan emphasizes that the project shall play a positive role in the socio-economic upliffment and betterment of quality of life of the people residing in the area. In addition to providing the rightful compensation to the land owners, efforts have been made to ensure transparency in the process of planning and execution. The preparation of the plan included the following procedures:

- Conducting a Socio Economic Survey of the project affected families, which included collation of Primary and Secondary data through PRA exercises, Focus Group discussions, Personal interviews, door to door survey and focus group discussions etc with a specific focus on gender participation.
- 2) Further Hemgir block falling under Scheduled areas list of the State, institutions of local self-governance, especially the Panchayali raj institutions were consulted and involved during the process. To ensure participation among the people and to involve all sections of the villages. Palli Sabhas, Gram sabhas have been consulted. An Environmental public hearing has also been conducted to factor in all possible suggestions encompassing the needs and requirements of the villagers.
- Discussions with the project affected families and village level micro planning has been taken up to ensure that proper weightage to issues.

3. Details of Project Area and Extent of Displacement

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The Dulanga Coal Mining Block has been allocated to NTPC Ltd for developing coal mines for its upcoming Darlipalli Super Thermal power Plant. The Coal Mining Block is situated in Hemgir Block and would involve acquisition of 2044.10 acres which would comprise of 870.45 acres of private fand. 424.84 acres of Govt land and 748.81 acres of forest Land. The land being acquired, would be used for setting up of the Coal Mines, OB Dump, other Infrastructure and establishing a Resettlement and Rehabilitation colony.

A total of 8 villages, namely, Dulinga, Majhapada, Beldihi, Kathfali, Khuntijharia, Khapurikachar, Mancharpur, Kalamegha would be affected by the project. Efforts have been made to minimise the requirement of land for the project and thus also minimise displacement of people from the area. In order to identify the extent of displacement and effect of the project, a socio economic survey has been taken up in the project affected villages in line with the Odisha R&R policy. This survey would assess the vulnerability and level of impoverishment of villagers, under three broad parameters viz. demographic profile, social profile and economic profile. Apart from this, it would also help in providing a base for impact monitoring subsequent to displacement.

SI	Type of Land	Mining Area Land [CBA	Land (La	Grand		
		Act] (Acres)	OB Dump & Infrastructure	R&R Calony	Total	(Acres
1	Private	460.38	370.88	39.19	410.07	870.45
2	Gavt./ Revenue	263.23	98.01	63.60	161.61	424,84
3	Forest	672.02	76.79	0.00	76.79	748,81
To	otal (Acres)	1395.63	545.68	102.79	648.47	2044,10

The land being acquired, is marked by the presence of good agricultural land and rich forest flora. The mainstay of the villagers is agriculture, mostly rainfed, with a single paddy crop. However, due to the presence of forests, there is a huge dependence for several minor forest

produces. It may be mentioned here that due to the presence of other coal mining projects in the area, the villagers are directly or indirectly involved in working in the mining area. The Duranga coal Mining Project, which shall have an annual capacity of 7Mn tonnes per annum, shall create numerous skilled and unskilled job opportunities in the area. It is planned that the mining shall be done through (MDO) Mine Developer Cum Operator and would be highly mechanised. It is however expected that, several semi-skilled and unskilled jobs would arise out of the operations. As per the OPRR 2006 and its amendments, Clause-9(II-a), nominated members of the displaced and other affected families would be given utmost preference in the matter of employment. For jobs arising out of assignments to be taken up by other vendors also, preference shall be extended to project affected masses. Adequate arrangement to provide vocational training to at least one member of each displaced/other family so as to equip him/her to start his/her own small enterprise and reline his/her skills to take advantage of new job opportunities. For those engaged in traditional occupations/handicrafts/ handlooms, suitable training shall be organized at the cost of project authority to upgrade their existing skills. Emphasis would be given by the company on the overall development of the villagers, which would take into account, up gradation of existing infrastructure, providing new infrastructure, uplifiment of standard of living, improvement in the quality of living, improving access to better quality of education, health facilities etc.

4. Perceived impacts on environment due to execution of project

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To assess the impacts of the Dulanga Coal Mining Project, NTPC Ltd, an Environment Impact Assessment study has been carried out and all possible/ perceived impacts have been outlined. Keeping in mind necessary guidelines issued by the MOEF, all possible impacts shall be taken care of and shall be implemented as per the Environment Management Plan approved by the MOEF. Utmost care shall be taken to avoid any adverse impact on the existing Bio diversity and overall environment, in the area.

5. Details of Project Affected Persons of the Dulanga coal mining project

A socio-cultural, resource mapping and infrastructural survey is being conducted by Xavier Institute of Management, Bhubaneswar, an independent agency identified by the Government to ensure proper benchmarking. This survey aims at identification of the Project affected families and assess the extent of impovershment of the families apart from outlining various assets both private and government existing in the area. The details of Project affected persons is enclosed as below.

SLNo	Name of Village	Purpose of Land Acquisition	No of Affected families
1	DULINGA	Coal Block & Infrastructure	224
2	MAJHAPADA	Coal Block 8 Infrastructure	267
3	8ELDIHI	Coal Block & CISF colony	177
4	KATHFALI	Coal Block	28
5	MANOHARPUR	Coal Block	04
6	KHUNTIJHARIA	Coal Block	91
7	KHAPURIKACHAR	OB Dump 8 infrastructure	62
8	KALAMEGHA	R&R Colony	94
9	SATPARLIA Reserve Forest	Infrastructura	00
10	DHANUARDIHI Reserve Forest	Coal Block	00
11	GIRIPAHAD Reserve Forest	Coal Block	00
	TOTAL		947

NB; The figures depicting the affected families are based on the Socio Economic Survey conducted by XIM, Bhubaneswar.

6. Guiding Principles of the Rehabilitation and Resettlement Plan

Eligibility: As per the Rehabilitation and Resettlement Plan, all families who have been residing for a minimum of 3 years in the project area prior to the date of publication of Section-4 (1) Notification under LA Act-1894 and Section-7 Notification under CBA Act-1957 and on account of acquisition of his/her agricultural/homestead land are affected by the project

Time Frame: The time frame for actualisation and implementation of this Resettlement and Rehabilitation plan would be five (05) years from the date of approval of the plan.

Impact Assessment: After implementation of the plan, a Social impact Evaluation (SLE) shall be taken up to provide a base for future interventions.

- Details of Land to be acquired: Land shall be acquired for different purposes which
 are outlined below:
- a) Land to be acquired for the Coal mining Block(Acquisition under CBA Act-1957)

SI.No	Land Details	Area to be Acquired (In Acres)
1	Private Land	460.38
2	Revenue Land (Non Forest Land)	263.23
3	Forest Land	672.02
1102	TOTAL	1395.63 Ac

For Land in be acquired under CBA Act- 1957. Section-11 notification has been published and the land is now vested with the NTPC Ltd. Payment for compensation for land is in process.

 b) Land to be acquired for setting up of OB Dump & other Mine Infrastructure(Acquisition under I.A Act- 1894)

l.No	Land Details	Area to be Acquired (In Acres)
1	Private Land	370.88
2	Revenue Land (Non Forest Land)	98.01
2	Forest Land	76.79
	TOTAL	545.58

Land acquisition is in advanced stages.

c) Land to be acquired for setting up of R&R Colony (Acquisition under LA Act. 1894). The land for the R&R colony has been identified in consultation with the villagers, in village Kalamegha at Kanaktura Gram Panchayat. A total of 102.79 acres of land is allocated for the purpose which shall contain the Rehabilitation Colony for the PAPs and other necessary infrastructure. The matter has been discussed in Palli sabhas, Gram Sabhas and in RPDAC meetings and the land acquisition is in advanced stages.

SI.No	Land Details	Area to be Acquired (In Acres)
1	Private Land	39.19
2	Revenue Land (Non Forest Land)	63.60
	TOTAL	102,79 Ac

Based on the approval of the 3rd RPDAC meeting of Dulanga Coal Mining Project, on 28.04.2012 and subsequent deliberation. Collector and District Magistrate, vide Letter no 1007 dated 06.09.2013, had approved the Compensation and R&R package for NTPC Ltd. Dulanga Coal Mining Project (Copy Enclosed).

Compensation for Assets:

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As per the Socio Economic Survey being carned out in the project affected villages, enumeration of all immovable assets, community assets as well as government assets, is being done through PWD. Sundargarh. As per the guidelines issued by the Revenue department, Rural Development Department and as approved by district authorities, the cost of assets in terms of compensation would be distributed to the villagers.

As regards "public property" like School Building, Club House, Hospital, Panchayat Ghar, electrical installation, place(s) of worship, roads etc, value of such property affected shall be deposited with the District Collector.

9. Compensation for Trees:

Compensation for trees would be paid to the individual beneficiaries as per rate fixed by the District govt authorities.

10. Compensation for Houses: For Houses, situated in the areas being acquired by the project, cost of the assets as ascertained by the District authorities, shall be paid to the Page | 7

individual beneficiaries. For this, an Asset Valuation study is being taken up in the villages along with the Roads and Suilding department. Sundargarh to ascertain the cost of assets. As regards "public property" like School Building, Club House, Hospital, Panchayat Ghar, electrical installation, place(s) of worship, value of such property affected shall be deposited with the concerned District Collector. Either Project or District Administration shall take up construction at the place as would be determined in consultation with representatives of displaced persons.

11. Compensation for other Immovable Assets attached to land: Compensation for all immovable assets attached to land, like Ponds, Creeks, Check Dams, Bore wells, open Wells etc shall be paid to the individual beneficiaries.

12. RESETTLEMENT AND REHABILITATION

Resettlement Benefits:

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Families whose Houses would be acquired by the project and would get displaced, would be provided benefits as per the following two options:

Option-1: Families opting to resettle in R&R Colony- The eligible displaced families shall submit their consent for resettlement in the R&R colony at Kalamegha, through an irrevocable affidavit on or before the cut off date as menhaned by the NTPC.

- a) Provision of Homestead land & house in R&R Colony: Each displaced family, who shall opt for resettlement in the R&R colony, shall be provided with land measuring Ac.0.10 Decimal for homestead purpose. Land patta of the Homestead land, shall be provided to each family, at the time of handover of the individual house. Besides, NTPC shall provide a house of size @ 1000 sqtt. Super built area, including cowshed and staircase, constructed over the homestead land allotted to the above mentioned displaced families. (As per OPRR-2006, Clause 9(d)).
- b) Assistance in lieu of Temporary Shed: For families who are dismantling their house/other structures in the village, handing over possession to Govt/NTPC and evacuating the village, in tieu of assistance for temporary shed, NTPC shall pay to the person, House rent assistance @ Ps.1000/- per month from the day of physical evacuation for a period of eighteen (18) months.

c) Assistance for Transportation: NTPC shall provide transportation allowance of Rs 3000/- or free transportation for shifting to the resettlement location or their new place of inhabitance. If a displaced person is unable to carry all the materials, such as wood etc immediately after dismantling his/her house in the village and willing to keep it in his/her plot for some time till he/she transports it to his/ her relocated area. NTPC will facilitate for watch and ward for a period of 15 days. NTPC shall not be responsible for this material after 15 days.

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d) Maintenance Allowance: NTPC shall provide "Maintenance Allowance" @ Rs.3000/per month to all the displaced families on vacation of land/house for a period of one year from the date of vacation.

Description of Item	No of PAPs	Unit Cost (In Lakh Rs.)	Total (In Crs Rs.
Cost of estublishment of R&R Colony including plot and Birsic Infrastructure	490		75.01
Corpus for of maintenance of R&R Colony@ 10% of total cost of R&R colony	490		7.501
Registration fee for transfer of plots in RC in the name individual PAP Families	490	0.15	0.735
Maintenance Allowance /family	490	0.36	1.784
Transportation Grant/family	490	0.03	0.147
Assistance for Temporary Shed	490	0.18	0.882
TOTAL			86.039

Option-2: Families opting for Self Resettlement - The eligible displaced families shall submit their consent for self-relocation elsewhere, through an irrevocable alfidavit on or before the cut off date as mentioned by the NTPC.

a) Assistance for Self Relocation: A displaced family, who chooses by providing consent through an affidavit for self-relocation elsewhere, other than R&R Colony, shall be given cash grant of Rs.75,000/- in lieu of house plot/homestead land.

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- b) Building Assistance: A displaced family who chooses by providing consent through an affidavit for self-relocation elsewhere, other than R&R Colony, shall receive House Building Assistance @ 60% of the construction cost assessed for the house constructed by NTPC in the rehabilitation habitat at Kalamegha or house building assistance provided in the R&R policy 2006, as on that date, i.e Rs.6.60 Lakhs or whichever being higher.
- c) Assistance in lieu of Temporary Shed: For families who are dismantling their house/other structures in the village, handing over possession to Govt/NTPC and evacuating the village, in lieu of assistance for temporary shed, NTPC shall pay to the person, House rent assistance @ Rs.1000/ per month from the day of physical evacuation for a period of six (06) months.
- d) Assistance for Transportation: NTPC shall provide transportation allowance of Rs 3000/- or free transportation for shifting to the resettlement location or their new place of inhabitance. If a displaced person is unable to carry all the materials, such as wood etc. immediately after dismaniling his her house in the village and willing to keep it in his her plot for some time till he/she transports it to his/ her relocated area, NTPC will facilitate for watch and ward for a period of 15 days. NTPC shall not be responsible for this material after 15 days.
- e) Maintenance Allowance: NTPC shall provide "Maintenance Allowance" @ Rs.3600/per month to all the displaced families on vacation of land/house for a period of one year from the date of vacation.

I	Resettlement	benefits to	r PAPs opting	for self	relocation - Cost (Component-
	Rs.4.99 Crore					

Description of Item	No of PAPs	Unit Cost (In Lakh Rs.)	Total (In Crs Rs.)
Cash in Lieu of Homestead Land	64	0.75	0.48
House Building assistance	64	6.60	4.224
Maintenance Allowance /family	64	0.36	0.23
Transportation Grant/family	64	0.03	0.019
Assistance for Temporary Shed	64	0.06	0.038
TOTAL			4.991

Provision for Encroachers: An encroacher family, who is homestead less as defined in the Orissa Prevention of Land Encroachment Act. 1972 and is in possession of the encroached land at least for a period of ten years continuously prior to the date of notification under relevant law(s) declaring intention of land acquisition will get ex gratia, equal to compensation for the similar category of homestead land, against the encroached homestead land up to a maximum of 1/10th of an acre. While determining the extent of land for such compensation the homestead land held by him/her is to be taken into account. The ex gratia will be in addition to the actual cost of structures thereon. If the encroachment is found to be objectionable, (s)he will be entitled to the cost of structure only.

Financial outlay for Encroachers: Rs.35.25 Crores

TWI RE			35.25 Crs
TOTAL	153	15.00	2295.00
Forest Land	82	15.00	1230.00
GM Land			
Provisions for encroachers (Land Cost has been taken as weighted average of cost of Govi land under CBA Act @ 6.705Lacs and Govi Land under LA Act @ 1.933 Lacs			

Additional Compensation for Multiple Displacement. In accordance with the provisions laid down by the Orissa R&R Policy, Clause 8(iv), additional compensation amounting to 50 % of the normal compensation payable, shall be paid to each displaced family over and above the normal compensation in the form of ex-gratia. It is assumed that about 10 original families having land to the extent of 20 acres would be covered under the above mentioned provision.

Additional co Rs.3.75 Cror	mpensation for multiple displa es	acement	- Cost Com	ponent:	
Description	of Item		Extent of Land	Unit Cost (In Lakh Rs.)	Total (In Crs Rs.)
	compensation for m @ 50% of normal compen- compensation for land	The second secon	50 acres	7.50	3.75

Rehabilitation Benefits

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Opportunities for Employment:

NTPC shall not provide employment in its establishment directly to a person eligible for employment owing to displacement, as the mining activity shall be carried out through a Mining Developer and Operator (MDO), for the life of the Mina. For the jobs generated by MDO, PAPs would be accommodated based on their suitability and availability.

a) One time Cash Assistance in-lieu of employment: NTPC shall pay double the amount prescribed in the R&R policy 2006 for different categories, as on date of disbursement, as one time cash assistance in lieu of employment to the eligible persons as applicable to different eligible categories. The categories of PAFs shall be decided and approved by the State Govt viz.

Categories as per OPRR-2006	No of PAFs	Amount (Lakh Rs.)	Total
Category I: Displaced families losing all land including homestead land	318	14.94	47.51
Category II: Displaced families losing more than 2/3rd of agricultural land and homestead land	27	8 96	2.42

SUB-TOTAL (b)			69.15 Crores
Category-VI: Families losing agricultural land in part but not homestead and	206	3.0	6.18
Category V: Displaced families losing only homestead land but not igricultural land	215	3.0	6.45
Category-IV: Displaced (amilies losing more than 1-3rd of agricultural and and homestead land	142	3.0	4.26
Category (II Families losing all agricultural land but not homestead land	39	5.98	2.33

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- b) Monthly Financial Assistance/ Annuity: NTPC shall provide monthly financial assistance through an approved Annuity Scheme of LIC of India or similar organization (as approved by IRDA) as a social security measure to all eligible families for employment as per the Orissa R&R policy 2006, who avail one time cash assistance in fieu of employment. The leatures of the scheme shall be as follows:
- The scheme is mandatory for all families eligible for employment and receiving one time cash compensation, in order to ensure financial security on a long term.
- ii) The scheme shall be applicable for people eligible for employment in the age group of 18 years and above. The benefit shall be available for a term of 25 years or till the life of the annuitant, whichever is earlier.
- The Annuity payable shall be Rs.3000/- per month (Rupees Three Thousand per month/ Rupees Thirty Six thousands annually), as per the proposal approved by IRDA.
- iv) The scheme shall come into torce, six months after the date from which eligible person dismantles his/her house/ structures, hands over possession to GovVNTPC, hands over possession of land and evacuates the village.

	Amount (In Lakh Rs.) @ Rs.3000/- per month for 25 years	Amount (Rs.)	
947	9.0	8.52 Crs	

The estimated financial outlay for providing Annuity for 947 PAPs for 25 years, shall be Rs.8.52 Crores approximately.

c) Training for Self-employment: NTPC Ltd. DLCMP, under the guidance of the District Collector. Sundargarh concerned will make adequate arrangements for development of entrepreneurship, technical and professional skills for self employment. Vocational training shall be imparted to at least one member of each displaced/other family so as to equip him/her to start his/her own small enterprise and refine his/her skills to take advantage of new job opportunities. Training on Tailoring, Tie and Dye, Applique & Patch Work, Machine Embroidery. Computer knowledge to women and Mobile repairing, Masonary, Plumbing, Electrician, Computer knowledge, Driving etc for men, are being imparted/ planned to be imparted. For those engaged in traditional occupations/ handicrafts/ handlooms, suitable training shall be organized at the cost of project authority to upgrade their existing skills. Training on food processing, mushroom cultivation, computer courses, poultry farming, dairy farming, sewing etc could open new avenues for self-employment in the region.

The NTPC shall invite applications from trainees among affected families for training on various courses. Applicants would be required to submit their applications along with certificate of land acquired from the appropriate authority, income certificates, educational qualifications and caste certificates etc. The scheme is a welfare scheme for the PAFs and would in no way conter any right on the PAFs for financial assistance. In case, provision of all infrastructural facilities are not available for conducting the training courses, concerned State Govt department, shall be consulted to facilitate training to the applicants. Necessary expertise/ Resource persons required for the training program shall be drawn from professional agencies/ State Govt departments. All expenditures amounting to the same, arising therein, shall be borne by the user agency.

d) Merit Scholarship Scheme: To improve and encourage the literacy and educational standards in the project area and to create a pool of potential candidates, NTPC shall introduce a Merit Scholarship scheme for the wards of the Project affected families. If the wards from the affected families are not eligible/available, the same would be extended to the wards in the vicinity villages. The scholarship so decided, shall be applicable for the duration of the course. Applicants would be required to submit their applications along with certificate of land acquired from the appropriate authority, income certificates, educational qualifications and caste certificates etc. The requiring body would reserve the right to increase/decrease the number of beneficianes or change the no of beneficiaries in different disciplines, depending on the availability of the students etc.

Currently, scholarship is being extended to candidates of wards from affected villages, undergoing technical course in various colleges. The amount of scholarship changes depending Page I 14

upon the course, Rs.1000/- per month for ITI, Rs.1200/- per month for Diploma and Rs.1500/per month for Engineering.

Apart from this, it is being planned to set up a Polytechnic at Zinc colony, jointly with Darlipath STPP, for the youths, for imparting Diploma in Engineering, wherein training courses shall be provided on specific industry based traits.

e) Shops and Service units:

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(a) Shops and Service Units: NTPC Ltd shall also construct shops and service units at feasible locations at their own cost, which will be allotted in consultation with Collector to project displaced families opting for self employment. While allotting such units, preference will be given to physically challenged persons and members of displaced SC & ST families.

1) Proposed Rehabilitation Colony

- The Rehabilitation and Resettlement colony has been proposed to be established in Kalamegha village.
- Specific care has been taken to minimise the land requirement for the R&R colony, to ensure that there is no displacement arising out of acquisition of the land.
- All displaced families having opted for resettling in the R&R colony shall be allotted land with houses in the colony.

g) Salient features of the R&R Colony

NTPC shall design and plan the resettlement villagos at Kalamegha, Hemgir Tehsil and shall construct individual houses. The Rehabilitation habitat shall have all the basic amenities and facilities like Road, Drainage, Etectricity, Drinking water, School, Anganwadi, Community center, Religious place of worship, Cremation ground, Market place, Shopping center, Primary health center, Veterinary clinic, Village Pond, Bus Stand, Panchayat Ghar, Park, Grazing Ground etc, for the resottlement of the displaced families of the project.

Each family shall be provided with a house of size @ 1000 sq ft super built area, including cowshed and staircase, constructed over the homestead land allotted to all displaced families who shall opt for resettlement in R&R Colony. Record of Rights of the land and houses allotted Page I 15

to the displaced persons shall be handed over to the residing families by the District Administration while resettling them in the Resettlement habitat

ESTIMATED COST OF R&R COLONY & INFRASTRUCTURE FACILITIES: Rs.75.01 Crs

SL	Activity	Total Est. Value
NO		(Lakhs Rs.)
ĵ.	Houses for PAFs (490 Nos)	5390.02
	Built up area for house= 93.02 Sq.mls including Cowshed and Staircase	
2	Other Misc Building	568.75
	a) Primary School b) Anganwadi c) Community center d) Tribal Conter	
	e) Primary Health Center i) Veterinary Clinic g) Panchayat Ghar h) Shopping Center	
3	Other Infrastructure a) Worship Places b) Play Grounds	154.93
	c) Park d) Community Pond e) Pasture Land f) Burial/Cremation Ground	
4	Bulk Services a) Road / Drains / Bridges and Culverts b) Boundary & gale complex c) Water supply d) Sewerage system (Sewage Disposal System Network and Sewage Treatment Plan) e) External electrification	1387.00
	SUB-TOTAL	7501.00

 Special benefits to displaced indigenous families and primitive tribal groups :

As per the OPRR-2006, Clause: 13, special provisions have been kept for indigenous families and primitive tribal groups as mentioned below.

- While developing the resettlement plans, the socio-cultural norms of indigenous and primitive tribal groups have been kept in mind.
- All attempts are being made to resettle the indigenous communities in a compact area close to their natural habitat.
- A programme for development of alternate fuel, lodder and non-timber forest produce (NTFP) resources on non-forest lands within a period of five years sufficient to meet requirements of tribal communities

13. Planning and Implementation of R&R Plan

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In order to encourage participation of displaced people and their elected representatives in implementation and monitoring of A & R package, to oversee and monitor periphery development, a Rehabilitation-cum-Periphery Development Advisory Committee (RPDAC) for the project has been formed (As per OPRR-2006, Clause 17). This committee under the chairmanship of the Revenue Divisional Commissioner, includes people's representatives, one or two leading NGOs of the affected area and select Government officers.

(a) State Level Council on Resettlement and Rehabilitation (SLCRR):

At the State level, there will be a Council headed by the Chief Minister to advise, review and monitor implementation of Resettlement and Rehabilitation Policy. The Council may comprise of Ministers, select representatives of the people, leading social activists, academicians and experts of national and international repute and senior officials of the Government.

(b) LA and R & R Structure:

(a) State Level:

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A Directorate of R & R will be constituted to discharge and oversee the implementation of the R&R Policy. Detailed structure and functions of this Directorate will be notified by the Government

(b) District / Project Level:

Depending on magnitude of the RR works at the project level, there may be a Project Director, Resettlement and Rehabilitation (PD-RR), who shall be assisted by such other officers as Government may decide. The PD-RR shall be the Chief Coordinating Officer between all the line departments in the matter of resettlement and rehabilitation. He will be responsible for implementation of the Policy and limely execution of R & R works under the over all supervision and guidance of the Collector and the Directorate of R&R. (ii) Where R & R work is of lesser magnitude, the same can be undertaken by the LAO of the Collectorate.

(c) Budgetary Provision and Allotment:

Wherever required, adequate budget provision will be kept towards land acquisition and R & R establishments to ensure effective implementation of R & R Policy. The Directorate of R&R would submit such budgetary estimate works by 1st January of every year. Government will ensure timely release of allotment to the concerned authorities.

(d) Grievance Redressal Mechanism:

An effective Grievance Redressal Mechanism will be set up at District and Directorate level to deal with grievance of the project displaced people relating to land acquisition, resettlement and rehabilitation. Besides, all the project authorities shall be asked to set up an effective Grievance Redressal Mechanism relating to their project. Effective participation of the displaced communities will be ensured in the process.

14 Initial Community Development and Corporate Social responsibility activities

The Community Development projects of NTPC are aimed at communities of the targeted villages, the endeavour being to improve the quality of life of the people. In order to make a long term impact, the concentration would be on providing access to basic amenities on water, sanitation, roads, health, education and relevant infrastructure.

In this regard, under the chairmanship of the Collector and District Magistrate, a Periphery Development Society, has been formed with members comprising of several govt departments and other people representatives. The funds for community development would be deposited with the Committee in the ratio of 70, 30, 20 for the project affected villages and periphery, Block level and District level respectively. A total of Rs. 30 crores (Rupees thirty Crores) is planned to be earmarked for a period of 5 years till 2016-2017.

As part of the company's commitment towards Corporate Social Responsibility, community development activities have been taken up across 5 major verticals of Education, Health, Training/Empowerment, Infrastructure Upgradation, few of which are mentioned as follows:

- Distribution of dresses to Anganwadi children
- Distribution of School Bags to children

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- · Distribution of Drum Set, Jersey set to schools
- · Distribution of Cooking Kits to Anganwadis
- Sweaters to School and Anganwadi children
- Study kits to School students and Anganwadi kits to Anganwadi children
- · Distribution of Cricket and Football kits to village clubs
- · Providing Aquaguard to Govi office at block and district level
- · Distribution of Durees to Anganwadis and village clubs
- Installation of Solar Street Lights in villages and govt offices
- · Distribution of Selar Lanterns to meritorious students
- Distribution of Blankets and Mosquito nets to villages
- · Providing assistance to education
- · Organising competitions in schools
- Sponsoring Science Exhibition
- · Sponsoring major sports events in the locality
- · Cleaning and Deeping of village Ponds
- · Organizing village Sanitation work
- · Constructing temporary check dams across Nalas
- · Providing Visiting Chair sets to Govt offices
- · Renovation of Jagannath temple at Sundargarh
- Renovation of Cultural complex at Sundargarh
- Conducting regular Health check up camps in villages and free distribution of medicines
- Providing Water purifiers and Almirahs in Gram Panchayat offices

- Organizing Cataract operation camps
- Providing Musical instruments to cultural groups in villages
- Providing school infrastructure in schools
- · Barbed wire lending in schools
- · Repair work and Whitewashing in schools
- · Construction of Bridge at Kalamegha village
- Strengthening of Roads
- · De-silting of Ponds
- · Providing Culverts and Causeways
- · Construction of Community halls/ Club houses
- Providing Drinking Water through Bore wells & Overhead tanks
- · Sponsoring cultural celebrations in villages
- · Providing training on Tailoring, Tie & Dye to women
- . Driving Training to Men
- Computer Education training to villagers
- · Summer Camps to promote extra-curricular abilities in children

Efforts are on to provide vocational training to at least one member of each displaced/other family so as to equip him/her to start his/her own small enterprise and refine his/her skills to take advantage of new job opportunities. For those engaged in traditional occupations/ handicrafts/ handlooms, suitable training shall be organized at the cost of project authority to upgrade their existing skills. As per need assessment survey conducted by the project with active participation from various govt departments, namely District Industries Commission, Women and Child welfare, etc, several areas for training have been identified both individual and group based.

15. TOTAL PROPOSED FINANCIAL OUTLAY FOR R&R PLAN:

Resettlement Package:

Rs. 91.03 Crores

Provision for Encroachers:

Rs. 35.25 Crores

Provision for Multiple Displacement:

Rs. 3.75 Crores

Rehabilitation package:

Rs. 77.67 Crores

Community development:

Rs. 30.00 Crores

TOTAL

Rs.237.70 Crores

HI SIR ATTRICE R. BARIK

MUR ANTERIOR SHITTE

Acta General Manager ic

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Challanga Coal Mining Project

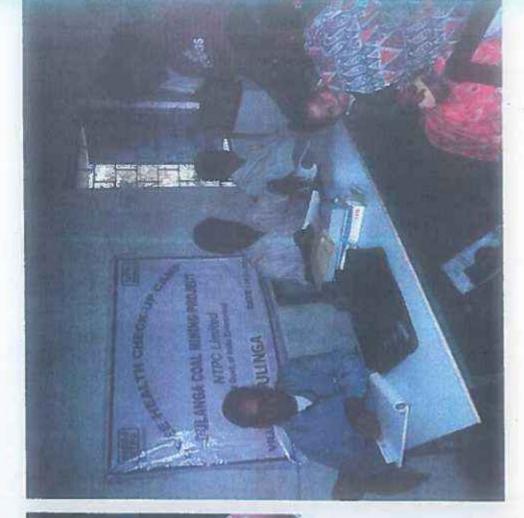
LAND ACQUISITION OFFICER
HEMGIR

COLLECTOR, SUNDARGADI

" "ICB GALLERY (HEALTH)"

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Medical camp

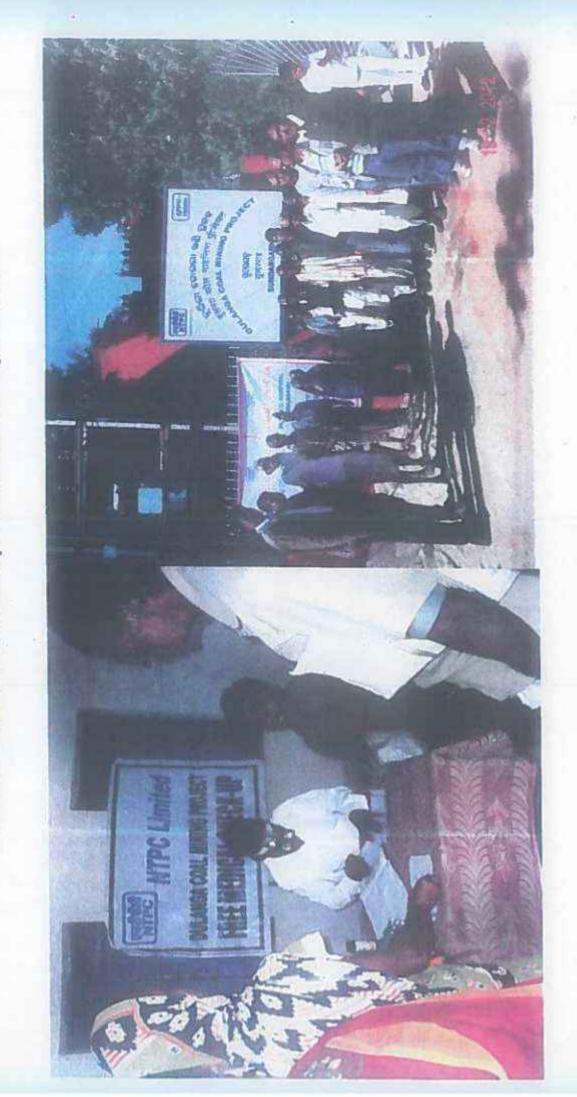






ICD GALLERY (HEALTH)

Free Medical check up & Cataract Operation







ICD GALLERY (CAPACITY BUILDING)

Tailoring training at SEAM





ICD GALLERY (CAPACITY BUILDING)

ALLERY (CAPACITY BUILD

ministerning

Tailoring training for Women





ICD GALLERY (CAPACITY BUILDING) . . .

NTPC

Transforming

Tie and Dye Training to project affected villages



ICD GALLERY (CAPACITY BUILDING

DRIVING TRAINING







ICD GALLERY (EDUCATION)

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Study kit & School Dress distribution





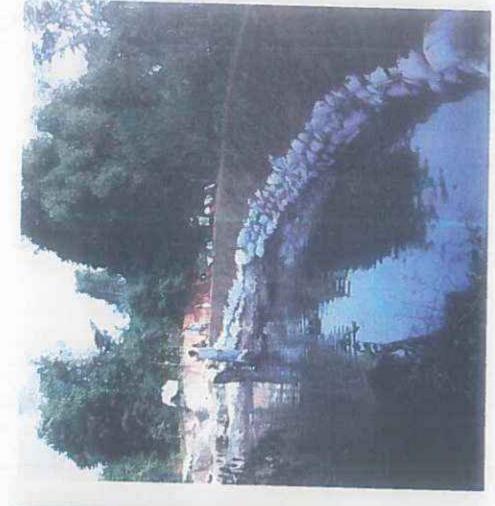
ICD gallery (Infrastructure

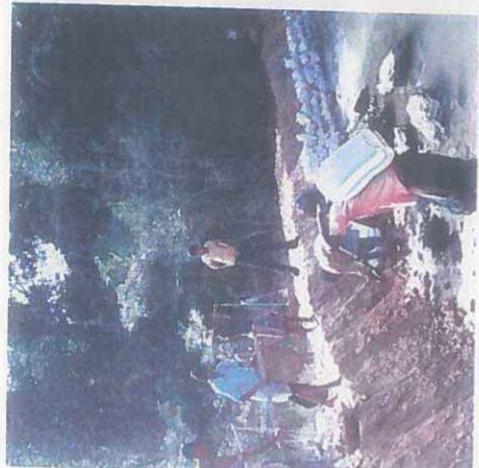
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Construction of check dam







"ICD gailery (Need based)

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Cooking Kit & solar lantern

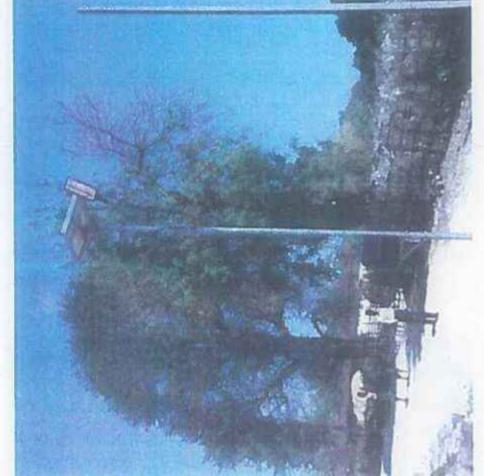




1CD gailery (Need based)

Solar street light distribution and sponsorship in science exhibition













Cricket Kit distribution at Majhapada

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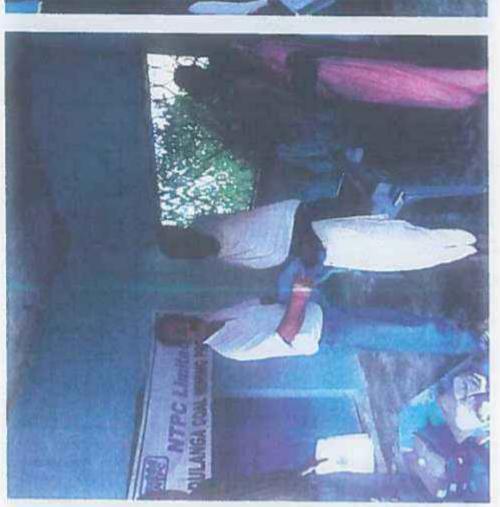
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Cricket Kit distribution at Beldihi



Mosquito net distribution and sponsorship for cricket tournament







ICD gallery (Need based)

Distribution of School infrastructures and Lantern to Students







LCD gallery (Need based)

At Old-age Home, Ravandihi





CCD gallery (Need based)

Pansforming

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Art and Music Training





ICD gallery (Need based)

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Veterinary Training





LCD gallery (Need based)

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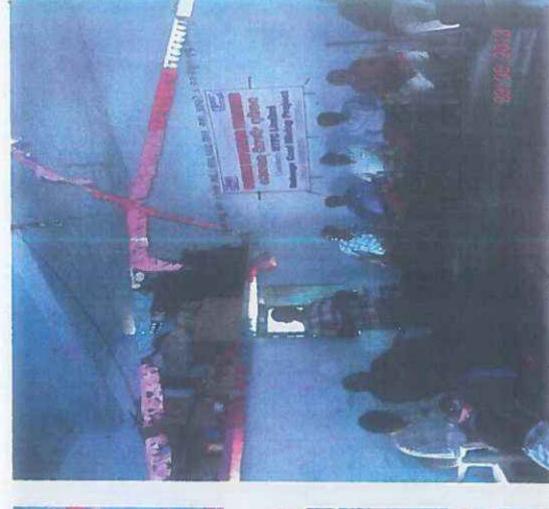
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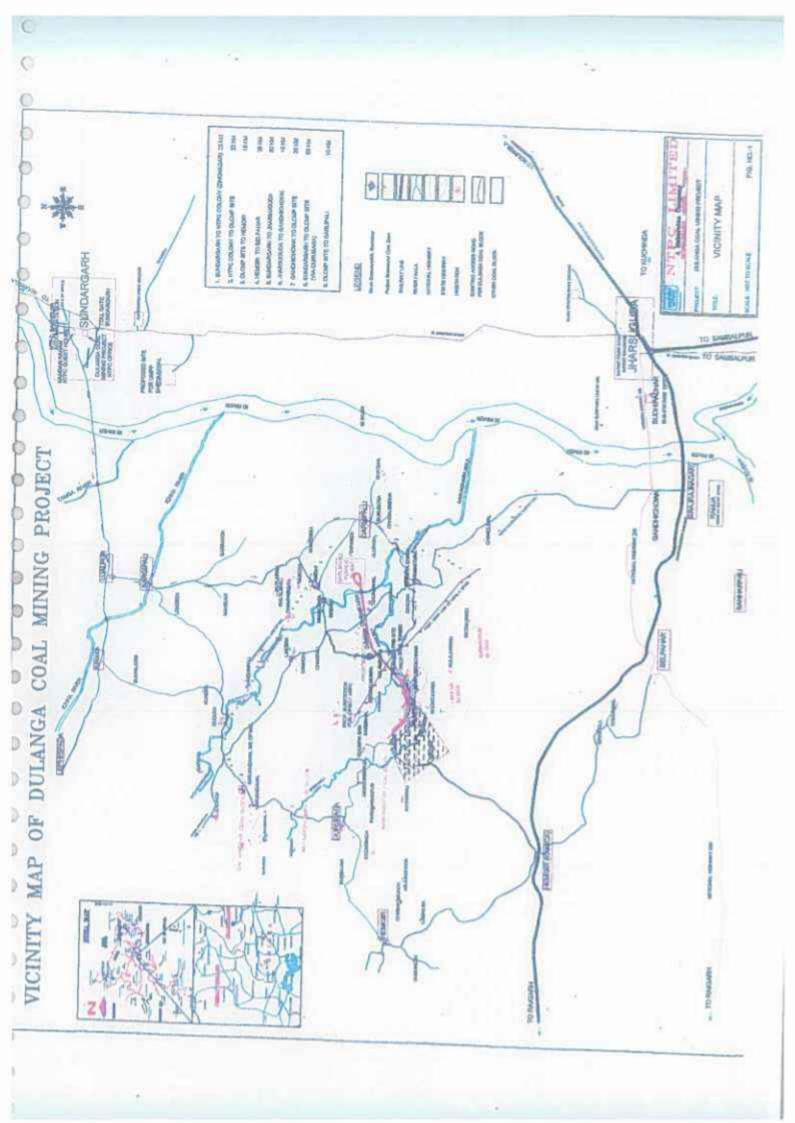
Mobile Repairing Training

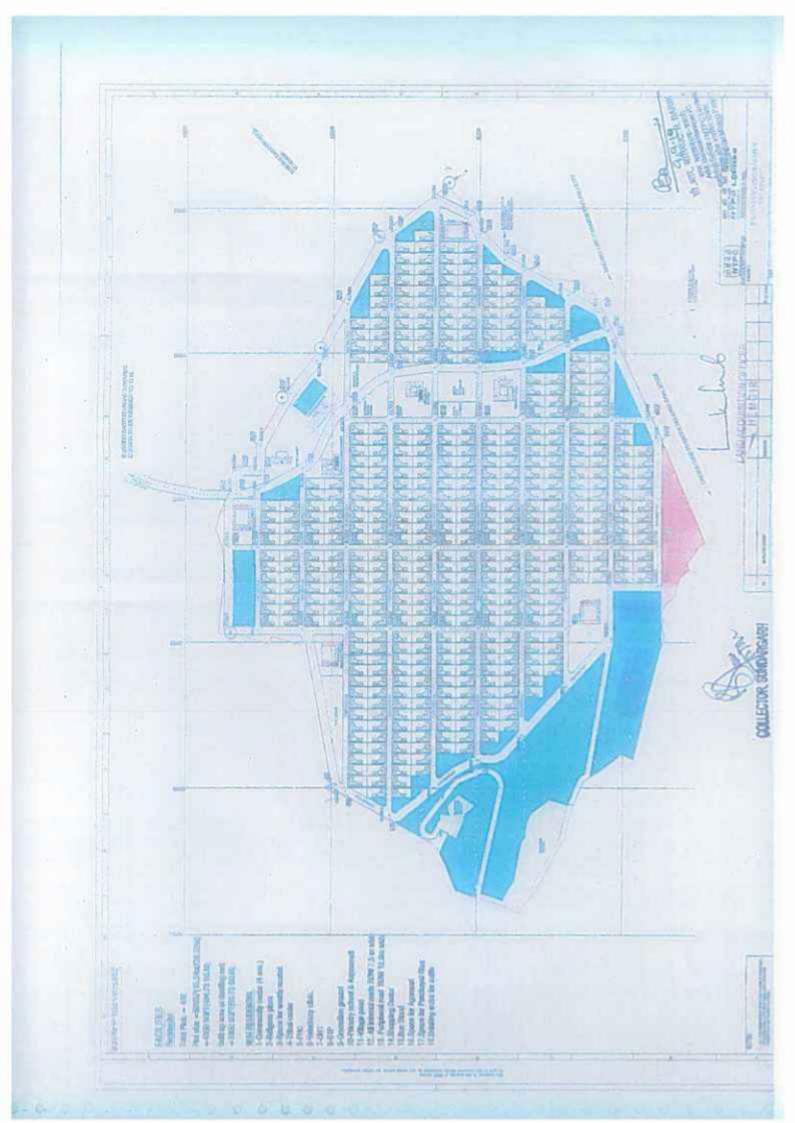












SAFETY ZONE FENCING & GAP PLANTATION

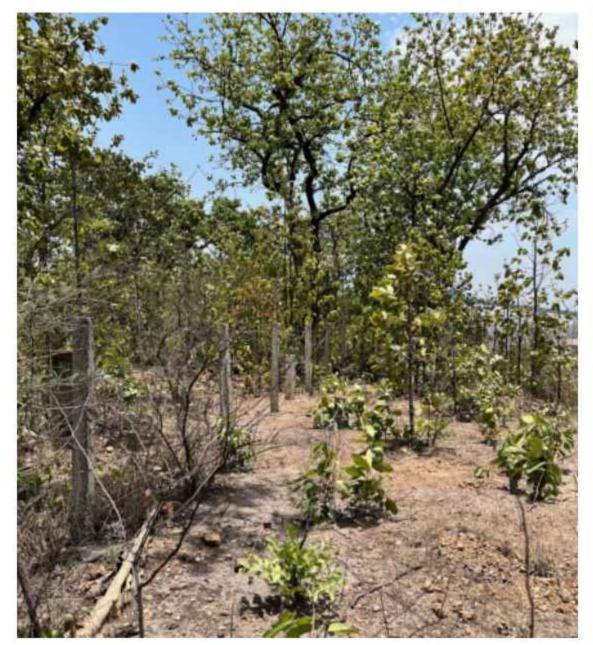
ANNEXURE - XV







SAFETY ZONE FENCING & GAP PLANTATION





Dust Suppression Activities in CHP Operation



Dust Supression at Receiving Hopper



Dust suppression on haul roads near CHP



Dust suppression near MGR





Ref: NTPC/DLCMP/EMG/50

Date: 28.06.2024

To

The Coal Controller, Office of the Coal Controller, 1, Council House Street, Kolkata-700001.

Sub: Submission of Annual Mine Closure Activity Report for the period 2023-24 of Dulanga Coal Mining Project of NTPC Mining Limited (Previously NTPC Ltd.), Sundargarh, Odisha

Dear Sir,

Please find attached herewith the Annual Mine Closure Activity Report for the period 2023-24 of Dulanga Coal Mining Project of NTPC Mining Limited (Previously NTPC Ltd), Sundargarh, Odisha

Thanking You,

ours Faithfully,

(Brij Raj Prasoon) General Manager

Encl: as above

Copy to: The OSD.

Sambalpur Regional Office,

Sambalpur, Odisha.

Dulanga Coal Mining Project, Khapurikachhar, PO - Sanghumuda, Tehsil-Hemgir, Dist- Sundargarh 770013 दुलंगा कोल माइनिंग प्रोजेक्ट, खापुरिकछार, पोस्ट - संघुमुदा, तहसील - हेमगीर, ज़िला - सुंदरगढ़ ७७००१३ NTPC Limited, Ginni Plaza, Opposite Chutia Police Station, Chutia, Ranchi - 834001 (Jharkhand) Registered Office: NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, New Delhi - 110003 www.ntpc.co.in











SI.	Name of the coal/lignite mine/block	Dulanga Coal Mining Project		
1	a) Type: OC/UG/Mixed	Open Cast		
	b) Total life of mine:	24 years of operation (additional 6 years for mine closure including filling of void)		
	c) Balance life of the mine:	20 Yrs		
2	Name of the Owner:	NTPC Mining Limited (Previously NTPC Limited) (Nominated Owner: Sh. Shivam Srivastava , Director (Fuel)		
3	Address of the Owner:	NTPC Mining Limited, NTPC Bhawan, SCOPE Complex, 7 Institutional Area, Lodhi Road, New Delhi 110003		
4	Leasehold Area of the Mine: Project Area of the Mine:	i. 762.42 Ha		
5	Mine Closure Plan approved byon(date)	ii. 7.62 Sq. Km. Ministry of Coal, Dated 14.08.2012 (along with mining plan)		
6	Escrow Account number:	A/c No: 35611468943		
7	Name & Address of Escrow Agent:	State Bank of India 1. Corporate Office address — State Bank Bhawan, Corporate Centre, Madam Kama Marg, Nariman Point, Mumbai 400021) 2. Branch Address — CAG Branch, New Delhi, 11th and 12th Floor, Jawahar Vyapar Bhawan, 1 Tolstoy Marg, New Delhi 110001		
8	Closure Cost deposited for the year 2023-24	Rs. 3,86,00,000.00 (2023-24) Rs. 4,05,00,000.00 (2024-25)		
9	Cumulative Balance including interest in the account:	Rs. 30,71,53,483.25 (as on 31.03.2024) Certified Statement attached as Annexure-A.		
10	Report being submitted for: (Progressive or Final Mine Closure)	Progressive for Dulanga Coal Mining Project of for 2023-24		
11	Specific condition imposed .(if any, by Government agency):	NIL		
12	Reserve of Coal/Lignite(as per Mining Plan):	Mineable Reserve - 152 Million Tonnes		
	Coal/Lignite actually mined out during last year (2022-23)	Coal Production in FY 2023-24 – 70,00,000 Tonne against the permitted coal production of 70,00,000 Tonne.		
13	Method of Mining:	Mechanized Opencast mining with Shovel Dumper combination and Surface Miner		
14	Area Mined out (Ha): (Till March'22)	Mining Operations started from 28th February, 2018. Approximately 150 Ha is broken for coal excavation as on 31.03.2023.		



15	Area reclaimed:	 i) Physical – Physical Reclamation has not yet commenced as final height of external dump is not yet achieved. ii) Biological – After attaining final height of physical reclamation, this will be
16	Details of afforestation:	taken up. The project has undertaken plantation activities from initial stage. During 2023-24, Total 16,923 no of sapling has been carried out during monsoon period. Cumulatively, about 59,665 Nos of saplings have been planted/ distributed in and around the ML area. (Photographs of Plantation Activities in different region has been attached in Annexure-I).
17	Water Quality Management	
	a) Water bodies available in leasehold area:	Garia Nalla and its tributaries flow within the block boundary, which are seasonal in nature. The diversion of Garia Nallah has been completed and embankment work is in progress. The work is carried out as per the approval of Water Resources Department, Govt. of Odisha (Copy attached as Annexure-II).
	b) Measures taken for protection: (Control of erosion, sedimentation, siltation, water treatment, diversion of water courses if any, measure for protection of contamination of groundwater from leaching etc shall be described)	Measures taken for protection: Garland drain around topsoil dump, overburden dump, embankment along nalla, plantation for erosion control, settling pond for sedimentation, ETP for waste water treatment. The photographs of Garland Drains & Settling Ponds is attached as Annexure -
		III.
		To manage soil erosion and to maintain the quality of the topsoil, garland drain provided near the toe of dump.
		About 11.3 Km of garland drain having width varying from 1.5m – 2 m and depth 2m - 4m have been excavated to protect mine workings/ to arrest the siltation of drained water from dumps, which is ultimately connected to sedimentation pond/ settling pit for collection of channelized run-off water. The drains and sedimentation ponds/ pits are regularly desilted and maintained properly.

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	ACTIVITI	ES
		ETP of 50 KLD capacity has been constructed for the treatment of vehicle washing water before reusing.
		The photograph of ETP is attached as Annexure-IV.
		The water so collected is being utilized for watering the mine area, roads, green belt development, etc.
r	c) Quantity of water pumped out from mine/Quarry:	NA All the mine seepage water / Effluent generated are being reused
	d) Quality of water (as per test result):	Water quality parameters are within the prescribed limits as per the test result of the water samples collected from the open well from the villages. For water sampling and analysis, NABL accredited lab, M/s Environmental Research & Services (India) Pvt. Ltd., Bhubaneswar has been engaged. Water Quality report for 2023-24 is attached as Annexure-V .
t	e) Corrective measures taken confronting to the permissible limit:	The test results shows the water quality parameters are within the permissible limit.
t) Is there any acid mine drainage? if yes, the reatment method taken:	None
18 A	Air Quality Management:	
10	Existing air quality parameters:	The existing air quality parameters being monitored are SPM, PM10, PM2.5, SO2, Nox, CO, Hg, Pb, Cr, As etc being tested by the NABL accredited laboratory M/s Environmental Research and Services (India) Pvt Ltd, Bhubaneswar. All the air quality parameters are within the permissible limit. Air Quality report for 2023-24 is attached as Annexure-VI.
0) Corrective measures taken for prevention of air pollution:	1. Water sprinkling in the mine area is being done by 06 nos, of water tankers with 12 KL capacity and 1 no. of water tanker with 22 KL capacity are working for dust suppression in the haul road, working area etc. 2. Fixed Sprinkler of about 900 m has been installed along the haul roads towards CHP and Mines View Point. 3. 02 Nos. Fog Cannons have been deployed for dust suppression. 4. Drilling machines with wet drilling arrangements are being used. 5. Surface Miners used for coal cutting are having interlocked water spraying arrangements at cutting drum.

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		6. Regular Air quality monitoring is being done regularly as per MoEF&CC guidelines. 7. Plantation has been done in the safety zone area along the boundary and diversion road and plantation in the mine area will be continued concurrent to mining operations. Photographs attached as Annexure-VII.			
19	Waste Management				
	a) Quantity of overburden removal:	Overburden removal during FY 2023-24: 1,42,49,162 Cum. Cumulative OB removal since inception is 4,02,54,683 Cum.			
	b) Quantity of Coal/Lignite reject generated:	NIL			
	c) Utilization of Waste Material done:	Waste materials are being used for making of haul roads and levelling of siding area. Rest all the wastes has been dumped in the dump yard.			
	d) Protective Measures taken from prevention of siltation, erosion and dust generator for waste material:	Garland Drains made around the entire dump yard. Dust suppression carried out regularly for controlling fugitive emission and air-borne.			
	e) Quantity of waste material re- handled/back-filled:				
	f) Height of dump and its stability measures taken:	Dump Height of dump is 30m. The stability measures taken are: - Dedicated dozer deployed for proper dozing and compaction. - Dumping carried out under constant supervision. - Garland drain prepared to guide rainwater away from dump area. - Scientific studies for stability carried out through NIT Rourkela and all recommendations thereof are followed. - One Slope monitoring Officer has been deployed for monitoring of slope and dump management.			
20	Topsoil Management				
	a) Topsoil available at site:	Topsoil available at site is 10,00,000 m ³ (approx.) upto March 2024.			
	b) Utilization of topsoil during 2023-24	Nil Sister is below down			
21	a) Coal beneficiation facilities adopted:	No beneficiation is being done			
	 b) Maintenance of coal washeries being done: 	Not applicable			
	 c) Dismantling of structure of washery (describe briefly): 	Not applicable			

^{22.} Subsidence management (for UG mine): Not Applicable as the subject mine is an opencast mine.

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23. Infrastructure:

Future Utilisation	Maintenance			
Yes	Being Maintained			
None	Not applicable			
Yes	Being Maintained			
Yes	Being maintained			
Yes	Being Maintained			
Yes	Being Maintained			
Yes	Being Maintained			
None	Not applicable			
Yes	Being Maintained			
None	Not applicable			
Yes	Being Maintained			
Yes	Being maintained			
Nil	Not applicable			
Yes	Being maintained			
yes	Being maintained			
	Yes None Yes Yes Yes Yes Yes Yes None Yes None Yes None Yes None Yes None Yes Yes			

 Disposal of Machinery: Decomming Machinery and their possible putilization: 	nissioning of Not applicable during FY 2023-24 post mining
-------------------------------------------------------------------------------------------------	------------------------------------------------------------

25. Safety and Security:

a	Safety measures implemented to prevent access to surface opening for Underground working (barbed wire fencing done):	Not applicable
b	Safety measures implemented to prevent access to surface opening for excavation:	Safety measures implemented to prevent access to surface opening for excavation: Barbed wire fencing at the top of excavation area Bund all along the excavation area with garland drain/ Trench cutting. Installation of barriers and posting of security guards at the entry point/ check gates. Photograph of Safety Zone Fencing & is attached as Annexure-VIII.
С	Arrangement made up to the site being opened for general public:	Visitors are being allowed to enter in mines only after the permission of Mine Manager and are assisted by competent person during their visit.
d	Sealing of mine entries:	Not applicable

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26. Economic Repercussions of Closure of Mine:

а	Number of local residents employed in the mine:	About 300 Nos. of local residents have been appointed through different associated agencies till March 2024.
b	Compensation given to the employees concerning their sustenance:	Not applicable
c	Vocational / Skill development training for sustainable income of affected people:	Various skill development programmes are being undertaken. Training to employed persons for different skills like fitter, electrician, driving, welding, surface disinfectant making etc. are being taken up for the project affected people before employment in mine. Various other income generation schemes like Tie & dye training, mushroom cultivation, skill development etc. have been taken up. Project has spent a total of approx. Rs. 24 Lakhs under different head like health, education, infrastructure, drinking water, capacity building / skill development in FY 2023-24.

26. Any other closure activities as per approved Mine Closure Plan: Manpower has been engaged in Mining, Survey, Environment, Geology, Chemist for executing the mine closure activities.

OTHER CLOSURE ACTIVITIES AS PER APPROVED MINE CLOSURE PLAN

1. Mined area and waste management

1.1 Topsoil has been staked separately and will be spread over the slopes and dump area before plantation and garland drain made around topsoil dump. Photograph has been attached. Photograph of Topsoil Slope Grassing is attached as Annexure-IX.

1.2 Overburden excavated from the mine is being dumped in the earmarked external dump Yard, partly over the coal bearing area after due approval of MoEF&CC which will be re-handled afterwards to extract coal and partly over the De-Coaled area of mine. After completion of external dump yard, this waste dump will be completely vegetated.

1.3 Hazardous waste authorization for Workshop & store obtained from SPCB. Used oil storage yard is provided at workshop with corner collection pit. Disposal of hazardous waste is being done as per statute.

1.4 Barbed wire fencing has been done along the mine boundary for about 13 Km till Mar'2024 and under progress for balance area. Safety Zone Fencing & Plantation is attached as Annexure-VIII.

2. Environmental Management

2.1 Plantation done / distributed during various occasions of environment and social functions inside the site office/ Pit Office, mine boundary and other vacant patches. During 2023-24 total 16,923 no of saplings has been carried out during monsoon period in different region. Cumulatively, about 59,665 No's of saplings have been planted/ distributed in and around the project area.

2.2 Regular pollution monitoring of all vehicles involved in the mining project are in practice to control emission during operation of the mine.

2.3 Protective respiratory devices are available to personnel working in dusty areas. They are provided with adequate training and information on safety & health aspects once in a year.

- 2.4 Water sprinkling is being done through 07 nos. of mobile water sprinkling tankers (i.e. 06 nos 18 KL and 1 no of 22 KL) in the coal transportation and Mine Haul road route.
- 2.5 0.9 km length of fixed water sprinkling system has been installed.
- 2.6 Water sprinkling through spray nozzles installed and under operation at Interim Crusher.
- Proper maintenance of haul road and other roads in around the mine is being taken up.
- 2.8 Wet drilling is being practiced for drilling OB benches for OB removal.
- 2.9 Surface Miner used for coal extraction are equipped with Water suppression measures through nozzles at cutting drum.
- 2.10 Transporting vehicles carrying the loaded materials are fully covered with tarpaulins covers to avoid dust generation and spillage.
- 2.11 Water seepage from the benches is drained to the sump in the bottom of the mine pit. Clear water from this sump is used in mining activity.
- 2.12 To reduce the mine working/ OB dump, Catchment water drain / Garland drain has been made which are connected to the Sedimentation Pond /Settling Ponds. The details of garland drains are as follows:

Garland/catch drains having width and depth of 1.5m to 2.0m have been constructed along OB Dumps. Details of the same is as under:

OB dump-1A : 2350 m
 OB dump-1B : 2920 m
 Khuntijharia OB dump : 2578 m
 Beldihi OB dump : 1120 m

Up-side of the mine : 2350 m (This prevents entry of outside storm water into the mine pit)

- 2.13 ETP having 50KLD capacity has been started operational from January'20 onwards and is being used for treatment of Effluent water generated during Washing of Wheel.
- 2.14 For offices a septic tank followed by a soak pit has been provided. The township of NTPC Dulanga is integrated with NTPC Darlipalli and STP of 1200 KLD is provided in the integrated township.
- 2.15 The treated effluents are as per prescribed standards and are being reused for horticultural purpose.
- 2.16 The water so collected is being utilized for watering the mine area, roads, green belt development, etc.
- 2.17 The project has de-silted 08 nos. ponds in the surrounding villages.
- 2.18 The post project air / water / noise quality/ ground water level is being monitoring through a NABL Accredited laboratory.

3. Management of Infrastructure and Mining Machineries

- The site office/ Pit office has been established and is being maintained as per requirement of DGMS.
- 3.2. Coal handling plant and Silo for rapid loading is operational.

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- 4. Action for safety and security of local community around the mine or part of the mine
- For regular inspection of the OB Dumps, drains, a safety officer assisted with the mine overman has been posted.

OISF has been deployed to keep access control in the Mine area.

5. Social and Economic Aspects.

 300 No's of local residents have been appointed through different associated agencies as on March 2024.

5.2. Project has spent a total of approx. Rs. 24 Lakhs under different head like health, education, infrastructure, drinking water, capacity building / skill development in FY 2023-24 towards CD / CSR activities.

6. Execution and supervision

- 6.1. Two Nos. of JCBs have been hired for the toe wall and garland drains and de-silting.
- 6.2. Environment Management Cell has been formed for execution of the progressive closure and environment related works in addition to ensure compliance of Environment & Forest related compliance.
- 6.3. For catchment drain survey, boundary survey and demarcation of total project area and updating the quarterly plans, one Mine surveyor assisted with 02 nos of Asstt Surveyor, 01 nos chainman and 2 Nos Survey helper have been posted for survey related work for execution of the closure work.
- 5.4. For regular inspection of the OB Dumps, peripheral and internal drains, a safety officer assisted with the mine overman has been posted.
- 6.5. Towards CD / CSR activities a dedicated team under the leadership of E-6 executive assisted with 5 executives has been formed to execute community development activities. Additionally, 02 nos. doctors led by CMO and assisted by dresser and attendants have been posted for regular medical camps and also 24x7 two no's of ambulance has been deployed for the above.
- Security personnel from Odisha Industrial security Force (OISF) have been deployed to keep access control in the mine and also for security of local communities.

27. Post Environmental Monitoring for 3 years (to be given after closure of mine): Will be submitted after closure of the mine.

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(Signature of Competent Authority)

Name: Brij Raj Prasoon

Designation: General Manager Date with seal: 28.06.2024

Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Application for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Renewal of NOC to Dewater Ground Water for Mining Industry (Application for Renewal of NOC)

Application Number: 21-4/513/OR/MIN/2013

Old Application Number: 21-4(513)/SER/CGWA/2013

1.	General Information:					
	Water Quality:	Fresh V	Vater			
	Purpose of Renewal Application:	Existing	with Additional Ground Water Requirment			
	Application Type Category/ Type of Application	Coal				
2.	Name of Mine/Project:	M/S NTPC MINING LIMITED				
3.	Location Details of the Mining Unit- (Attach Site, A Outside) (\$):	Approved Mining Plan, Toposketch of Surrounding 10km Radiu				
	Address Line 1 :	M/S NTPC LTD.				
	Address Line 2 :	DULAN	GA COAL MINING PROJECT			
	Address Line 3 :					
	State:	ODISH	A			
	District:	SUNDARGARH				
	Sub-District:	HEMGIR				
	Village/Town:	Dulinga				
	Latitude:					
	Logitude:					
	Area Type :	Non-Notified				
	Area Type Category :	Safe				
	Whether industry is MSME:	No				
4.	Communication Address					
	Address Line 1:	DULANGA COAL MINING PROJECT				
	Address Line 2:	M/S NTPC LTD.				
	Address Line 3:	AT: KHAPURIKACHHAR, PO: SANGHUMUDA				
	State:	ODISHA				
	District:	SUNDARGARH				
	Sub-District:					
	Pincode:	770013				
	Phone Number with Area Code:					
	Mobile Number:	91 9437565805				
5.	Fax Number: Details of Existing NOC issued by CGWA (enclose F_Mail:	se copy)				
	NOC Letter No:	PHO_UM	CGWA/NOC/MIN/REN/2/2022/7124			
	Date of Issuance:		05/08/2022			
	Vailidity (Start):		04/12/2021			
	Validity (End):		03/12/2023			

Government of India Ministry of Jal Shakti

Department of Water Resources, River Development and Ganga Rejuvenation Central Ground Water Authority (CGWA) Application for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Renewal of NOC to Dewater Ground Water for Mining Industry (Application for Renewal of NOC)

Application Number: 21-4/513/OR/MIN/2013

Old Application Number: 21-4(513)/SER/CGWA/2013

Applied For Renewal : 3rd

		son for not applying for redity (Attach Affidavit):	enewal before expiry of NOC							
6.	Cha	Change in Land Use Pattern after execution of Project and Surroundings (10 km Radius - Outside)								
Built-up land: 1560.36 Ha Agricultural land: 3325.06 Ha Forest Land: 25268.40 Ha Wasteland: 16839.84 Ha Waterbodies: 216.99 Ha										
7.	Land	d Use Detail of Project Ar	ea							
		Land Use Details	Existing (sq meter)	Proposed (sq meter)	Grand Total (sq meter)					
	Gree	en Belt Area	4664600.00	0.00	4664600.0					
	Ope	en Land	3833500.00	0.00	3833500.0					
	Roa	d/ Paved Area	131900.00	0.00	131900.0					
	Roo	ftop area of building/ ds	76300.00	0.00	76300.0					
	Tota	al	8706300.00	0.00	8706300.0					
8.		ether there is a change in execution of the Project:	Topography of the Area after	Yes						
	a)	Regional		No change in Regional topography is envisaged on account of our Project execution.						
	b)	Project Area		Within the project area and during the course of mining activities, void area shall be created on account of excavation. Thereafter it shall be matched with up to 30r from existing ground level after completion of reclamatio activities as per EC stipulation.						
9.		ether there is change in D or the execution of the Pro	rainage pattern of the area ject:	No						
	a)	Regional								
	b)	Project Area								
10.		sent Townships / Villages ject:-	within 10 km radius of the	Villages: (i) Partly or wholly within project Beldihi, Majhapada, Khuntijharia (ii) Outside Project: Kalamegha, Manoharpur, Paramanandpur, E Raidihi, Chuabahal, Masina, Sa Kiripsira, Garjanbahal, Kanika, I	a, Khapurikachhar, , Ghumudasan, Bendrichua, Lajkura, rbahal, Kuntabaga,					

Durubaga,

Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Application for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Renewal of NOC to Dewater Ground Water for Mining Industry (Application for Renewal of NOC)

Application Number: 21-4/513/OR/MIN/2013

Old Application Number: 21-4(513)/SER/CGWA/2013

Applied For Renewal: 3rd

11.	Whe	ther th	ne Groundwa	ter Table v	will be Inte	ersected by a	Activity :-			Yes		
	(a)	At Wh	nat Depth (m	bgl)				Pre-mo	nsoon	Post-m	Post-monsoon	
		Minim	num (m bgl)						2.00		1.50	
		Maxin	num (m bgl)					10.00				
	(b)	Maxin	num Depth P	roposed t	o Dewater	(m bgl)		195.00				
	(c) Groundwater Flow Direction (Attach Map)(\$)							North-West	to South-Eas	st		
	(d)	Any C	ther Informa	tion				Groundwate Hydrogeolog		on as per f November :	2023	
12.	Tota	l Wate	r Requirmen	t for vario	us Purpos	se to be Men	tioned	Existing (m3/day)	Additional (m3/day)	Existing (m3/year)	Additiona (m3/year)	
	Gro	und W	ater Required	l through	Abstract :	Structure		91.00	0.00	33215.00	0.0	
		und Wa	ater Abstract	ed on acc	ount of D	ewatering / N	Mining	318.00	2357.00	116070.00	860305.00	
	Tota	I Grou	nd Water Wit	hdrawal				409.00	2357.00	149285.00	860305.0	
13,	Deta	ils of	De-Watering	Structure								
	(a)	De-W	atering Existi	ng Struct	ure							
	Num	ber of	Existing Stru	uctures:			2					
		SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours(Day) / Days (Year)		Horse Power of Pump	Whether fitted with Water Meter	Whether Permission Registered with CGWA /If so Details Thereof	
		1	Mine Pumps / 2021	-1-		250.00	1 / 365	Centrifugal Pump		Yes	Yes / -	
		2	Mine Pumps / 2022	-1-		138.00	2 / 365	Centrifugal Pump	127.00	Yes	Yes / -	
	(b)	De-W	atering Requi	irment and	d Addition	al Structure	Detail					
	Num	ber of	Proposed St	ructures:			4					
		SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)		Operational Hours(Day) / Days(Year)	Mode of Lift Name	Horse Power of Pump	Whether fitted with Water Meter	Whether Permission Registered with CGWA/If so Details Thereof	
		1	Mine Pumps / 2023	-1-		94.00	4 / 365		89.00	No	No / -	
		2	Mine Pumps / 2023	-1-		84.00	4 / 365	Centrifug al Pump	100.00	No	No / -	
		3	Mine Pumps / 2023	-1-		84.00	4 / 365	Centrifug al Pump	100.00	No	No / -	

Ministry of Jal Shakti
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Applied For Renewal: 3rd

		4	Mine Pumps / 2023	-1-		86.00 4	/ 365	Centrifug al Pump	100.00	No	No / -	
14.	4. Details of Utilization of Pumped Water (Please Attach Details)(m3/year) (\$)											
	(a)	Water	Supply		No							
	(b)	Agric	ulture		No							
	(c)	Greer	Belt Develop	ment	Yes			73000.00	Mine seepa	ge water to I	oe used.	
	(d)	Supp	ression of Du	st	Yes			36500.00	Mine seepa	ge water to I	oe used.	
	(e)	Rech	arge		No							
	(f)	Any C	Other Item		Fire: 3650 Rainfall R	00 m3/year 10 m3/year unoff: 160600 280 m3/year	lm3/year					
15.	Mon	Monitoring of Ground Water Regime (Attach Map(\$))										
	(a)	Location Details of the Wells / Piezometers (Latitute, Longitude, Reduced Level)						21.942086 Deg. N, 83.831909 Deg. S				
	(b)	Number of Wells / Piezometers					1 (Piez	1 (Piezometer)				
	(c)	Attach Details of GW Level of Observation Wells / Piezometers(At Least for One Year)(\$)					Attache	Attached				
	(d)	Gene	ral Quality of	GW in the	Area & Su	ırroundings	(\$) Report	Report Attached				
	(e)	Any C	Other Item				Report	Report Attached				
16.	Give the details of change in groundwater regime and quality after execution of the project (Attach detailed report with Map showing GW flow direction(\$))											
	Exis	ting re	gime has not a	ltered mucl	n on accou	ınt of project a	activities.					
17.	Pro	posed	Pump / Pump	ing Groun	dwater Ou	utside the Mi	ne Pit for D	omestic or	Other Use	(If so, give [Details):	
	Nun	nber of	Existing Stru	ctures:			2					
		SNo.	Type of Structure Name / Year of Constructio n	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operation al Hours (Day) / Days (Year)		Horse Power of Pump	Whether fitted with Water Meter	Whether Permission Registered with CGWA/If so Details Thereof	
		1	Borewell / 2018	-1-			6 / 365	Submersi ble Pump		Yes	Yes / -	
		2	Borewell / -	-1-		2.20	10 / 365	Submersi ble Pump		Yes	Yes / -	

Ministry of Jal Shakti
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Applied For Renewal: 3rd

	Number of Additional Structures:				3						
		SNo.	Type of Structure Name / Year of Constructio n	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operation al Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether fitted with Water Meter	Whether Permissio n Registered with CGWA/If so Details Thereof
		1	Borewell / 2023	-1-		2.00	10 / 365	Submersit le Pump)	No	No / -
		2	Borewell / 2023	-1-		2.00	10 / 365	Submersit le Pump)	No	No / -
		3	Borewell / 2023	-1-		2.00	6 / 365	Submersit le Pump)	No	No / -
18.	(a). C	ompl	iance to the (Condition p	orescribed	in the NOC					
	SNo.		Condition	s given in	iven in NOC Compliance Conditions Applicable		itions	Status of Compliance		iance	
	1	Area	a Specific Plan	tation		Not Applic	able		Not Applica	ble	
	2	Domestic Water School Sanitation			Not Applicable			Not Applicable			
	3		undwater qual soon and Pos		ng - Pre	Yes				tored and all tl ermissible lim	
	4	Mai	ntenance of re	charge stru	ıctures	Yes				ted by NTPC to of Rain wate site office.	
	5		nber of Pizome er Level Reco		r NOC and	Yes			installed an	r of piezomete d has being co through online em.	ontinuous
	6	Nun	nber of Tubew C	ells Borewa	ales as per	Yes				stalled 2 numb Fele-metric) ar	
	7	1000 200	ometer fitted w metrry as per l	[[일반]][[발발]	with	Yes			with AWLR Link http://mana Login I'd – r		gmail.com
	8 Quantum o		intum of Groun	ndwater as	per NOC	Yes				- 4 Th	
	9	Rec	harge through	ponds		Not Applic	able		Till date tota constructed	al 13 No's of p or Desilted.	ond has been
	10	Rec	ycle and reuse	e of water		Yes			commission water gener	has been cor led in January rated after veh eated and reu	2020. Waste icle washing

Government of India Ministry of Jal Shakti

Department of Water Resources, River Development and Ganga Rejuvenation Central Ground Water Authority (CGWA) Application for Issue of NOC to Abstract Ground Water (NOCAP)

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	11	RWH and AR structures implemented	Yes	Being adopted by NTPC through		
				construction of Rain water harvesting structure at site office.		
	12	Submission of Compliance report to the Region	Yes	Submitted		
	13	Water conservation measures	Yes	Being adopted by NTPC through construction of Rain water harvesting structures, pond deepening (including new construction) in villages, Checkdams.		
	14	Water Security Plan of villages	Not Applicable	Not Applicable		
	15	Well monitored around the plant premises	Yes	Monitoring of wells in buffer zone is being carried out by NTPC and reports are being submitted regularly		
	16	Wells fitted with water meter and its Record	Yes	Existing 2 numbers of borewell for abstraction of Ground water has been fitted with water meters and its readings are being recorded.		
	(b). C	ompliance to the Condition prescribed	in the NOC - Other	THE COLUMN AND EXPERIENCE COLUMN AND ADMINISTRATION OF THE COLUMN		
	SNo.	Conditions give	en in NOC	Status of Compliance		
	1	Not Applicable		Not Applicable		
19.	Gainf	ul utilaization of pump water:-				
	The mine water is used for green belt development as well as dust suppression.					
20.	Details	s of Rrainwater Harvesting and Artificial Re	charge Measures for Grour	ndwater Recharge in the Area:-		
	Rainwater harvesting structures has been constructed in office premises. Till date total 13 No's of pond has been constructed/ Desilted					
МІМ	NG HS	SF. Self Declaration				

MINING USE- Self Declaration

✓ I hereby certify that the data and information furnished above are true to the best of my knowledge and belief and I am aware that if any part of the data / information submitted is found to be false or misleading at any stage, the application will be rejected outright.

I hereby declare that all the mandatory documents prescribed in the application form have been uploaded and no blank /irrelevant documents have been uploaded. I am also aware that any false/ wrong submission /uploading of document will lead to rejection of my application without any notice.

It is to certify that no case related to ground water withdrawal/ contamination is pending against the industry/ project/ unit as on date. Any such case filed against the company/ project/ unit in respect of ground water withdrawal/ contamination during the pendency of this application shall be immediately brought to the notice of CGWA.

I hereby undertake that in case any environmental compensation/ penalty is imposed on the firm by any statutory authority, I shall comply with the decision of such authority.

- Application Proforma is subject to modification from time to time.
- Application is submitted online on website http://cgwa-noc.gov.in to following office.

Regional Director, Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, NH-5, Bhubaneshwar, KHORDHA, ODISHA, 751030

3. Incomplete application will be summarily rejected.

Government of India Ministry of Jal Shakti

Department of Water Resources, River Development and Ganga Rejuvenation Central Ground Water Authority (CGWA)

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Applied For Renewal: 3rd

Scanned copy of last page of application w	ith signature and seal	should be attached a	t presribed	place before
submission of application.	₩.		55	ā

 Reciept of Processing Fee of Rs. 5000.00/- (Rupees Five Thousand Only) submitted through NON TAX RECEIPT PORTAL (https://bharatkosh.gov.in) should be attached along with hard copy of application.

Processing Fee:-

Bharat Kosh Transaction Ref. No:-	
Bharat Kosh Transaction Date:-	

Note:- The Processing Fee is Non-Refundable. Applicant should ensure and Check Eligibility of Submission of Application and Required Documents before Submitting Online Application.

5.	6. Hard copy of application required:		No		
6.	Ground Water Quality Approved	Not Define	Ground Water Charge Required:	Not Define	
	Ground Water Charge Recieve:	No	Ground Water Charge Amount:		
			Ground Water Arear Amount		

Attached Files:

1). GroundWater flow Direction Map: (Refer:11-C)

S.No	Attachment Name	File Name	
1	Hydrogeology Map	Hydro_Merged.pdf	

2). GW Level of Observation Wells / Piezometer : (Refer:15-C)

S.No	Attachment Name	File Name	
1	Peizometer	Peizometers.pdf	

3). General Quality of Ground Water in the Area: (Refer:17-D)

S.No	Attachment Name	File Name
1	Groundwater Quality Report	GW.pdf

4). Changes in Topogpraphy: (Refer: 8)

S.No	Attachment Name	File Name
1	Digital Elevation Map	Dulanga Elevation.pdf

5). Changes in Drainage Pattern: (Refer: 9)

S.No	Attachment Name	File Name	
1	Drainage Map	Dulanga Drainage Map.pdf	

6). Reason for Not Applying for Renewal before Expiring NOC: (Refer: 5)

Government of India Ministry of Jal Shakti

Department of Water Resources, River Development and Ganga Rejuvenation Central Ground Water Authority (CGWA) Application for Issue of NOC to Abstract Ground Water (NOCAP)

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Applied For Renewal : 3rd No Attachment Found!

7). Existing NOC: (Refer: 5)

S.No	Attachment Name	File Name		
1	NOC	NOC ground water 2021-23.pdf		

SNo.	Conditions given in NOC	Attachments				
		S.No.	Attachment Name	File Name		
1	Area Specific Plantation	No Attac	hment Found!			
2	Domestic Water School Sanitation	No Attachment Found!				
3	Groundwater quality monitoring - Pre monsoon and Post monsoon	No Attachment Found!				
4	Maintenance of recharge structures	No Attac	hment Found!			
5	Number of Pizometers as per NOC and Water Level Record	No Attac	hment Found!			
6	Number of Tubewells Borewales as per NOC	No Attachment Found!				
7	Pizometer fitted with AWLRs with telemetrry as per NOC	No Attachment Found!				
8	Quantum of Groundwater as per NOC	No Attachment Found!				
9	Recharge through ponds	No Attac	hment Found!			
10	Recycle and reuse of water	No Attac	hment Found!			
11	RWH and AR structures implemented	No Attac	hment Found!			
12	Submission of Compliance report to the Region	No Attac	hment Found!			
13	Water conservation measures	No Attac	hment Found!			
14	Water Security Plan of villages	No Attac	hment Found!			
15	Well monitored around the plant premises	No Attac	hment Found!			
16	Wells fitted with water meter and its Record	No Attac	hment Found!			

lo.	Conditions given in NOC		Attachments		
		S.No.	Attachment Name	File Name	

10). Extra Attachment:

No Attachment Found!

Government of India Ministry of Jal Shakti

Department of Water Resources, River Development and Ganga Rejuvenation Central Ground Water Authority (CGWA) Application for Issue of NOC to Abstract Ground Water (NOCAP)

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Applied For Renewal: 3rd

11). Bharat Kosh Reciept (Porcessing Fee):

No Attachment Found!

12). Application with Signature and Seal:

S.No Attachment Name		File Name		
1	Application Undertaking	Application Undertaking pdf		

13). MSME certificate in case of MSME:

No Attachment Found!

Date : Name & Signature of the applicant

Place: (With official seal)

Associated User: ntpcdulanga Submitted By User: ntpcdulanga Submission Date: 09/11/2023

^{*} In case signed by any authorized signatory, the details of the signatory with the authorization shall be enclosed.





GSTIN: 21AAACE6224D1ZE

ANNEXURE - XIX

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.

DEPTH OF GROUND WATER TABLE

Date.....

Date: 30 May 2024

Name and Address of the Customer

Dulanga Coal Mine of M/s NTPC Limited in Sundargarh

district, Odisha.

Date of Measurement

04/05/2024

Measurement Taken by

Representative of ERS (I) Pvt. Ltd.

Measurement carried out in presence of:

Representative of the Customer

SI. No.	Location	Depth (Below Surface level in meter)
01	Bore well near Weigh Bridge No.3 &4	1.93
02	Bore Well R & R Colony, Kalamegha (near Market Complex)	9.04
03	Open well in Village Khuntjharia	7.49
04	Open well in Village Bendrichua	5.26
05	Open well in Village Kathfali	4.75
06	Open well in Village Kalamegha	4.12
07	Open well in Village Kanaktora	1.45

Note-

- 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.
- 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.
- 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 Sanatory) S.P.Pattanayak Tech.Mariager

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



GSTIN: 21AAACE6224D1ZE

Date.....

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

DEPTH OF GROUND WATER TABLE

Ref. No.

Date: 31 Aug 2024

Name and Address of the Customer

Dulanga Coal Mine of M/s NTPC Limited in Sundargarh

district, Odisha.

Date of Measurement

09/08/2024

Measurement Taken by

Measurement carried out in presence of:

Representative of ERS (I) Pvt. Ltd.

Representative of the Customer

SI. No.	Location	Depth (Below Surface level in meter)
01	Bore well near Weigh Bridge No.3 &4	1.75
02	Bore Well R & R Colony, Kalamegha (near Market Complex)	8.38
03	Open well in Village Khuntjharia	4.19
04	Open well in Village Bendrichua	4.67
05	Open well in Village Kathfali	1.27
06	Open well in Village Kalamegha	2.68
07	Open well in Village Kanaktora	1.12

Note-

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- 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.
- 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)

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

S.P.Pattanayak Tecn.Mariager



(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-TC7440240000002441

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 27 Apr 2024

Test Report No: ERSIPL/TR/WA/125

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha.

Date of Sampling

12.04.2024

Sample Collected by

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

Sample Collected in presence of

: Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on : 17.04.2024 : 17.04.2024

Analysis Completed on : 25.04.2024 Method of Sampling : As per Appl

As per Applicable Test Method

Quantity of Sample

3 itrs

Type of Container : Glass Bottle, HDPE Bottle

Weather Condition

Scattered Clouds

Atmospheric Temperature

: 28°C

Sample ID. No.

Location

ERSIPL/WA/292
 ERSIPL/WA/293

ETP Inlet Water
 ETP Outlet Water

TEST FINDINGS:

	17 7 4		Unit	Re		
S. No.	Test Parameters	Test Method		ERSIPL/ WA/ 292	ERSIPL/ WA/ 293	Permissible Limit As per CTO Issued by SPCB
1	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	-	7.01	7.09	6.5 - 8.5
2	Oil & Grease	IS 3025:Part 39: 2021	mg/L	3.48	1.91	10.0
3	Total Suspended Solids	IS 3025:Part 17: 1984 Reaffirmed-2022	mg/L	27.6	9.1	50.0
4	COD	IS 3025:Part 58:2006 Reaffirmed-2022	mg/L	16.0	16.0	150.0

Note-

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





(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-TC744024000000305F

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/155

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in Sundargarh district, Odisha. Sundargarh district, Odisha.

Date of Sampling : 04.05.2024

Sample Collected by

R K Jena, Field Supervisor 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 : 3

Type of Container : Glass Bottle, HDPE Bottle

Weather Condition : Scattered Clouds

Atmospheric Temperature

Location

: 38 °C

Sample ID. No. 1. ERSIPL/WA/318

1. ETP Inlet Water

2. ERSIPL/WA/319

2. ETP Outlet Water

TEST FINDINGS:

		F 1938	16	Result		
S. No.	Test Parameters	Test Method	Unit	ERSIPL/ WA/ 318	ERSIPL/ WA/ 319	Permissible Limit As per CTO Issued by SPCB
1	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	-	7.1	7.13	6.5 - 8.5
2	Oil & Grease	IS 3025:Part 39: 2021	mg/L	3.51	1.97	10.0
3	Total Suspended Solids	IS 3025:Part 17: 1984 Reaffirmed-2022	mg/L	26.9	9.3	50.0
4	COD	IS 3025:Part 58:2006 Reaffirmed-2022	mg/L	16.0	20.0	150.0

Note-

- 1. 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.
- 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.Mar.ager



(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-TC744024000000362F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 01 July 2024

Test Report No: ERSIPL/TR/WA/184

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha. Sundargarh district, Odisha.

Date of Sampling

11.06.2024

Sample Collected by

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

Sample Collected in presence of

Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on : 18.06.2024 : 18.06.2024 : 26.06.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

: 3 ltrs

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition Atmospheric Temperature : Sunny : 39 °C

Sample ID. No.

Location

1. ERSIPL/WA/400 2. ERSIPL/WA/401 ETP Inlet Water
 ETP Outlet Water

TEST FINDINGS:

	-		Unit	Re		
S. No.	Test Parameters	Test Method		ERSIPL/ WA/ 400	ERSIPL/ WA/ 401	Permissible Limit As per CTO Issued by SPCB
1	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022		7.19	7.06	6.5 - 8.5
2	Oil & Grease	IS 3025:Part 39: 2021	mg/L	3.49	2.03	10.0
3	Total Suspended Solids	IS 3025:Part 17: 1984 Reaffirmed-2022	mg/L	25.7	8.8	50.0
4	COD	IS 3025:Part 58:2006 Reaffirmed-2022	mg/L	12.0	16.0	150.0

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.
- 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.
- 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.



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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@gmall.com

ULR-TC744024000000413F

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/210

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in Sundargarh district, Odisha. Sundargarh district, Odisha.

Date of Sampling

Sample Collected by

T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Collected in presence of Sample Received on

16.07.2024

Analysis Started on Analysis Completed on

16.07.2024 26.07.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

Type of Container

Glass Bottle, HDPE Bottle

Weather Condition

Sunny

Atmospheric Temperature

33 °C

Sample ID. No.

Location

1. ERSIPL/WA/481 2. ERSIPL/WA/482

1. ETP Inlet Water 2. ETP Outlet Water

TEST FINDINGS:

S. No.	Test Parameters		Unit	Re		
		Test Method		ERSIPL/ WA/ 481	ERSIPL/ WA/ 482	Permissible Limit As per CTO Issued by SPCB
1	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	1 146	7.23	7.14	6.5 - 8.5
2	Oil & Grease	IS 3025:Part 39: 2021	mg/L	3.54	2.14	10.0
3	Total Suspended Solids	IS 3025:Part 17: 1984 Reaffirmed-2022	mg/L	24.3	9.2	50.0
4	COD	IS 3025:Part 58:2006 Reaffirmed-2022	mg/L	16.0	20.0	150.0

Note:

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- Total Liability of ERS (I) Pvt. Ltd, is limited to the invoice Amount, 2.
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- 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.Mar,ager

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



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ULR-TC744024000000494F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/WA/250

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha. Sundargarh district, Odisha.

Date of Sampling

09.08.2024

Sample Collected by Sample Collected in presence of T Mohanta, Dy QM ERS(I) Pvt. Ltd. Representative of the Customer.

Sample Received on Analysis Started on Analysis Completed on 17.08.2024 17.08.2024 : 28.08.2024

Method of Sampling

As per Applicable Test Method

: 3 ltrs

Quantity of Sample Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition :

Rainy/Overcast

Atmospheric Temperature

28 °C

Sample ID, No.

Location

1. ETP Inlet Water

ERSIPL/WA/575
 ERSIPL/WA/576

2. ETP Outlet Water

TEST FINDINGS:

	Test Parameters Test Method		Unit	Re		
S. No.		Test Method		ERSIPL/ WA/ 575	ERSIPL/ WA/ 576	Permissible Limit As per CTO Issued by SPCB
1	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	1221	7.29	7.09	6.5 - 8.5
2	Oil & Grease	IS 3025:Part 39: 2021	mg/L	3.67	2.21	10.0
3	Total Suspended Solids	IS 3025:Part 17: 1984 Reaffirmed-2022	mg/L	26.5	10.7	50.0
4	COD	IS 3025:Part 58:2006 Reaffirmed-2022	mg/L	20.0	24.0	150.0

Note-

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- 3. 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/figuid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
- 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.Mariager



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

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ULR-TC744024000000547F

Test Report Format No.: ERSIPL/FM/40

TEST REPORT (WATER/WASTE WATER)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/WA/277

Name and Address of the Customer

Dulanga open cast Coal Mining project of M/s NTPC Limited in

Sundargarh district, Odisha. Sundargarh district, Odisha.

Date of Sampling

13.09.2024

Sample Collected by

Mr RK Jena, ERS(I) Pvt. Ltd.

Sample Collected in presence of Sample Received on

Representative of the Customer.

Analysis Started on

18.09.2024 18.09.2024

Analysis Completed on

: 26.09.2024

Method of Sampling

: As per Applicable Test Method

Quantity of Sample

Type of Container

: Glass Bottle, HDPE Bottle

Weather Condition

: Overcast

Atmospheric Temperature

: 28 °C

Sample ID. No.

Location

1. ERSIPL/WA/647

1. ETP Inlet Water

2. ERSIPL/WA/648

2. ETP Outlet Water

TEST FINDINGS:

		Test Method		Re		
S. No.	Test Parameters		Unit	ERSIPL/ WA/ 647	ERSIPL/ WA/ 648	Permissible Limit As per CTO Issued by SPCB
1	pH value	IS 3025:Part 11: 1983 Reaffirmed-2022	, 	7.18	7.09	6.5 - 8.5
2	Oil & Grease	IS 3025:Part 39: 2021	mg/L	3.45	2.09	10.0
3	Total Suspended Solids	IS 3025:Part 17: 1984 Reaffirmed-2022	mg/L	27.8	10.5	50.0
4	COD	IS 3025:Part 58:2006 Reaffirmed-2022	mg/L	20.0	16.0	150.0

Note-

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- 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.



एन टी पी सी बिमिटेड (भारत सरकार का उद्यप) ITPC Limited

दुलगा / Dulanga Dated: 01.02.2018

Ref. 0100/NTPC/DLCMP/MIN/DGMS/01/ \2.2

To,

The Director General of Mine Safety, O/o the DGMS, Hirapur, Dhanbad, Jharkhand- 826001

Sub: Notice of opening under Sec.16 of Mines Act 1952 and Regulation 3 of the Coal Mines Regulation (CMR), 2017 for Dulanga Coal Mining Project.

Ref.: (1) NTPC Letter No-0100/NTPC/DLCMP/MIN/DGMS/01/59 dated 22.08.2017 for Notice of Opening of Dulanga Coal Mining Project.

(2) DGMS Letter No:S-29020/35/2017/CR/11121/3046/ Chaibasa dated 26/12/2017

Sir.

Vide NTPC letter cited in Ref. (1), the Notice of Opening for commencement of mining operations in Dulanga Coal Mining project of NTPC Limited under Section 16 of the Mines Act, 1952 & Reg. 3 of CMR, 1957 had been submitted in Form-I to your good office. The Mine is about to open shortly.

DGMS vide Ref. (2), have communicated to take suitable action as per the provisions of CMR-2017 enforced vide Gazette notification No. G.S.R. 1449 (E) dated 27th November, 2017.

In compliance to the requirement of Reg. 3 of the CMR, 2017 pertaining to the Notice of Opening for Commencement of Mining Operations, we are hereby submitting the following documents along with Form-I (as prescribed in CMR 1957):

- A copy of the Surface Plan No- NTPC/DLCMP/MIN/2017/SP-02, prepared under Clause (a) of Sub-regulation (1) of Reg. 65.
- A copy of Safety Management Plan prepared under Reg. 104.

Further, as the Notice of opening in compliance to Section 16 of Mines Act and Reg.3 of erstwhile CMR 1957 had already been submitted to the DGMS vide Ref (1), we request your good office that the notice period of one month before the commencement of any mining operation shall be deemed to have been complied with under Sub-section 16(2) of Mines Act 1952.

This is for your information and kind consideration please.

Thanking you,

Yours faithfully

(Vickram Chandra Dubey)

Agent

Designation: Addl. General Manager

Enclosure: As above

CC:

 The Dy. Director General of Mine Safety, South Eastern Zone, CMPDIL Campass, 3rd floor, old building, Kanke Road, Ranchi, Jharkhand-834002.

2. The Director of Mine Safety, Chaibasa Region, Chaibasa, West Singbhum, Jharkhand-

The Collector and District Magistrate, Sundargarh, Odisha-770001

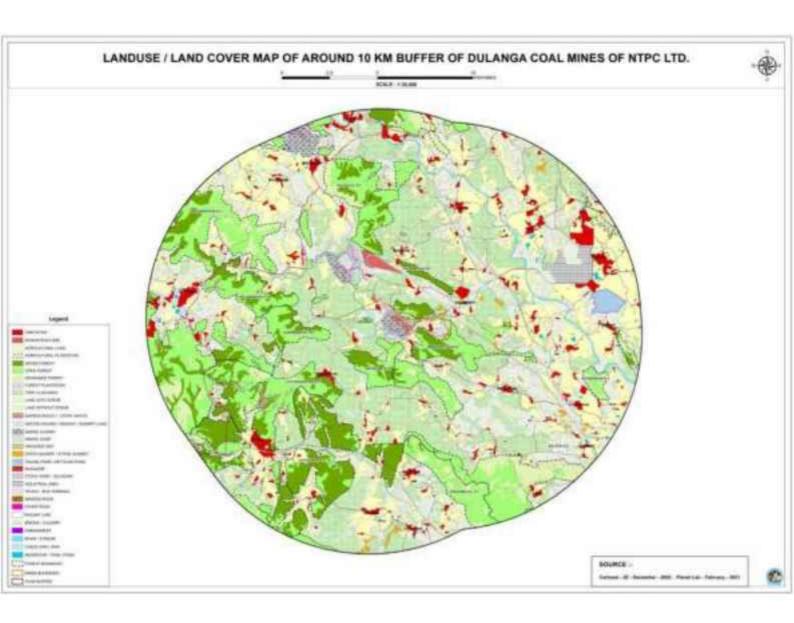
दुलंगा कोल माइनिंग प्रेजेक्ट, द्वितीय तल, मेघ मल्हार, मिशन रोड, सुन्दरगढ़-770001 (ओड़िशा), तूरभाष : 06622-275501(कार्यालय), फैक्स : 06622-275178 Julange Coal Mining Project, 2nd Floor, Megh Mallahar, Mission Road, Sundargarh-770001 (Odisha), Phone : 06622-275501 (O), Fax : 06622-275178

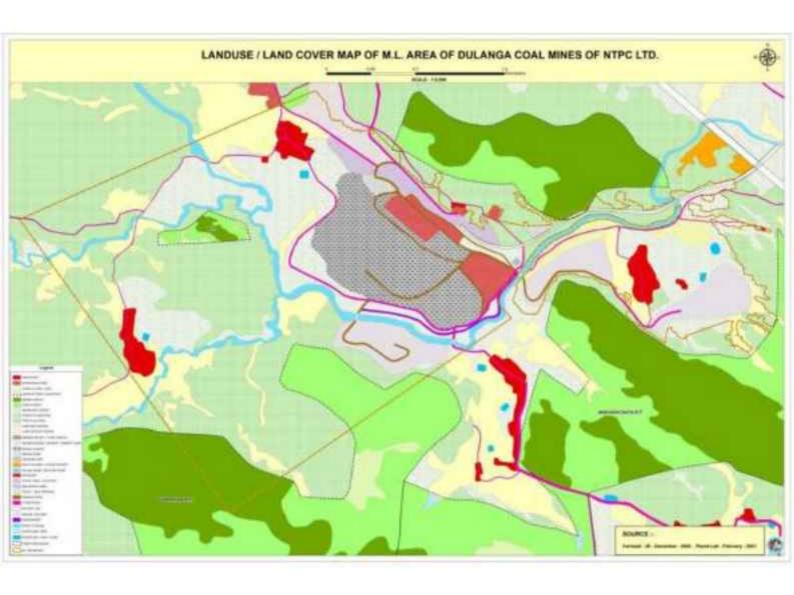
पंजिकृत कार्यासय : एन टी पी सी भवन, स्कोप काम्प्लैक्स, 7 इन्स्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली - 110 003 कार्येरेट पहचान नम्बर : L40101DL1975GOI007966, टेलीफोन नं. :011-24387333, फैसा नं. : 011-24361018, ई मेल : nipccc@ntpc.co.in, वेवसाइट : www.ntpc.co.in

Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi - 110 003 Corporate Identification No.: L40101DL1975GOi007966, Telephone No.: 011-24387333, Fax No.: 011-24361018, E-mail : ntocco@ntpc.co.in. Web Site : www.ntoc.co.in

Cont....2/-

ANNEXURE - XXII





ANNEXURE : V(b)

No.13016/27/2012-CA-I Government of India Ministry of Coal

ANNEXURE - XXIII

To,

New Delhi, the 4 August, 2012

Shri A.K.Dash,

Addl GM(PE-Mine Planning & Design) 5th Floor, Engineering Officer Complex, Sector-24

NTPC Limited, NOIDA- 201 301

Subject:

Approval of Revised Mining Plan including Mine Closure Plan (1st Revision) (April 2012) of Dulanga coal block of IB Valley Coalfield, Distt. Sundergarh, Orissa -Reg.

Sir,

()

I am directed to refer to your letter no. CC:PEM:7015:MP:30 dated 17th October, 2011 submitting therewith Revised Mining Plan including Mine Closure Plan (1st Revision) (April 2012) of Dulanga coal block of IB Valley coalfield, Distt Sundergarh, Orissa and to say that the matter has been considered and the approval of the Central Government thereon is hereby conveyed under Section 5(2)(b) of the Mines & Minerals(Development & Regulation) Act, 1957 subject to the following conditions:-

- The mining company shall take all necessary precautions regarding safety of mine (i) workings, persons deployed therein.
- Mining Lease to be acquired shall not encroach into any other coal block. (ii)
- The approval of the Mining Plan is without prejudice to the requirement of (iii) approvals from competent/prescribed authority under the relevant rules/regulations etc.
- Two copies of the approved Revised Mining Plan including Mine Closure Plan (1st Revision) duly signed by the competent authority are returned herewith with the request that a copy of the approved Revised Mining Plan including Mine Closure Plan (1st Revision) may be submitted to the concerned State Government for necessary action and also a photocopy of the approved Revised Mining Plan including Mine Closure Plan (1st Revision) may be sent to the Coal Controller for monitoring the block.

Yours faithfully

(Sandeep Gupta)

Under Secretary to the Govt. of India

Encl: as above

Copy to:

The Under Secretary, CPAM Section, Ministry of Coal for information and record.



Environment Policy-2021

I. Purpose:

NTPC being country's largest power generator, with its presence across the energy value chain, recognizes that protection of environment is essential for sustainable business.

In the context of Environment Policy, the definition of environment covers all the domains of environment - Physical, Chemical, Biological and Socio-economic aspect.

NTPC hereby adopts Environment Policy-2021, superseding its earlier policy document of 2017.

The intent of this policy is to meet environmental expectations and provide actionable guidance, as NTPC strives to foster a culture of excellence and challenges itself for continual improvement.

II. Policy Statement:

"To provide cleaner energy by committing to highest possible levels of performance in environmental compliance, practices and stewardship."

III. Applicability:

This policy shall apply to all establishments of NTPC and each employee shall be made a partner in implementing the policy.

IV. Principles:

This policy is based on the following principles:

 Consideration of Environmental factors right from the stage of planning, design and operation of project/station to ensure that mandatory principles of conservation and sustainability are adhered to.

This document contains:

- I. Purpose
- II. Policy Statement
- III. Applicability
- IV. Principles
- V. Institutional Framework
- VI. Policy
 - Stewardship
 - Compliance & Assurance
 - Stakeholder Engagement
 - Capacity Building
- VII. Review





- Adopting the best possible Environment management practices and state-of theart technology to minimize impact of business on Environment.
- NTPC's commitment as a responsible corporate citizen is demonstrated by striving to achieve and setting benchmarks not limited to statutory compliance.
- Innovation by carrying out Research & Developmental activities, coupled with enablers leading to continual improvement.
- Accepting accountability for all operations and expeditiously respond to any aberration.
- Continuous monitoring and sharing of environmental indicators with stakeholders.
- Develop each employee as environmental steward by improving his awareness levels while soliciting his commitment.

V. Institutional Framework:

Three tier structure for environmental systems implementation:

- Corporate Level Functions Engineering, planning and monitoring
- Regional Level Functions Compliance monitoring, Facilitators to stations and Coordination between Stations & Corporate.
- 3. Stations: Functions Execution and reporting









Note: These charts do not reflect the organizational structure/reporting arrangement, but serve to identify responsible departments within NTPC.

VI. Policy:

NTPC shall achieve these objectives by:

1. Stewardship:

NTPC shall:

- Adopt a pro-active approach, place environmental aspects as one of the prime consideration in decision-making process.
- Identify and manage environmental impacts due to business activities, by adopting possible latest environment management technologies and practices.
- Act to manage risks, as identified by Risk Management Committee (RMC)*.
- d. Evaluate performance of Environment protection equipment, program and practices, with respect to legal provisions and prepare action plans for concerned functional groups.





- Ensure efficient and optimal use of resources such as land, water, fuel, construction materials, oils, and chemicals etc, especially the nonrenewables.
- Spearhead waste management by 3Rs principles (reducing, re-using, and recycling) and safe disposal.
- g. Adopt more environment friendly and energy-efficient inputs.
- Provide innovative technological solutions to environment related issues.
- Benchmark parameters to establish and adopt best practices.
- Take up environmentally befitting projects in areas of climate change, renewable energy, conservation and responsible consumption of natural resources under Sustainable Development initiatives.
- Adopt principles of green procurement by incorporating appropriate provisions in contracts and procurements.
- To formulate and adopt separate Policies for Ash, Rehabilitation & Resettlement, Community Development – Corporate Social Responsibility and Sustainable Development.
- m. Creation of carbon sink by adding green cover in and around NTPC Stations.
- *RMC comprises of members from senior functionaries of management as per provisions of Companies Act 2016.

2. Compliance and Assurance:

- a. NTPC shall continue to comply with all relevant environmental regulations, standards and other codes of practice, by operating and maintaining the assets within the boundary of permits, consents, and licenses.
- b. Risk Management Committee, shall establish system for reporting environment related parameters, deviations and constraints to Management. Environmental risks perceived shall be reviewed through risk management mechanism for appropriate action.
- Concerned group shall oversee compliance assurance of operating stations through reviews and appraisals.





 Requirement stipulated in all obtained clearances shall be complied with, including in new establishments and expansions.

3. Stakeholder Engagement:

NTPC shall continue to identify all stakeholders and engage with them at appropriate levels, to exchange views on environmental concerns and mitigation measures thereof.

4. Capacity Building:

- a. NTPC shall ensure all employees are made environmentally aware, to enable them to integrate its principles into their activities and decisions by conducting the suitable trainings/skill development programmes.
- Environment Management Group shall come up with focused requirements (including skill training and culture building), clearly bringing out the desired objectives, audience and responsibility.

VII. Review:

This policy shall be reviewed at opportune time, but not later than once in three years.





TC-7440

Pg No: 1 of 1



Environmental Research and Services (India) Pvt. Ltd.

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

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ULR-TC7440240000000233F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Test Report No: ERSIPL/TR/AA/93

Date: 27 Apr 2024 Dulanga open cast Coal Mining, Project of M/s NTPC Limited in Name and Address of the Customer

Sundargarh district, Odisha. Representative of ERS (I) Pvt. Ltd. Sample Collected by

Representative of Customer Sample Collected in presence of

13-14.04.2024 Date of Sampling/Monitoring 17.04.2024 Sample Received on 17.04.2024 Analysis Started on 25.04.2024 Analysis Completed on

As per Applicable Test Method Method of Sampling 01 sample for each parameter Quantity of Sample

Scattered Clouds Weather Condition 18.0 - 31.0 °C Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max) 1012-1016 mbar

Locations (Buffer Zone) Sample ID. No.

Near Village Bendrichua ERSIPL/AA/318 Near Village Rengalmunra 2 ERSIPL/AA/319

Near Village Khuntjharia ERSIPL/AA/320 Near Village Kathfali ERSIPL/AA/321

TEST FINDINGS:

	TEU I		1 -03	Permissible	Results						
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 318	ERSIPL/ AA/ 319	ERSIPL/ AA/ 320	ERSIPL/ AA/ 321			
1	Suspended Particulate Matter (SPM)	iS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	Not Prescribed	211.24	202.66	191.61	201.25			
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	78.18	74.94	75.12	74.10			
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS S182 (Part 24): 2019, Gravimetric Method	μg/m ³	60.0	35.67	32.99	33.58	30.59			
4	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.21	7.08	8.26	7.26			
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	80.0	11.99	12.56	11.56	11.17			

Note-

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This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I)





GSTIN: 21AAACE62Z4D1ZE

Environmental Research and Services (India) Pvt. Ltd.

(OSPCB 'A' Category Empanelled Laboratory and 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

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 27 Apr 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of

Date of Sampling/Monitoring Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

 ERSIPL/AA/318 ERSIPL/AA/319 ERSIPL/AA/320

ERSIPL/AA/321

Test Report No: ERSIPL/TR/AA/T-93

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

13-14.04.2024 17.04.2024

17.04.2024 25.04.2024

As per Applicable Test Method 01 sample for each parameter

Scattered Clouds 18.0 - 31.0 °C : 1012-1016 mbar

Locations (Buffer Zone)

1. Near Village Bendrichua

2. Near Village Rengalmunra

Near Village Khuntiharia

4. Near Village Kathfali

TEST FINDINGS:

4. 1.	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/318	<1.14
2	ERSIPL/AA/319	<1.14
3	ERSIPL/AA/320	<1.14
4	ERSIPL/AA/321	<1.14
	Permissible Limit	2.0

Note-

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(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-TC7440240000000234F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

TC-7440

Date: 27 Apr 2024

Test Report No: ERSIPL/TR/AA/94

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Sample Collected by

Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of

Representative of Customer. 12-13.04.2024

Date of Sampling/Monitoring

17.04.2024

Sample Received on Analysis Started on

17.04.2024

Analysis Completed on

25.04.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

01 sample for each parameter

Weather Condition Atmospheric Temperature (Min/Max) Scattered Clouds

20.0 - 31.0 °C 1012-1017 mbar

Atmospheric Pressure (Min/Max)

Locations (Core Zone)

 Near Excavation Area ERSIPL/AA/312

2. Near Haul Road

3. Near Dump

4. Near Workshop

Sample ID. No.

ERSIPL/AA/313

3. ERSIPL/AA/314 4. ERSIPL/AA/315

TEST FINDINGS:

	-			Permissible	Results						
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 312	ERSIPL/ AA/ 313	ERSIPL/ AA/ 314	ERSIPL/ AA/ 315			
1	Suspended Particulate Matter (SPM)	IS: S182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	307.83	310.88	293.17	294.49			
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	136.78	131.25	134.84	133.37			
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.11	8.31	8.18	8.42			
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	12.13	11.05	13.38	12.07			

Note-

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(Authorized Signatory)



(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-TC7440240000000235F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 27 Apr 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Test Report No: ERSIPL/TR/AA/95

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer.

12-13.04.2024 17.04.2024 17.04.2024 25.04.2024

As per Applicable Test Method 01 sample for each parameter

Scattered Clouds 20.0 - 31.0 °C 1012-1017 mbar

Sample ID. No.

 ERSIPL/AA/316 ERSIPL/AA/317

Locations (Core Zone)

1. Near Drilling Area

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Results			
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 316	ERSIPL/ AA/ 317		
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	308.98	293.99		
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	140.87	136.14		
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.08	7.96		
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	13.21	11.50		

Note-

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



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

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ULR-TC744024000000236F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

TC-7440

Date: 27 Apr 2024

Test Report No: ERSIPL/TR/AA/96

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 Sample Received on 20-21.04.2024

Analysis Started on Analysis Completed on 23.04.2024 27.04.2024

Method of Sampling Quantity of Sample As per Applicable Test Method 01 sample for each parameter

Weather Condition Atmospheric Temperature (Min/Max) Passing Clouds 27.0 – 43.0 °C 1000-1005 mbar

Atmospheric Pressure (Min/Max)

Locations (Buffer Zone)

- Sample ID. No. Locations (Buffer Zone)

 1. ERSIPL/AA/328

 1. Near Village Bendrichua
 - 2. ERSIPL/AA/329 2. Near Village Rengalmunra
 - 3. ERSIPL/AA/330 3. Near Village Khuntjharia 4. ERSIPL/AA/331 4. Near Village Kathfali

TEST FINDINGS:

				Permissible		Res	sults	
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 328	ERSIPL/ AA/ 329	ERSIPL/ AA/ 330	ERSIPL/ AA/ 331
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	Not Prescribed	214.94	205.46	200.61	208.53
2	Particulate Matter (size less than 10 µm) or PM 10	15 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m ³	100.0	71.77	76.80	73.10	71.79
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	32.34	33.71	32.02	31.18
4	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	8.73	7.61	8.05	8.65
5	Oxides of Nitrogen (NO _X)	is 5182 (Part 6): 2006, Reaffirmed -2022	цg/m ³	80.0	13.03	12.43	11.47	13.62

Note-

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Pvt. Ltd.





GSTIN: 21AAACE6224D1ZE

Environmental Research and Services (India) Pvt. Ltd.

(OSPCB 'A' Category Empanelled Laboratory and 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

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 27 Apr 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of

Date of Sampling/Monitoring Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

 ERSIPL/AA/328 ERSIPL/AA/329 ERSIPL/AA/330 4. ERSIPL/AA/331

Test Report No: ERSIPL/TR/AA/T-96

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

20-21.04.2024 23.04.2024 23.04.2024 27.04.2024

As per Applicable Test Method 01 sample for each parameter

Passing Clouds 27.0 - 43.0 °C 1000-1005 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua Near Village Rengalmunra
- 3. Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

-1 -1	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/328	<1.14
2	ERSIPL/AA/329	<1.14
3	ERSIPL/AA/330	<1.14
4	ERSIPL/AA/331	<1.14
	Permissible Limit	2.0

Note-

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(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager



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

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ULR-TC7440240000000237F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 27 Apr 2024

Name and Address of the Customer

Test Report No: ERSIPL/TR/AA/97

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Sample Collected by

Sample Collected in presence of

Date of Sampling/Monitoring Sample Received on

Analysis Started on Analysis Completed on

Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Representative of ERS (I) Pvt. Ltd.

Representative of Customer. 19-20.04.2024

23.04.2024 23.04.2024

27.04.2024

As per Applicable Test Method 01 sample for each parameter

Passing Clouds 25.0 - 40.0 °C 1000-1009 mbar

Sample ID. No.

ERSIPL/AA/322

ERSIPL/AA/323 ERSIPL/AA/324

ERSIPL/AA/325

TEST FINDINGS:

Locations (Core Zone)

1. Near Excavation Area

2. Near Haul Road

3. Near Dump

4. Near Workshop

			-79	Permissible		Res	ults	
SI. No	Test Parameters	Test method	Unit	Umit as per CTO No.4169, dtd.20,03.23	ERSIPL/ AA/ 322	ERSIPL/ AA/ 323	ERSIPL/ AA/ 324	ERSIPL/ AA/ 325
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	300.97	309.27	298.98	302.64
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	136.61	138.75	123.08	140.42
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.63	9.00	7.88	8.98
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	13.47	12.83	13.63	12.48
			According to the control of					

Note-

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(Authorized Signatory)



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ULR-TC7440240000000238F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 27 Apr 2024

Test Report No: ERSIPL/TR/AA/98

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Sample Collected by

Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of

Name and Address of the Customer

Representative of Customer.

Date of Sampling/Monitoring

20-21.04.2024 23.04.2024

Sample Received on Analysis Started on Analysis Completed on

23.04.2024 27.04.2024

Analysis Completed on Method of Sampling

As per Applicable Test Method 01 sample for each parameter

Quantity of Sample Weather Condition Atmospheric Temperature (Min/Max)

Passing Clouds 27.0 – 43.0 °C

Atmospheric Pressure (Min/Max)

1000-1005 mbar

Sample ID. No.

Locations (Core Zone)

1. ERSIPL/AA/326

1. Near Drilling Area

2. ERSIPL/AA/327

2. Near Coal Handling Plant

TEST FINDINGS:

10	THE PERSON NAMED IN			Permissible	Res	ults
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 326	ERSIPL/ AA/ 327
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	316.03	291.44
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	134.45	137.15
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2); 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.63	7.31
4	Oxides of Nitrogen (NO _X)	is 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	13.38	11.61

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak



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ULR-TC7440240000000294F

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

Sample Collected by

Sample Collected in presence of

Date of Sampling/Monitoring

Sample Received on

Analysis Started on

Analysis Completed on

Method of Sampling Quantity of Sample

Weather Condition

Atmospheric Temperature (Min/Max)

Atmospheric Pressure (Min/Max)

Sample ID. No.

- 1. ERSIPL/AA/362
- 2 ERSIPL/AA/363
- 3. ERSIPL/AA/364
- 4. ERSIPL/AA/365

Test Report No: ERSIPL/TR/AA/121

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

: Representative of ERS (I) Pvt. Ltd.

Representative of Customer

: 05-06.05.2024

: 14.05.2024

14.05.2024

21.05.2024

: As per Applicable Test Method

: 01 sample for each parameter

Sunny

26.0 - 44.0 °C

: 1001-1005 mbar

Locations (Buffer Zone)

1. Near Village Bendrichua

Near Village Rengalmunra

3. Near Village Khuntiharia

4. Near Village Kathfali

TEST FINDINGS:

				Permissible		Re	sults	
SI. No	Test Parameters	Test method	Unit	Limit es per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 362	ERSIPL/ AA/ 363	ERSIPL/ AA/ 364	ERSIPL/ AA/ 365
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m³	Not Prescribed	214.60	196.12	193.31	204.98
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	ug/m³	100.0	77.22	75.32	74.60	72.19
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	33.17	31.58	34.84	31.13
4	Sulphur Dioxide (5O2)	is 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	це/m ³	80.0	8.88	7.53	8.63	7.39
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	80.0	11.92	12.38	11.22	12.75

Note-

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Authorized Seaton





GSTIN: 21AAACE6224D1ZE

Environmental Research and Services (India) Pvt. Ltd.

(An ISO 9001: 2015 Certified Company)

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Test Report Format No.: ERSIPL/FM/37

Date.....

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 30 May 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of

Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- 1. ERSIPL/AA/362
- 2 ERSIPL/AA/363
- 3. ERSIPL/AA/364
- 4. ERSIPL/AA/365

Test Report No: ERSIPL/TR/AA/T-121

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

: Representative of ERS (I) Pvt. Ltd.

Representative of Customer

05-06.05.2024

: 14.05.2024 : 14.05.2024

21.05.2024

: As per Applicable Test Method

01 sample for each parameter

Sunny

: 26.0 - 44.0 °C

: 1001-1005 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- 2. Near Village Rengalmunra
- 3. Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/362	<1.14
2	ERSIPL/AA/363.	<1.14
3	ERSIPL/AA/364	<1.14
4	ERSIPL/AA/365	<1,14
	Permissible Limit	2.0

Note-

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 Pvt. Ltd.





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ULR-TC744024000000295F

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/122

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 Sample Received on

04-05.05.2024

Analysis Started on

: 14.05.2024

Analysis Completed on

14.05.2024 21.05.2024

Method of Sampling Quantity of Sample

As per Applicable Test Method : 01 sample for each parameter

Weather Condition

Scattered Clouds

Atmospheric Temperature (Min/Max) : 27.0 - 42.0 °C

: 1002-1007 mbar

Atmospheric Pressure (Min/Max)

Sample ID. No.

ERSIPL/AA/356

2. ERSIPL/AA/357

ERSIPL/AA/358

4. ERSIPL/AA/359

Locations (Core Zone)

1. Near Excavation Area

2. Near Haul Road

3. Near Dump

4. Near Workshop

TEST FINDINGS:

		Test method	Unit	Permissible		Res	ults	
SI. No	Test Parameters			Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 356	ERSIPL/ AA/ 357	ERSIPL/ AA/ 358	ERSIPL/ AA/ 359
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	302.11	308.43	294.43	291.54
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	ug/m³	250.0	133.62	127.67	136.89	131.11
3	Sulphur Dioxide (SO2)	is 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m³	120.0	9.62	7.55	8.06	8.65
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	$\mu g/m^3$	120.0	12.68	11.81	12.65	13,34

Note-

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(Authorized Signatory) S.P.Pattanayak



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ULR-TC744024000000296F

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/123

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 Sample Received on 14.05.2024

Analysis Started on

14.05.2024

Analysis Completed on

21.05.2024

Method of Sampling Quantity of Sample As per Applicable Test Method
 01 sample for each parameter

Weather Condition Atmospheric Temperature (Min/Max) Scattered Clouds

Atmospheric Pressure (Min/Max)

: 27.0 - 42.0 °C 1002-1007 mbar

Atmospheric Pressure (IVIII)

Locations (Core Zone)

ERSIPL/AA/360

1. Near Drilling Area

ERSIPL/AA/361

2. Near Coal Handling Plant

TEST FINDINGS:

Sample ID. No.

SI. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO No.4169, dtd.20.03.23	Results		
					ERSIPL/ AA/ 360	ERSIPL/ AA/ 361	
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	306.21	291.38	
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	137.85	135.11	
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Garke Method	μg/m³	120.0	9.48	7.36	
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	13.94	13.34	

Note-

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(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager



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ULR-TC7440240000000297F

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

Sample Collected by Sample Collected in presence of

Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

 ERSIPL/AA/415 ERSIPL/AA/416 ERSIPL/AA/417 ERSIPL/AA/418

Test Report No: ERSIPL/TR/AA/124

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

21.05.2024 21.05.2024 30.05,2024

17-18.05.2024

As per Applicable Test Method 01 sample for each parameter

Overcast 29.0 - 36.0 °C 1005-1008 mbar

Locations (Buffer Zone)

1. Near Village Bendrichua Near Village Rengalmunra Near Village Khuntiharia Near Village Kathfali

TEST FINDINGS:

SI. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO No.4169, dtd.20.03.23	Results			
					ERSIPL/ AA/ 415	ERSIPL/ AA/ 416	ERSIPL/ AA/ 417	ERSIPL/ AA/ 418
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	щg/m ³	Not Prescribed	212.42	208.24	201.35	204.85
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	74.11	77.22	74.87	70.87
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	32.25	33.90	32.61	30.17
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	7.85	7.93	8.07	9.21
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	80.0	13.79	12.78	11.47	12.50

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- 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. 3.
- 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.
- 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)





GSTIN: 21AAACE6224D1ZE

Environmental Research and Services (India) Pvt. Ltd.

(An ISO 9001: 2015 Certified Company)

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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 May 2024

Name and Address of the Customer

Test Report No: ERSIPL/TR/AA/T-124

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

 ERSIPL/AA/415 2. ERSIPL/AA/416

ERSIPL/AA/417

4. ERSIPL/AA/418

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

17-18.05.2024 21.05.2024 21.05.2024

30.05.2024 As per Applicable Test Method

01 sample for each parameter Overcast

29.0-36.0°C 1005-1008 mbar

Locations (Buffer Zone)

Near Village Bendrichua

2. Near Village Rengalmunra

3. Near Village Khuntjharia

4. Near Village Kathfali

TEST FINDINGS:

	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/415	<1.14
2	ERSIPL/AA/416	<1.14
3	ERSIPL/AA/417	<1.14
4	ERSIPL/AA/418	<1.14
	Permissible Limit	2.0

Note-

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- Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseout/liquid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I) Pyt Ltd.

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



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

TC-7440

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ULR-TC744024000000298F

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/125

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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

16-17.05.2024

Sample Received on Analysis Started on

21.05.2024

21.05.2024

Analysis Completed on

30.05.2024

Method of Sampling Quantity of Sample

As per Applicable Test Method 01 sample for each parameter

Weather Condition

Passing Clods

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

30.0 - 39.0 °C 1005-1011 mbar

Sample ID. No.

Locations (Core Zone)

 ERSIPL/AA/409 2. ERSIPL/AA/410 1. Near Excavation Area

3. ERSIPL/AA/411

2. Near Haul Road

ERSIPL/AA/412

3. Near Dump 4. Near Workshop

TEST FINDINGS:

SI. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO No.4169, dtd.20.03.23	Results				
					ERSIPL/ AA/ 409	ERSIPL/ AA/ 410	ERSIPL/ AA/ 411	ERSIPL/ AA/ 412	
1	Suspended Particulate Matter (SPM)	IS: S182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	ug/m ³	500.0	299.15	303.71	302.69	300.68	
2	Particulate Matter (size less than 10 μm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	μg/m³	250.0	135.37	134.61	125.28	137.08	
3	Sulphur Dioxide (5O2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m³	120.0	8.57	9.44	7.44	8.21	
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	13.37	11.62	13.15	12.60	

Note-

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(Authorized Signatory) S.P.Pattanayak



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ULR-TC744024000000299F

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/126

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Sample Collected by : Sample Collected in presence of :

Representative of ERS (I) Pvt. Ltd. Representative of Customer.

Date of Sampling/Monitoring Sample Received on Analysis Started on

21.05.2024

16-17.05.2024

Analysis Completed on Method of Sampling 30.05.2024

Quantity of Sample
Weather Condition

As per Applicable Test Method 01 sample for each parameter

Atmospheric Temperature (Min/Max)
Atmospheric Pressure (Min/Max)

Passing Clods 30.0 – 39.0 °C 1005-1011 mbar

Sample ID. No.

Locations (Core Zone)

1. ERSIPL/AA/413

1. Near Drilling Area

2. ERSIPL/AA/414

2. Near Coal Handling Plant

TEST FINDINGS:

SI. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO No.4169, dtd.20.03.23	Results		
					ERSIPL/ AA/ 413	ERSIPL/ AA/ 414	
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	ug/m ³	500.0	314.52	298.10	
2	Particulate Matter (size less than 10 µm) or PM 10	15 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m³	250.0	132.16	135.75	
3	Sulphur Dioxide (5O2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	7.94	7.77	
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	ug/m³	120.0	12.47	11.13	

Note:

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tech.Mar.ager



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ULR-TC744024000000351F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 01 July 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of

Date of Sampling/Monitoring Sample Received on Analysis Started on

Analysis Completed on Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max)

Atmospheric Pressure (Min/Max)

Sample ID. No.

- 1. ERSIPL/AA/450
- 2 ERSIPL/AA/451
- 3. ERSIPL/AA/452
- 4. ERSIPL/AA/453

Test Report No: ERSIPL/TR/AA/143

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

12-13.06.2024 18.06.2024

18.06.2024 26.06.2024

As per Applicable Test Method 01 sample for each parameter

Passing Clouds 30.0 - 41.0 °C 998-1002 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- 2. Near Village Rengalmunra
- 3. Near Village Khuntiharia
- 4. Near Village Kathfali

TEST FINDINGS:

SI. No	Test Parameters	Test method	Unit	Permissible Limit as per CTO No.4169, dtd.20.03.23	Results			
					ERSIPL/ AA/ 450	ERSIPL/ AA/ 451	ERSIPL/ AA/ 452	ERSIPL/ AA/ 453
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μ <u>g/</u> m ³	Not Prescribed	212.38	198.48	197.84	202.85
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	76.52	77.11	73.86	74.54
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	32.52	31.47	34.55	32.27
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	8.78	7.67	8.44	7.56
5	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	Em/gu	80.0	11.56	12.61	11.75	13.77
	1/40/87	Seattivines - 2022	A STATE OF THE PARTY OF THE PAR					

Note-

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 Pvt. Ltd.





Environmental Research and Services (India) Pvt. Ltd.

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Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Date	o ·		
Dat	-	 ****	

Pg No: 1 of 1

Date: 01 July 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of

Date of Sampling/Monitoring Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- ERSIPL/AA/450
 ERSIPL/AA/451
- 3. ERSIPL/AA/452
- 4. ERSIPL/AA/453

Test Report No: ERSIPL/TR/AA/T-143

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

: 12-13.06.2024 : 18.06.2024 : 18.06.2024

26.06.2024
As per Applicable Test Method
01 sample for each parameter

Passing Clouds 30.0 - 41.0 °C 998-1002 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- 2. Near Village Rengalmunra
- 3. Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI, No	ID, No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/450	<1.14
2	ERSIPL/AA/451	<1.14
3	ERSIPL/AA/452	<1.14
4	ERSIPL/AA/452	<1.14
	Permissible Limit	2.0

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



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ULR-TC744024000000352F

Test Report Format No.: ERSIPL/FM/37

Pg No: 1 of 1

TEST REPORT (AMBIENT AIR)

Date: 01 July 2024 Test Report No: ERSIPL/TR/AA/144

Name and Address of the Customer Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 11-12.06.2024 Sample Received on 18.06.2024

Analysis Started on : 18.06.2024 Analysis Completed on 26.06.2024

Method of Sampling As per Applicable Test Method Quantity of Sample 01 sample for each parameter

Weather Condition Sunny

Atmospheric Temperature (Min/Max) 28.0 - 42.0 °C Atmospheric Pressure (Min/Max) 998-1002 mbar.

Sample ID. No.

Locations (Core Zone) ERSIPL/AA/444 1. Near Excavation Area 2. ERSIPL/AA/445

2. Near Haul Road ERSIPL/AA/446 3. Near Dump

4. ERSIPL/AA/447 4. Near Workshop

TEST FINDINGS:

				Permissible		Res	ults	
SI. No		Unit	Sper CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 444	ERSIPL/ AA/ 445	ERSIPL/ AA/ 446	ERSIPL/ AA/ 447	
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	ug/m³	500.0	299.78	301.18	300.75	298.96
2	Particulate Matter (size less than 10 µm) or PM 10	15 5182 (Part 25): 2006, Reaffirmed-2022, Gravimetric Method	µg/m³	250.0	131.15	123.04	133.91	134.93
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.08	7.99	8.30	7.45
4	Oxides of Nitrogen (NO _X)	15 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	13.39	11.45	12.13	12.08

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



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ULR-TC744024000000353F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 01 July 2024

Test Report No: ERSIPL/TR/AA/145

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Sample Collected by

Representative of ERS (1) Pvt. Ltd.

Sample Collected in presence of :

Representative of Customer.

Date of Sampling/Monitoring

11-12.06.2024

Sample Received on

18.06.2024

Analysis Started on Analysis Completed on 18.06.2024

Method of Sampling

26.06.2024

Quantity of Sample

As per Applicable Test Method 01 sample for each parameter

Quantity of Sample Weather Condition

Sunny

Atmospheric Temperature (Min/Max)

28.0 - 42.0 °C

Atmospheric Pressure (Min/Max)

998-1002 mbar

Sample ID. No.

1. ERSIPL/AA/448

Locations (Core Zone)

1. Near Drilling Area

2. ERSIPL/AA/449

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Res	ults
\$1. No	Test Parameters	Test method	est method Unit as per C No.416	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 448	ERSIPL/ AA/ 449
1	Suspended Particulate Matter (SPM)	l5: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	309.78	294.30
2	Particulate Matter (size less than 10 µm) or PM 10	15 5182 (Part 23); 2006, Reaffirmed-2022, Gravimetric Method	ug/m ³	250.0	138.83	133.86
3	Sulphur Dioxide (5O2)	iS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.53	8.02
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	14.03	13.08

- The test results relate only to the items sampled and tested.
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 Pvt. Ltd.



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ULR-TC744024000000354F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 01 July 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

ERSIPL/AA/499
 ERSIPL/AA/500
 ERSIPL/AA/501

ERSIPL/AA/502

Test Report No: ERSIPL/TR/AA/146

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha. Representative of ERS (I) Pvt. Ltd.

Representative of Customer 22-23.06.2024

27.06.2024 27.06.2024 01.07.2024

As per Applicable Test Method 01 sample for each parameter

Overcast 26.0 - 32.0 °C 997-1001 mbar

Locations (Buffer Zone)

Near Village Bendrichua
 Near Village Rengalmunra

3. Near Village Khuntjharia

4. Near Village Kathfali

TEST FINDINGS:

				Permissible		Res	sults	
SI. No	Test Parameters	Test method	Unit	No.4169, dtd.20.03.23	ERSIPL/ AA/ 499	ERSIPL/ AA/ 500	ERSIPL/ AA/ 501	ERSIPL/ AA/ 502
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4)- 1999; Reaffirmed 2019; Gravimetric Method	μg/m ³	Not Prescribed	216.15	212.64	196.02	201.37
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	72.69	76.91	75.06	74.74
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	31.37	33.84	32.93	32.12
4	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	7.61	8.55	8.09	7.11
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	80.0	13.00	12.41	11.51	11.40

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- Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseous/liquid samples received shall be destroyed after 02 days from the date of issue of the test report, unless otherwise specified.
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 Pvt. Ltd.



Environmental Research and Services (India) Dvt. Ltd.

9001: 2015 Certified Company)

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Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Dat	е	*******	 *****	

Pg No: 1 of 1

Date: 01 July 2024

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Quantity of Sample Weather Condition Atmospheric Temperature (Min/Max)

Atmospheric Pressure (Min/Max)

Sample ID. No.

- ERSIPL/AA/499
- 2. ERSIPL/AA/500 3. ERSIPL/AA/501
- ERSIPL/AA/502

Test Report No: ERSIPL/TR/AA/T-146

Representative of ERS (I) Pvt. Ltd. Representative of Customer

22-23.06.2024 27.06.2024

27.06.2024 01.07.2024

As per Applicable Test Method 01 sample for each parameter

Overcast 26.0 - 32.0 °C 997-1001 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- 2. Near Village Rengalmunra
- Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/499	<1.14
2	ERSIPL/AA/500	<1.14
3	ERSIPL/AA/501	<1.14
4	ERSIPL/AA/502	<1.14
	Permissible Limit	2.0

Note-

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- 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 Teca.Manager



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

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ULR-TC744024000000355F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

TC-7440

Date: 01 July 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition Atmospheric Temperature (Min/Max)

Atmospheric Pressure (Min/Max)

Test Report No: ERSIPL/TR/AA/147

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha. Representative of ERS (I) Pvt. Ltd. Representative of Customer.

21-22.06.2024 27.06.2024 27.06.2024 01.07.2024

As per Applicable Test Method 01 sample for each parameter

Partly Sunny 25.0 - 34.0 °C 998-1002 mbar

Sample ID, No.

 ERSIPL/AA/493 2. ERSIPL/AA/494 ERSIPL/AA/495

ERSIPL/AA/496

Locations (Core Zone)

1. Near Excavation Area

2. Near Haul Road 3. Near Dump

4. Near Workshop

TEST FINDINGS:

			Unit	Permissible	Results				
SI. No	Test Parameters	Test method		Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 493	ERSIPL/ AA/ 494	ERSIPL/ AA/ 49S	ERSIPL/ AA/ 496	
1	Suspended Particulate Matter (SPM)	ls: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	296.07	306.87	299.51	301.75	
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	133.70	135.46	127.58	134.10	
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	ug/m³	120.0	8.45	9.31	8.76	7.63	
4	Oxides of Nitrogen (NO _X)	(5 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	13.90	12.49	13.19	12.46	

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- 3. 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.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (f) Pvt. Ltd.



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ULR-TC744024000000356F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 01 July 2024

Test Report No: ERSIPL/TR/AA/148

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 Sample Received on

22-23.06.2024 27:06.2024

Analysis Started on Analysis Completed on

27.06.2024 01.07.2024

Method of Sampling Quantity of Sample

As per Applicable Test Method

Weather Condition

01 sample for each parameter Overcast

Atmospheric Temperature (Min/Max)

26.0 - 32.0 °C 997-1001 mbar

Atmospheric Pressure (Min/Max)

Sample ID. No.

Locations (Core Zone)

ERSIPL/AA/497

1. Near Drilling Area

ERSIPL/AA/498

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Res	ults
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 497	ERSIPL/ AA/ 498
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	309.11	304.70
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	ug/m³	250.0	129.36	135.59
3	Sulphur Dioxide (SO2)	15 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	8.04	8.08
4	Oxides of Nitrogen (NO _X)	i5 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	120.0	12.47	11.85

Note-

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- 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.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS [1]. Pvt. Ltd.

Teca, Mariager



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ULR-TC744024000000402F

Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 03 Aug 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring Sample Received on Analysis Started on

Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- ERSIPL/AA/537
 ERSIPL/AA/538
 ERSIPL/AA/539
- 4. ERSIPL/AA/540

Test Report No: ERSIPL/TR/AA/165

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha. Representative of ERS (I) Pvt. Ltd.

Representative of Customer

10-11.07.2024 16.07.2024 16.07.2024 26.07.2024

As per Applicable Test Method
 01 sample for each parameter

: Scattered Clouds : 28.0 - 34.0 °C : 1002-1006 mbar

Locations (Buffer Zone)

Near Village Bendrichua
 Near Village Rengalmunra
 Near Village Khuntjharia
 Near Village Kathfali

TEST FINDINGS:

				Permissible		Res	sults	
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 537	ERSIPL/ AA/ 538	ERSIPL/ AA/ 539	ERSIPL/ AA/ 540
1	Suspended Particulate Matter (SPM)	i5: 5182 (Part 4)- 1999; Reaffirmed 2019; Gravimetric Method	μg/m ³	Not Prescribed	209.29	194.52	196.56	200.08
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	74.75	76.72	75.25	73.43
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	33.90	32.45	30.74	31.09
a 4	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	8.73	8.20	8.77	7.04
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed 2022	μg/m ³	80.0	11.75	12.59	12.21	13.22

Note

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- 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.

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





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Ref. No		ormat No.: ERSIPL/FM/37 ORT (AMBIENT AIR)	Date
		Eventual and the second	Pg No: 1 of
Date: 03 Aug 2024	Tes	t Report No: ERSIPL/TR/AA/T-	165
Name and Address of the Cust		langa open cast Coal Mining, Pro Sundargarh district, Odisha.	oject of M/s NTPC Limited
Sample Collected by	: Rep	presentative of ERS (I) Pvt. Ltd.	
Sample Collected in presence of	f : Rep	presentative of Customer	
Date of Sampling/Monitoring		11.07.2024	
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	1 01	sample for each parameter	
Weather Condition	: Sca	ttered Clouds	
Atmospheric Temperature (Min/	Max) : 28.	0 - 34.0 °C	
Atmospheric Pressure (Min/Max)	: 100	2-1006 mbar	
Sample ID. No.		Locations (Buffer Zone)	
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ERSIPL/AA/537
 ERSIPL/AA/538
 ERSIPL/AA/539
 ERSIPL/AA/540

- Near Village Bendrichua
 Near Village Rengalmunra
 Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

520 290	Place of Monitoring/ Sample	Result of Parameters Analyzed Carbon Monoxide (Co (in mg/m³)	
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)	
1	ERSIPL/AA/537	<1.14	
2	ERSIPL/AA/538	<1.14	
3	ERSIPL/AA/539	<1.14	
4	ERSIPL/AA/540	<1.14	
E 6	Permissible Limit	2.0	

Note-

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- 3. This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pvt. Ltd.
- Samples (Filter Papers & Thimbies) received shall be destroyed after 01 year & Gaseous/Equid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
- 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.Mariager



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ULR-TC744024000000403F

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/166

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 Sample Received on

09-10.07.2024 16.07.2024

Analysis Started on

16.07.2024

Analysis Completed on Method of Sampling 26.07.2024 As per Applicable Test Method

Quantity of Sample

01 sample for each parameter

Weather Condition Atmospheric Temperature (Min/Max)

: Scattered Clouds : 27.0 - 34.0 °C

Atmospheric Pressure (Min/Max)

: 1001-1004 mbar

Sample ID. No.

1. ERSIPL/AA/531

2. ERSIPL/AA/532

3. ERSIPL/AA/533

ERSIPL/AA/533
 ERSIPL/AA/534

Locations (Core Zone)

1. Near Excavation Area

2. Near Haul Road

3. Near Dump

4. Near Workshop

TEST FINDINGS:

				Permissible		Res	ults	
SI. No	Test Parameters	Test method	Unit	Umit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 531	ERSIPL/ AA/ 532	ERSIPL/ AA/ 533	ERSIPL/ AA/ 534
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	304.56	296.33	301.20	296.68
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	133.61	128.70	135.52	133.39
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.84	8.71	8.01	7.64
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	14.50	13.01	12.20	12.26

Nate

- 1. The test results relate only to the items sampled and tested.
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- 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.Pattaneyak Teun.Mar.ager



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ULR-TC744024000000404F

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/167

Name and Address of the Customer :

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Sample Collected by

Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of Date of Sampling/Monitoring

Representative of Customer. 09-10.07.2024

Sample Received on Analysis Started on

16.07.2024 16.07.2024

Analysis Completed on Method of Sampling

Quantity of Sample

26.07.2024 As per Applicable Test Method 01 sample for each parameter

Weather Condition

Scattered Clouds 27.0 - 34.0 °C

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

1001-1004 mbar

Sample ID. No.

Locations (Core Zone)

1. ERSIPL/AA/535 2. ERSIPL/AA/536

1. Near Drilling Area 2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Res	sults
SI. No	Test Parameters	Test method	Unit	Umit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 535	ERSIPL/ AA/ 536
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4): 1999; Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	310.25	302.76
2	Particulate Matter (size less than 10 μm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m³	250.0	139.04	136.84
3	Sulphur Dioxide (502)	15 5187 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	9.64	9.02
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	13.90	14.10

Note-

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- 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.
- 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.Mariager



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ULR-TC744024000000405F

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/168

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

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 Sample Received on

20-21.07.2024 25.07.2024

Analysis Started on

25.07.2024

Analysis Completed on Method of Sampling

03.08.2024

Quantity of Sample

As per Applicable Test Method 01 sample for each parameter

Weather Condition

: Scattered Clouds/ Overcast

Atmospheric Temperature (Min/Max)

: 27.0 - 32.0 °C

Atmospheric Pressure (Min/Max)

: 993-996 mbar

Sample ID. No.

ERSIPL/AA/580

ERSIPL/AA/581

- 3. ERSIPL/AA/582
- 4. ERSIPL/AA/583

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- Near Village Rengalmunra
- Near Village Khuntiharia Near Village Kathfali

TEST FINDINGS:

				Permissible		Res	sults	
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 580	ERSIPL/ AA/ 581	ERSIPL/ AA/ 582	ERSIPL/ AA/ 583
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	Nat Prescribed	208.85	199.51	204.57	198.36
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	74.21	77.43	76.66	75.41
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	IS 5282 (Part 24): 2019, Gravimetric Method	μg/m ³	60.0	33.24	32.14	30.72	31.10
4	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2); 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	8.30	7.20	8.13	7.50
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	ug/m ³	80.0	13.62	11,49	13.95	11.31

Note-

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- Yotal Liability of ERS (I) Pvt. Ltd. is limited to the Invoice Amount.
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- 4. Samples (Filter Papers & Thimbies) 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.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I) Pyt. Ltd.





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Ref. No	Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)	Date
		Pg No: 1 of 1
Date: 03 Aug 2024	Test Report No: ERSIPL/TR/AA/T-168	2436AG 5245(IF4

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha. Representative of ERS (I) Pvt. Ltd.

Sample Collected by Sample Collected in presence of Representative of Customer Date of Sampling/Monitoring 20-21.07.2024

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 Scattered Clouds/ Overcast Weather Condition

Atmospheric Temperature (Min/Max) 27.0 - 32.0 °C Atmospheric Pressure (Min/Max) 993-996 mbar

Sample ID. No.

 ERSIPL/AA/580 ERSIPL/AA/581 3. ERSIPL/AA/582 4. ERSIPL/AA/583

Locations (Buffer Zone)

1. Near Village Bendrichua Near Village Rengalmunra 3. Near Village Khuntjharia Near Village Kathfali

TEST FINDINGS:

-1 -1	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/580	<1.14
2	ERSIPL/AA/581	<1.14
3	ERSIPL/AA/582	<1.14
4	ERSIPL/AA/583	<1.14
	Permissible Limit	2,0

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.
- 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.
- 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.Pattanavak Tech.Mar.ager



(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-TC744024000000406F

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/169

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

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 Sample Received on

: 19-20.07.2024 : 25.07.2024

Analysis Started on Analysis Completed on 25.07.2024 03.08.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample Weather Condition 01 sample for each parameter Partly Sunny/ Passing Clouds

Atmospheric Temperature (Min/Max)

27.0 - 35.0 °C

Atmospheric Pressure (Min/Max)

994-996 mbar

Sample ID. No.

1. ERSIPL/AA/574

Locations (Core Zone)

1. Near Excavation Area

ERSIPL/AA/575
 ERSIPL/AA/576

Near Haul Road
 Near Dump

4. ERSIPL/AA/577

4. Near Workshop

TEST FINDINGS:

				Permissible	Results			
SI. No	Test Parameters	Test method	Unit	Umit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 574	ERSIPL/ AA/ 575	ERSIPL/ AA/ 576	ERSIPL/ AA/ 577
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	298.84	302.63	293.44	304.28
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	131.42	134.50	124.30	130.02
3	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m³	120.0	8.20	9.58	7.41	8.08
4	Oxides of Nitrogen (NO _X)	fS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m³	120.0	12.17	13.80	13.41	12.65

Note-

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- 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.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I)

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager



(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-TC744024000000407F

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/170

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

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

19-20.07.2024

Sample Received on Analysis Started on

25.07.2024

Analysis Started on Analysis Completed on : 25.07.2024

Method of Sampling

03.08.2024

Quantity of Sample

: As per Applicable Test Method

Weather Condition

01 sample for each parameter
 Partly Sunny/ Passing Clouds

Atmospheric Temperature (Min/Max)

: 27.0 - 35.0 °C

Atmospheric Pressure (Min/Max)

: 994-996 mbar

Sample ID. No.

1. ERSIPL/AA/578

Locations (Core Zone)

1. Near Drilling Area

2. ERSIPL/AA/579

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Res	ults
SI. No	Test Parameters	Test method	Unit	Umit as per CYO No.4169, dtd.20.03.23	ERSIPL/ AA/ 578	ERSIPL/ AA/ 579
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	305.60	301.83
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	ug/m³	250.0	124.47	132,45
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m³	120.0	7.65	8.54
4	Oxides of Nitrogen (NO _X)	IS 5182 [Part 6]: 2006, Reaffirmed -2022	µg/m³	120.0	13.27	11.90

Note-

- . The test results relate only to the items sampled and tested.
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- 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.Patlanayak Tech.Mar.ager



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

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ULR-TC7440240000000483F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

TC-7440

Date: 31 Aug 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling

Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- 1. ERSIPL/AA/638
- 2 ERSIPL/AA/639
- 3. ERSIPL/AA/640
- 4. ERSIPL/AA/641

Test Report No: ERSIPL/TR/AA/200

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd.

Representative of Customer

10-11.08.2024

17.08.2024

17.08.2024

28.08.2024

: As per Applicable Test Method

01 sample for each parameter

Rainy/Overcast

: 26.0 - 33.0 °C

: 1002-1006 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- 2. Near Village Rengalmunra
- 3. Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

				Permissible	Results			
SI. No	Test Parameters	Test method	Unit -	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 638	ERSIPL/ AA/ 639	ERSIPL/ AA/ 640	ERSIPL/ AA/ 641
1	Suspended Particulate Matter (SPM)	15: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	Not . Prescribed	105.04	95.62	97.20	101.70
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	ug/m³	100.0	53.11	49.93	51.38	54.50
3	Particulate Matter (size less than 2.5 µm) or PM 2.5	i5 5182 (Part 24): 2019, Gravimetric Method	μg/m ³	60.0	21.89	22.73	24.76	20.70
4	Sulphur Dioxide (SO ₂)	is 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	7.04	7.83	8.44	6.70
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	80.0	10.27	10.73	11.38	9.78

Note-

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- 3. This certificate shall not be reproduced fully or in part without prior written consent of ERS (i) Pvt. Ltd.
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- 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.Mariager





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.

Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Date.....

Pg No: 1 of 1

Date: 31 Aug 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of

Date of Sampling/Monitoring Sample Received on

Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- 1. ERSIPL/AA/638
- 2. ERSIPL/AA/639
- 3. ERSIPL/AA/640
- 4. ERSIPL/AA/641

Test Report No: ERSIPL/TR/AA/T-200

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

10-11.08.2024

17.08.2024

: 17.08.2024 28.08.2024

As per Applicable Test Method 01 sample for each parameter

Rainy/Overcast

26.0 - 33.0 °C

: 1002-1006 mbar

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- 2. Near Village Rengalmunra
- 3. Near Village Khuntjharia
- 4. Near Village Kathfali

TEST FINDINGS:

ω n	Place of Monitoring/ Sample	Result of Parameters Analyzed
SI. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/638	<1.14
2	ERSIPL/AA/639	<1.14
3	ERSIPL/AA/640	<1.14
4	ERSIPL/AA/641	<1.14
	Permissible Limit	2.0

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.
- This certificate shall not be reproduced fully or in part without prior written consent of ERS (1) 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.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS (I) Pyt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager



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

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ULR-TC744024000000484F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/AA/201

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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

09-10.08.2024

Sample Received on Analysis Started on : 17.08.2024

Analysis Completed on

: 17.08.2024

Method of Sampling

: 28.08.2024

Quantity of Sample

As per Applicable Test Method 01 sample for each parameter

Weather Condition

Rainy/Overcast

Atmospheric Temperature (Min/Max)

25.0 - 28.0 °C

Atmospheric Pressure (Min/Max)

: 1004-1006 mbar

Sample ID. No.

ERSIPL/AA/632

Locations (Core Zone)

2. ERSIPL/AA/633

Near Excavation Area
 Near Haul Road

ERSIPL/AA/634

3. Near Dump

4. ERSIPL/AA/635

4. Near Workshop

TEST FINDINGS

				Permissible		Res	ults		
SI, No	Test Parameters	Test method	Unit	timit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 632	ERSIPL/ AA/ 633	ERSIPL/ AA/ 634	ERSIPL/ AA/ 635	
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m³	500.0	145.73	152.20	157.77	151.69	
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	82.70	85.47	87.50	84.76	
3	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	7.88	7.15	8.35	7.14	
. 4	Oxides of Nitrogen (NO _X)	15 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	10.69	10.45	11.80	11.19	

Note-

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- 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 Tecn, Mariager



(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-TC744024000000485F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

TC-7440

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/AA/202

Name and Address of the Customer :

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

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

10-11.08.2024

Sample Received on Analysis Started on 17.08.2024

Analysis Completed on

: 17.08.2024

Method of Sampling

28.08.2024

Quantity of Sample

As per Applicable Test Method 01 sample for each parameter

Weather Condition
Atmospheric Temperature (Min/Max)

: Rainy/Overcast : 26.0 - 33.0 °C

Atmospheric Pressure (Min/Max)

: 1002-1006 mbar

Sample ID. No.

1. ERSIPL/AA/636

Locations (Core Zone)

1. Near Drilling Area

2. ERSIPL/AA/637

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Res	ults
SI. No	Test Parameters	Test method	Unit	birnit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 636	ERSIPL/ AA/ 637
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	157.59	148.81
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	91.28	82.56
3	Sulphur Dioxide (SO2)	15 S182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	7.77	6.45
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	10.21	12.74

Note-

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- 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.
- 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 Tecn.Mariager





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-TC744024000000486F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 31 Aug 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Test Report No: ERSIPL/TR/AA/203

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha. Representative of ERS (I) Pvt. Ltd.

Representative of Customer

18-19.08.2024 27.08.2024 27.08.2024 30.08.2024

As per Applicable Test Method 01 sample for each parameter

Overcast 24.0 - 32.0 °C : 1004-1006 mbar

Sample ID. No.

1. ERSIPL/AA/656 2. ERSIPL/AA/657

ERSIPL/AA/658

ERSIPL/AA/659

Locations (Buffer Zone)

1. Near Village Bendrichua

2. Near Village Rengalmunra 3. Near Village Khuntiharia

4. Near Village Kathfali

TEST FINDINGS:

				Permissible		Res	sults	
51. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 656	ERSIPL/ AA/ 657	ERSIPL/ AA/ 658	ERSIPL/ AA/ 659
ï	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m³	Not Prescribed	109.32	106.04	107.46	113.28
2	Particulate Matter (size less than 10 µm) or PM 10	IS S182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	µg/m³	100.0	60.10	58.86	62.62	64.70
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	25.95	28.26	26.28	27.97
4	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	8.70	7.84	8.25	7.48
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	µg/m³	80.0	11.89	11.45	12.27	12.33
				A.				

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) Pyt. Ltd.
- Samples (Filter Papers & Thimbles) received shall be destroyed after 01 year & Gaseous/Rquid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
- This report shall not used in any advertising media or as evidence in the court of law without prior written consent of ERS [1]

(Authorized Signatory) S.P.Pattanayak

Tecn.Mar.ager

END OF TEST REPORT



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.

Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Date.....

Pg No: 1 of 1

Date: 31 Aug 2024

Name and Address of the Customer

Sample Collected by Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample

Weather Condition Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

 ERSIPL/AA/656 ERSIPL/AA/657 3. ERSIPL/AA/658 4. ERSIPL/AA/659

Test Report No: ERSIPL/TR/AA/T-203

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha. : Representative of ERS (I) Pvt. Ltd. : Representative of Customer

: 18-19.08.2024 27.08.2024 : 27.08.2024 : 30.08.2024

As per Applicable Test Method 01 sample for each parameter

: 24.0 - 32.0 °C : 1004-1006 mbar

Locations (Buffer Zone)

4. Near Village Kathfali

1. Near Village Bendrichua 2. Near Village Rengalmunra 3. Near Village Khuntjharia

TEST FINDINGS:

	Place of Monitoring/ Sample	Result of Parameters Analyzed
Sl. No	ID. No	Carbon Monoxide (CO) (in mg/m³)
1	ERSIPL/AA/656	<1.14
2	ERSIPL/AA/657	<1.14
3	ERSIPL/AA/658	<1.14
4	ERSIPL/AA/659	<1.14
	Permissible Limit	2.0

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. 2.
- This certificate shall not be reproduced fully or in part without prior written consent of ERS (!) Pvt. Ltd.
- Samples (Filter Papers & Thimbles) received shall be destroyed after £1 year & Gaseous/liquid samples received shall be destroyed after 07 days from the date of issue of the test report, unless otherwise specified.
- 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.Mariager



(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-TC744024000000487F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

TC-7440

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/AA/204

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Sample Collected by

Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of Date of Sampling/Monitoring

Representative of Customer.

Sample Received on

17-18.08.2024 27.08.2024

Analysis Started on

27.08.2024

Analysis Completed on

: 30.08.2024

Method of Sampling

As per Applicable Test Method

Quantity of Sample

: 01 sample for each parameter

Weather Condition

: Overcast

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

: 27.0 - 34.0°C : 1002-1005 mbar

Sample ID. No.

ERSIPL/AA/650

ERSIPL/AA/651

- 3. ERSIPL/AA/652
- 4. ERSIPL/AA/653

- Locations (Core Zone) 1. Near Excavation Area
- 2. Near Haul Road
- 3. Near Dump
- 4. Near Workshop

TEST FINDINGS:

			Unit	Permissible Limit as per CTO No.4189, dtd.20.03.23	Results				
SI. No	Test Parameters	Test method			ERSIPL/ AA/ 650	ERSIPL/ AA/ 651	ERSIPL/ AA/ 652	ERSIPL/ AA/ 653	
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4): 1999, Reaffirmed 2019, Gravimetric Method	µg/m ³	500.0	179.06	172.68	179.31	168.29	
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	97.89	98.25	95.52	100.73	
3	Sulphur Dioxide (SO ₂)	15 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	120.0	8.99	8.18	7.74	8.91	
4	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	12.21	11.92	12.52	13.03	

Note:

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



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

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ULR-TC744024000000488F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 31 Aug 2024

Test Report No: ERSIPL/TR/AA/205

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

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 Sample Received on : 17-18.08.2024 : 27.08.2024

Analysis Started on

27.08.2024

Analysis Completed on

30.08.2024

Method of Sampling Quantity of Sample As per Applicable Test Method

01 sample for each parameter

Weather Condition

Overcast

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

: 27.0 + 34.0 °C : 1002-1005 mbar

Sample ID. No.

Locations (Core Zone)

ERSIPL/AA/654

1. Near Drilling Area

2. ERSIPL/AA/655

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Results	
SI. No	Test Parameters	Test method	Unit	Limit us per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 6S4	ERSIPL/ AA/ 655
ī	Suspended Particulate Matter (SPM)	is: S182 (Part 4): 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	500.0	190.60	172.58
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	102.68	97.33
3	Sulphur Dioxide (SO2)	is 5182 (Part 3): 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	120.0	8.66	7.32
4	Oxides of Nitrogen (NO _X)	is 5182 (Part 6): 2006, Reaffirmed -2022	µg/m ³	120.0	13.71	11.16

Note-

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 Pvt. Ltd.

(Authorized Signistory) S.P.Pattanayak Tech.Mariager



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

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ULR-TC744024000000536F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 28 Sept 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- 2 ERSIPL/AA/718
- 3. ERSIPL/AA/719
- ERSIPL/AA/717
- 4. ERSIPL/AA/720

Test Report No: ERSIPL/TR/AA/221

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd. Representative of Customer

14-15.09.2024 18.09.2024

18.09.2024 26.09.2024

As per Applicable Test Method 01 sample for each parameter

Overcast 25.0 - 32.0 °C : 998-1003 mbar

Locations (Buffer Zone)

1. Near Village Bendrichua

2. Near Village Rengalmunra

3. Near Village Khuntiharia

4. Near Village Kathfali

TEST FINDINGS:

				Permissible		Res	sults	
SI. No	Test Parameters	Test method	Unit	Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 717	ERSIPL/ AA/ 718	ERSIPL/ AA/ 719	ERSIPL/ AA/ 720
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ³	Not Prescribed	159.50	166.45	155.19	161.40
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	69.68	73.44	71.90	76.57
3	Particulate Matter (size less than 2,5 µm) or PM 2,5	i5 5182 (Part 24); 2019, Gravimetric Method	μg/m ³	60.0	30.84	31.82	29.41	28.94
4	Sulphur Dioxide (SO2)	IS 5182 (Part 2): 2001, Reaffirmed-2022, Improved West & Gaeke Method	μg/m ³	80.0	7.60	7.58	8.78	7.60
5	Oxides of Nitrogen (NO _X)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	80.0	10.49	11.66	11.31	10.83

Note

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(Authorized Signatory) S.P.Paitenayak

Tecn.Mar.ager



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

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ULR-TC744024000000537F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/AA/222

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited 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 Sample Received on Analysis Started on Analysis Completed on : 13-14.09.2024 : 18.09.2024 : 18.09.2024

Method of Sampling Quantity of Sample : 26.09.2024 : As per Applicable Test Method

Weather Condition Atmospheric Temperature (Min/Max) 01 sample for each parameter Overcast

tax) :

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max) 25.0 - 31.0 °C 1000-1005 mbar

Sample ID. No.

1. ERSIPL/AA/711

2. ERSIPL/AA/712

1000 2000

Locations (Core Zone)

1. Near Excavation Area

3. ERSIPL/AA/713

Near Haul Road
 Near Dump

4. ERSIPL/AA/714

4. Near Workshop

TEST FINDINGS:

		Test method	Unit	Permissible Limit as per CTO No. 4169, dtd. 20.01.23	Results				
SI. No	Test Parameters				ERSIPL/ AA/ 711	ERSIPL/ AA/ 712	ERSIPL/ AA/ 713	ERSIPL/ AA/ 714	
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	μg/m ¹	500.0	200,58	213.68	202.25	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	250,0	109.44	110.13	103.42	111.29	
3	Sulphur Dioxide (502)	S 5182 (Part 2): 2001, Reaffirmed 2022, Improved West & Gacke Method	ug/m³	120.0	8.14	7.50	8.50	8.66	
4	Oxides of Nitrogen (NO _x)	i5 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	10.64	12.11	10.55	11.22	

Note-

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 Pvt. Ltd.

(Authorized Signatory) S.P.Pattanayak Tecn.Mar.ager



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ULR-TC744024000000538F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/AA/223

Name and Address of the Customer :

Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Sample Collected by

Representative of ERS (I) Pvt. Ltd.

Sample Collected in presence of

Representative of Customer. : 13-14.09.2024

Date of Sampling/Monitoring Sample Received on Analysis Started on

: 18.09.2024 : 18.09.2024

Analysis Completed on Method of Sampling

Quantity of Sample

: 26.09.2024 : As per Applicable Test Method : 01 sample for each parameter

Weather Condition Atmospheric Temperature (Min/Max) : 25.0 - 31.0 °C

: Overcast

Atmospheric Pressure (Min/Max)

: 1000-1005 mbar

Sample ID. No.

Locations (Core Zone)

1. ERSIPL/AA/715

1. Near Orilling Area

2. ERSIPL/AA/716

2. Near Coal Handling Plant

TEST FINDINGS:

				Parmissible	Res	ults
SI. No	Test Parameters	Test method	Unit	Umit as per CTO No.4169, ctut 20.03.23	ERSIPL/ AA/ 715	ERSIPL/ AA/ 716
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1999, Reaffirmed 2019, Gravimetric Method	ug/m ³	500.0	231.01	228.47
2	Particulate Matter (size less than 10 µm) or PM 10	IS 5182 (Part 29): 2006, Reaffirmed-2022, Gravimetric Method	μg/m³	250.0	123.41	118.48
3	Sulphur Dioxide (SO ₂)	IS \$182 (Part 2): 2001, Reaffirmed 2022, Improved West & Gaeke Method	sa/m³	120.0	8.94	8.10
4	Oxides of Nitrogen (NO _x)	(S 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	12.03	13.26

Note-

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(Authorized Signatory) S.P.Pattanayak Teun, Mariages





Environmental Research and Services (India) Pvt. Ltd.

(An ISO 9001 2015 Certified Company)

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Ref. N	0	************************
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Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Date.....

Pg No: 1 of 1

Date: 28 Sept 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Sample ID. No.

- 1 ERSIPL/AA/711
- 2 ERSIP: /AA/712
- 3 ERSIPL/AA/713
- 4: ERSIPL/AA/714
- 5 ERSIPL/AA/715
- 6 ERSIPL/AA/716
- 7. ERSIPL/AA/717
- 8. FRSIPL/AA/718
- 9. ERSIPL/AA/719 10 ERSIPL/AA/720
- TEST FINDINGS:

Test Report No: ERSIPL/TR/AA/T:221-223

Dulacya open cast Coal Mining, Project of M/s N1PC Limited in

Sundargarh district, Odisha.

Representative of ERS (I) Pvt. Ltd.

Representative of Customer.

13-15-09-2024

18.09.2024

: 18,09,2024

26.09.2024

: As per Applicable Test Method

01 sample for each parameter

Overcast

25.0 - 32.0 °C

998-1005 mbar

Locations (Core Zone/Buffer Zone)

- 1. Near Excavation Area
- 2. Mear Hauf Road
- * 3. Near Durnp
- 4. Near Workshop
- 5. Near Drilling Area
- 6. Near Coal Handling Plant
- 2. Near Village Bendrichua.
- 8 Near Village Rengalmunes
- 9. Near Village Khunt harva
- 10. Near Village Kathfalt

		Resu	t of Param	eters Analy	zed	
Place of Monitoring	Mercury (Hg) (in µg/m³)	Arsenic (As) (ng/m³)	Nickel (Ni) (ng/m³)	Cadmium (Cd) (in µg/m³)	Chromium (Cr) (in µg/m²)	Carbon Monoxide (CO) (in mg/m³)
CR5(PL/AA/71)	ND CIN	NO	N.D.	NO:	ND	<1.10
ERS/PL/AA/712	ND	NET	NO	NO	NO	<1.14
ERSIPL/AA/713	ND	NO	ND:	NO:	ND	×1.14
ERSIPL/AA/714	ND	NO	NO:	NO	ND	<1.14
ERSIPL/AA/715	ND	NO	NO	ND:	ND	<1.74
ERS(PL/AA/716	ND	NO	ND	ND.	ND	<1.14
ERSIPL/AA/717	ND :	ND:	NO	ND	ND	×1.24
ERSIPL/AA/718	NO	ND	ND:	NO.	ND	<1.16
ERSIPL/AA/719	ND	NO	NO	ND:	ND	<1.36
ERSIPL/AA/720	ND	ND	NO	NO-	NO	<3.14
Permissible Limit as per CTO No.4169, dtd.20.03.23	Not Prescribed	06	20.0	Not Pro	scribed	2.0

Note

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- Samples (Filter Papers & Thorstons) received shalf he instruyed after O1 year & General African Angeles received shalf be destroyed after O1 days from the date of cisco of the test report, unless otherwise specified.

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(Authorized Signatory) S.P.Pattanavak Tech.Mar.ager



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ULR-TC744024000000539F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/AA/224

Name and Address of the Customer

Dulanga open cast Coal Mining, Project of M/s NTPC Limited in Sundargarh district, Odisha.

Sample Collected by Sample Collected in presence of

Representative of ERS (I) Pvt. Ltd. Representative of Customer

Date of Sampling/Monitoring Sample Received on

: 18-19.09.2024 : 23.09.2024 : 23.09.2024

Analysis Started on Analysis Completed on

: 28.09.2024

Method of Sampling Quantity of Sample Weather Condition

: As per Applicable Test Method 01 sample for each parameter

Atmospheric Temperature (Min/Max)

Overcast/Rainy 25.0 - 28.0 °C

Atmospheric Pressure (Min/Max)

1003-1006 mbar

Sample ID. No.

- ERSIPL/AA/738
- 2. ERSIPL/AA//39
- 3. ERSIPL/AA/740
- 4. ERSIPL/AA/741

Locations (Buffer Zone)

- 1. Near Village Bendrichua
- Near Village Rengalmunra
- 3. Near Village Khuntiharia
- 4. Near Village Kathfali

TEST FINDINGS:

		Test method	Unit	Permissible		Res	sults	
SI. No	Test Parameters			Limit as per CTO No.4169, dtd.20.03.23	ERSIPL/ AA/ 738	ERSIPL/ AA/ 739	ERSIPL/ AA/ 740	ERSIPL/ AA/ 741
1	Suspended Particulate Matter (SPM)	IS: 5182 (Part 4)- 1599. Reaffirmed 2019, Gravimetric Method	μg/m ³	Not Prescribed	108.53	100.83	98.46	108.71
2	Particulate Motter (size less than 10 µm) or PM 10	is 5182 (Part 23): 2006, Reaffirmed-2022, Gravimetric Method	μg/m ³	100.0	52.95	51.57	50.54	55.37
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	24.51	22.06	23.24	23.85
4	Sulphur Dioxide (SO ₂)	i5 5182 [Part 2]: 2001, Reaffirmed-2022, Improved West & Gaeke Method	µg/m ³	80.0	6.41	7.45	6.60	7.35
5	Oxides of Nitrogen (NO _X)	i5 5182 [Part 6]: 2006, Reaffirmed -2022	μg/m ³	80.0	10.29	11.47	11.81	10.60

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Tecn.Manager



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ULR-TC744024000000540F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/AA/225

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

in Sundargarh district, Odisha.

Sample Collected by

Sample Collected in presence of

Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on

Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) : Atmospheric Pressure (Min/Max)

Representative of ERS (I) Pvt. Ltd.

Representative of Customer. 17-18.09.2024

23.09.2024 : 23.09.2024 : 28.09.2024

: As per Applicable Test Method 01 sample for each parameter

Cloudy/Rainy 25.0 - 26.0 °C : 1002-1004 mbar

Sample ID. No.

1. ERSIPL/AA/732

2. ERSIPL/AA/733 3. ERSIPL/AA/734

4. ERSIPL/AA/735

Locations (Core Zone)

1. Near Excavation Area

2. Near Haul Road

3. Near Dump

4. Near Workshop

TEST FINDINGS:

			Unit	Pormissible Limit as per CTO No.4169, doi: 20.03.23		Res	ults	
SI. No	Test Parameters	Test method			ERSIPL/ AA/ 732	ERSIPL/ AA/ 733	ERSIPL/ AA/ 734	ERSIPL/ AA/ 735
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4) 1999, Realtirmed 2019, Gravimetric Method	μg/m ³	500.0	166.29	165,10	162.27	161.43
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	87.95	82.59	86.70	85.50
3	Sulphur Dioxide (SO ₂)	is 5182 (Part 2): 2001, Reaffirmed 2022, Improved West & Gaeke Method	μg/m³	120.0	7.57	6.81	8.25	7.45
4	Oxides of Nitrogen (NO _x)	is 5182 (Part 6): 2006. Reaffirmed -2022	μγι/m³	120.0	11.62	10.87	12.16	11.33

Note-

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(Authorized Signatory) S.P.Pattanavak Teun, Mariager



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ULR-TC744024000000541F

Test Report Format No.: ERSIPL/FM/37

TEST REPORT (AMBIENT AIR)

Pg No: 1 of 1

Date: 28 Sept 2024

Test Report No: ERSIPL/TR/AA/226

Name and Address of the Customer

: Dulanga open cast Coal Mining, Project of M/s NTPC Limited

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 Sample Received on

: 17-18.09.2024 : 23.09.2024

Analysis Started on Analysis Completed on

: 23.09.2024 : 28.09.2024

Method of Sampling Quantity of Sample

: As per Applicable Test Method : 01 sample for each parameter

Weather Condition Atmospheric Temperature (Min/Max) : 25.0 - 26.0 °C

Atmospheric Pressure (Min/Max)

: Cloudy/Rainy

: 1002-1004 mbar

Sample ID. No.

Locations (Core Zone)

ERSIPL/AA/736

1. Near Drilling Area

2. ERSIPL/AA/737

2. Near Coal Handling Plant

TEST FINDINGS:

				Permissible	Results	
SI. No	Test Parameters	Test method	Unit	timit es per C7O No.4169, dtd.20.03.23	ERSIPL/ AA/ 736	ERSIPL/ AA/ 737
1	Suspended Particulate Matter (SPM)	is: 5182 (Part 4) 1999, Reaffirmed 2019, Gravimetric Method	ug/m³	500.0	154.41	157.73
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	79.10	80.86
3	Sulphur Dioxide (SO2)	iS 5182 (Part 2): 2001, Reaffirmed 2022, Improved West & Gacke Method	μg/m ³	120.0	7.25	7.18
4	Oxides of Nitrogen (NO _x)	IS 5182 (Part 6): 2006, Reaffirmed -2022	μg/m ³	120.0	11.50	10.83

Note

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- This certificate shall not be reproduced fully or in part without prior written consent of ERS (I) Pvs. 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.
- 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.

Teun, Mariager





Environmental Research and Services (India) Dvt. Ltd.

(An i50 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

Re	f.	No.	***************************************
	,		CALLET AND ADDRESS OF THE PARTY

Test Report Format No.: ERSIPL/FM/37 TEST REPORT (AMBIENT AIR)

Date

Pg No: 1 of 1

Date: 28 Sept 2024

Name and Address of the Customer

Sample Collected by

Sample Collected in presence of Date of Sampling/Monitoring

Sample Received on Analysis Started on Analysis Completed on Method of Sampling Quantity of Sample Weather Condition

Atmospheric Temperature (Min/Max) Atmospheric Pressure (Min/Max)

Test Report No: ERSIPL/TR/AA/T:224-226

Sundargarh district, Odisha.

Representative of Customer. 17-19:09:2024

28,09,2024

As per Applicable Test Method 01 sample for each parameter

Cloudy/Rainy 25.0 28.0 ℃

Sample 1D. No.

- I. ERSIPL/AA/732
- 2. ERSIPL/AA/733
- 3. ERSIPI/AA/734.
- 4. FRSIPI/AA/735
- 5 ERSIPL/AA/736
- E ERSIPL/AA/737
- 7. ERSIPL/AA/738
- 8. ERSIPL/AA/739 9. ERSIPL/AA/740
- 10 ERSIPL/AA/741

Dulanga open cast Coul Mining, Project of M/s NTPC Limited in

Representative of ERS (I) Pvt. Etd.

23.09.2024 23.09.2024

1002-1006 mbar

Locations (Core Zone/Buffer Zone)

- Near Excavation Area
- Near Hau) Boad
- 3. Near Dump
- 4. Near Workshop
- 5. Near Drilling Area
- 6. Near Coal Handling Plant
- 7. Near Village Bendrichua
- 8 Near Village Reng drounen 9. Neur Village Khuntiharia
- 10. Near Village Kathfali

TEST FINDINGS:

	Result of Parameters Analyzed						
Place of Monitoring	Mercury (Hg) (in µg/m³)	Arsenic (As) (ng/m ³)	Nickel (Ni) (ng/m ¹)	Cadmium (Cd) (in µg/m ¹)	(Cr)	Carbon Monoxide (CO) (in mg/m²)	
ERSIPL/AA/732	ND	ND.	NO.	ND	ND	43.14	
ERSIPL/AA/733	NO	ND	NID	ND	ND	<1.14	
ERSIPL/AA/734	NO.	ND	NO	ND	ND	<1.14	
ERSIPL/AA/735	NO	ND	ND	ND	NO	<1.14	
ERSIPL/AA/736	NO.	ND.	ND	ND	ND	<1.14	
ER5IPL/AA/737	ND	NO	ND	NO	NO	<1.14	
ERSIPL/AA/738	ND	ND	ND	ND	NO	<1.14	
ERSIPI /AA/739	ND	ND	ND	NO	ND	⊲1.14	
ERSIPL/AA/740	ND	NO.	ND:	NO	ND	41.14	
ERSIPL/AA/741	ND	NO	ND	ND	ND	<1.14	
Permissible Limit as per CTO No.4269, ded.20.03.23	Not Prescribed	06	20.0	100401000	scribed	2.0	

Note

The test result insiste only unif-pritems sampled one feature.

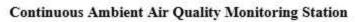
Total ciubility of ERS (i) Pvr. 188, is limited to the Invoice Amount.

This certificate shall not be reproduced fully or to part without prior written comment of ERS ES Piet £85.

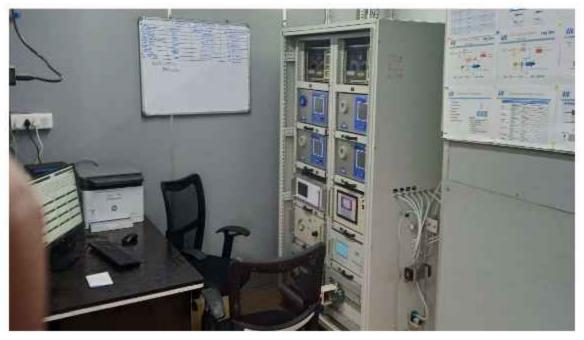
Samples (Filter Rapers & Thirottles) received shall be destroyed after 0.1 year & Gaussia/Equid samples received year & destroyed after 0.1 days from the date of node of the text report, unless otherwise iperated. this report shall not used in any infrortising media or us evidence in the court of law without prior written respect to

(Authorized Signatory S.P. Pattanava

Teun, Mariager







ZERO DISCHARGE EFFLUENT TREATMENT PLANT OF 50 KLD



Flow Chart of ETP



Clarifier



Washing Platform



Filter Feed Tank



Activated Charcoal Filter(ACF)

Annexure - XXVIII

Environm	Environment Expenditure at NTPC Dulanga (In Lakh INR)						
Expenditure Head	2018-19			2021-22			
Dump Slope Stabilisation	170.71	221.77	16.49	270.69	546.66	248.39	1474.71
Dust Supression	12.36	33.39	61.24	63.44	86.48	78.37	335.28
Environment Monitoring	12.07	16.66	29.3	134.95	27.05	64.48	284.51
Env Staff Salary	1.35	5.72	7	10.17	10.17	29.07	63.48
Plantation+ETP+Purifier	5.16	18.9	5.84	5.29	32.11	39.80	107.1
Safety Zone & Protective measures			47.04				47.04
Awareness			0.12				0.12
Study on Fly ash utilisation	()		30.08	9			30.08
Pond Construction			2				2
	201.65	296.44	199.11	484.54	702.47	460.11	2344.32

୍ୟାଇଟର ଏହି ଥାଉଥିଲେ ଏକ ମହାଳା व्यवसारक कार्वेचका राजन वाला වර්ජ දෙස්තා දෙවැනු ම්බන් ଖଣ୍ଡାପ୍ର । ଏହି ବିଜଣ ପଦଶାତ ଜନା ତାଙ୍କ ପ୍ରତିଶାରେ ସେ ୨ଂ ଏହା ଶାସର ଗୋଷାଙ୍କ କତ୍ରାଷ ରୀ ସାହାତରୁ ପ୍ରକାଶ ସେ, ଗିଉପ ରୋଗୁର ଜାମିକ ମହିଛି ।

କୃତୀଛାତ୍ରୀ ଚିନ୍ଦୁୟୀ ରଣା

ଜ.ପ୍ର. ବିଦ୍ୟବସରେ ବୃହାଣ ଶ୍ରେଣାର

ହାତ୍ର ଜିଲ୍ଲା ଭଣା ୨୦୧୩

ଶିଖାକଷିରେ କୃତୀୟ ଶ୍ରେଣୀ କୃତି

ସଦାଞ୍ଚାରେ ନେଥିବ୍ ବମ୍ ସବହିଁ ବୃଦ୍ଧି

ପାରବାରେ ସାଳପୁର ଶିକ୍ଷ ଚିଲ୍ଲରେ

ବିତାୟ ଫ୍ରାନ ଅଧିକାର କରିଛନ୍ତି । ସେ

ଜୁନି ରହି ଜଣ ଓ ମଧ୍ୟ କରୁ କଥାବର

ଆଧ୍ୟର ଶ୍ରହ

ଜିଲ୍ଲ-୧ ଅଧନୟ

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ଚୋରି ଅଭିଯୁକ୍ତ ଗିରଫ

QING!, 910 (6.Q.)-QQQ ଦେଇପଡ଼ିଶ୍ୱତ ହେ, ହେ, ଏସଫିଏକ ଜଳଶାନରେ ଗତ ୩୧୬ ଗୁଟ ଦେଖି ହୋଇଥିଲା । ହୋଇଁ ଅଭିଲୋବର ଗୋହିନପୁର ସୂହିର ରହିତ୍ର ପିଙ୍ଗକ୍ ଜଗଣଡ଼ା ପ୍ରମୀରୁ ଆତି ବିରଫ ବର୍କ କୋଟ ତାଳାଶ ବର୍ଷିତ୍ୟ ବଣାସାଳକ । ସହଯୋଖ ଫାଡି ପୂର୍ତିଷ ଏକ ମାନଳା ଗୁକ୍ କରି ଜବଳ ଜନାଇଥିଲେ ।

କୃତୀଛାତ୍ରୀଆଦ୍ୟାଶା ଜେନା

ଆସ୍ୱାଣା ହେନା ଓ ୦୧୩ ଶିଷା

ବର୍ଷରେ ତୃତୀତ ହେଶା ମୋଧାବୃଦ୍ଧି

ପରୀୟରେ ବରୀ କ୍ରବରେ ଜ୍ୱରୀୟ ପ୍ରାମ

ହାଷ୍କ ଜଣି ବୃଷି ପାଇବାକ୍

ପ୍ରେମ୍ପର୍ନିଟ୍ରେଡିଟ ହୋଇବହି । ସେ ବଳା

ପ୍ରମତ ଶ୍ରୀ ପ୍ରଭାତ ପୂମ୍ବର ହେନା ବ

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ବିଦ୍ୟାମନ୍ଦିରର

ହାହା ସ୍ଥୀ

एनरीपीसी NTPC

NTPC Limited

THE SAMAJA (ROLD WELLA) & 3-14

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DULANGA COAL MINING PROJECT NOTICE

To a to enterior all concerned that Enacopyration Cleaterior has been exceeded to Delarge God Micros Project (TMTRA) in the Way Gostlette. Doubt: - Guidespart, Others by the Mirably of Environment and Forests on CSP Abrurs, 1914. The copy of the desputos tellar is auditable with the Occasion State Copyration tellar in auditable with the Occasion State Copyrate tellar in auditable. website of the Abresby of Environment and Forests of http://www.ne.st

AGM (NO) NYPC Livered, Outsings Cost Mixing Project 651GS, Masser Road, Surdanger, PN -77001, Octoba

Power of India

STEEL AUTHORITY OF INDIA LIMITED RAW MATERIALS DIVISION

Industry House, 10, Cemec Street, Knillista-769 017 bealed lenders are invited for supply and Batallanon of School Fundance at

Bolans One Minors, P.O. Bolans Discs Keon/has/Odisha-758051

Tender ref : RMD/C/MM/Copes/IRCs_0211 dated 06.03.2014

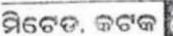
Last dute of sale of Tendor Documents: 27.03.2014

Last data and time of submission of Tenders: upto 1100 hours on 26.03.2014 Issuing Authority: Deputy General Manager (Materials Management)

For details and diverticating places what SAI, we below many as frenders as in-flectional Office house blowns, and Road, New Owin 110 0010

There's a little bit of SAIL in everybody's life

ପଥ୍ୟତ (ଜଟଫଟ ଅପ । ଜିନ୍ତୁ ନ୍ୟର ତିହ୍ୟାନୟର ଶିଷଦ ଶିଷ୍ଠରିତ୍ୱା ଓ ତାହର ପ୍ରଥେବ ବିଷ୍କପ୍ରିପ୍ତ ମାନା ଅପାତ ଅନ୍ଦର ଜନ୍ମିତ



200 200 2000 POI

ଟ ଦ୍ୱାରା ପ୍ରଦଲ ନା ୧.୫୮୦ ୧୮୬ ୦ ୧୪ର ନିର୍ଦ୍ଦେଶକୁ ଖୁଲାପ କରିଥଛନ୍ତି , ନିମ୍ବ ମୋଇତେସର ଆକ ଜିତନକୁଦସନ ଅଫ ଫାଇନାନୁଆଇ ଆବେଟସ ଆକ ଫା ଇବରେଷ (ଏମଫୋସିଲେକ) କଳ ୨୦୦୬ର ନିଉମ -୯ ଅନୁସାରେ ହୋଟିଲେକ ନିମ୍ବପ୍ରବଳ ରଣପ୍ରହୀତା / କଳକଦ୍ୱାତା / ଜାମିନ ବାଲ କ ଠାକ୍ ନୁଦ୍ରିଲେ" ଏକସାଧାରଣରେ ବିକ୍ରଣ କଳିତା ନିମନେ ଆବେଦନ ଆହାନି

1/ 6556(6)	(68168) 8.086.684	(62/68) GHAA AM		
ଚତ୍ର ସହର, ଶହସିକ 1.9, ସାହିଶ ଦେଉଁକୁ	7,€0,00,000,00	ee,00,000.00		
ୁଟ୍ଟଟ୍ଟ, ଅନିକ ମୃତି ଜୁସିମାକ୍ଟ, ସମିକ ପ୍ରଦ ନାକ୍ତ, ମେହତ ବର୍ଷଣା ଗୌଳୀ ପଟ୍ଟଟ୍ଟମ୍ବର ଓଡ଼ିକ୍ଟ ବ୍ୟେକ୍ଟ, ମଧ୍ୟ ଓଡ଼ିକ୍ଟମ୍ବର କେଠା ।	ରଣ ପରିନାଣ (ଫାର୧.୧୨.୨୦୧୩ ରିଖ ପର୍ଯ୍ୟକ) ବ୍ୟୁଣ୍ଡ (ଜମ୍ମୁଣ୍ଡ (ଜନ			
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an garaco हा ६० ° वे ' के अंति के अहा कि अंति है। इस प्राप्त के अहा स्थापन ହାଁତ ହୋ-ଅପରେତିର ବ୍ୟବ ଛି। , ଜଟତଟ ଜନୀତେ ଅମାନତ ହମାନ ଜିମାକ ହୁମ୍ମ କରେ ଅ ।,ଜନତ-୧ଙ୍କ ମନ୍ତମ ହୁଁ , ୭ ୦ . ବ.କ୍ଷି. ୭ ୦ ୧ ୪ ଲି.୭ ଦୁମ ବାରତ ବରିବେ । ଆମନତ କ୍ରମ ମ, ଜନତ- ୧୯୪ ପାରମ ହି. ୨୦. ଓ ମଧ୍ୟ ୨୬. ଓ ୧୯ ପର ଅଟେ ହେଉଟି । ଅଧାରଣ ହାଛିତ୍ର ଆଲ୍ଲିଆ ଚିତ୍ରର ଅତ୍ୟାର ବାଳ ହାଉଁ / ହେଉଁ ଆହୁ ଅଟେ ଚିତ୍ରର ଅନ୍ତର । ୫. ଅନ୍ତମପ୍ରାପ ସର୍ଗର ଚିତ୍ରର ଆତ୍ୟାର ବର୍ଷ ହେଉଟି । ୬. ଭୌଶର ଜାନୁଣ ଓ ବର୍ଷର ଅନ୍ତର ହେଉଟି । ଆତ୍ର ଅଧ୍ୟର ପ୍ରତି ହାଣୀ ବହିତ୍ର ମହିଁ । ୬. ଭୌଶର ଜାନୁଣ ଓ ବର୍ଷର ଅନ୍ତର ହେଉଟି ଅନ୍ତର ଅନ୍ତର ହେଉଟି । ଆତ୍ର ଅଧ୍ୟର ନିର୍ଦ୍ଦିନ ସମ୍ପର ୧୯. ଓଡ଼ିଆରେ ଜ୍ୟନ୍ତର ପୂର୍ବର ଅନ୍ତର ହେଉଟି । ଅନ୍ତର ଅନ୍ତର ଜଣି । ୧୯. ଜିଲ୍ଲେମ୍ବର ଅନ୍ତର ଜଣି । ୧୯. ଜଣି ।

(ରାଗ)/ ଜାଣିଟ ବାଳକୁ ହଣାତ ବିଆୟାକ୍ଷର ହେ, ସେମାହେ ଉଥର ବହେଲା ନାଞ୍ଚିତ୍ ବିଧାର କ୍ରିଗର ଏବଂ କାମୁହିଳ ହାରେ ତାଣୀ ଅହିଲେ ।

ବା/ - ଜମତାସ୍ତାସ ଅଧ୍ୟବାବୀ ଦି ଅର୍ଦ୍ଦାନ ଶଧା-ଅପରେଥିଲା ଦ୍ୟାକ୍ ମିଧ, କଟକ

GOVERNMENT OF INDIA DEPARTMENT OF ATOMIC ENERGY. HEAVY WATER PLANT, TALCHER

e-TENDER NOTICE NO.: HWP/TAL/CIVIL/2014/01

Online tenders are invited through e-tendering mode by the Gerwall Manager, Heavy Water Plant, Telichier, P.O. Vikrampur, Diet: Angul (Odeha) on behalf of the President of India in two bid, from eligible contractors for the work and details given below-

NIT No: HWP/TAL/ICIVIL/2014/01, Name of the work HOUSEKEEPING OF BUILDINGS AND INDUSTRIAL AREAS AT HIMP TALCHER FOR THE YEAR 2014-15. Estimated Cost ₹11,22,503.00. Earnest Money ₹22,456.00, Period of completion 12(TWELVE) Months, Last time and date of submission. of bid 24,03,2814 (14,38 Hrs.). The bid forms and other details can be obtained from the website www.tendurwizaed.com/DAE

NEELACHAL ISPAT NIGAM LIMITED

TENDER NOTICE

TENDER NOTICE NO.: NINLICM/RS/SULPHURIC ACID/NIT-896 DTD: 06.03.2014

Name of the works : Supply of 2200 MT of Subpuric Add (195%) concentrated) as partification 1977 Ato NWL Plant Size. EMD amount to be deposited : Rs. 1,00,000-

TENDER NOTICE NO.: NINLICM/RE/CAUSTIC SODA LYEINIT-367 DTD: 06:03:2014

Name of this works : Stupply of 200 MT (sh 100% strangth besis) of Countic Soits Liye (497), Fluidit) as per IS- 252/1991 (fluid revision) to NDR Plant Size EMD amount to be deposited: Rs. 75 500-

- 1. Date of issue of Tendor documents : 08.03.2014 environts
- Last date & Time furthe submission: On or before flicos P.M. of 24.63.2011 of Tander
- 3. Date & Time of Tencies equipling

1 03:00 P.M. et 24.03:2014

Render papers can be obtained from the office of Jr. Manager (Commercial). The swifte may be downloaded from website www.ninf.in. NDML responses the right to cannot the tender / bids in part or in whole? not2 without assigning any reason whalpotests

NIT No: NINL/CM/CRK/CC/CON/897/NIT-898 DT 06.03.2014 NPA, invites firm buts for Manufacture & Supply of Ultra High Power Graphita Electrodes (18 MT) from Indian manufactures. Bids. duly filled in along eith sill requisite credentate and an EMD of Rs.35,000- in prescribed format to be submitted on or before 15.00 fers of 25.03,2014. Details of tender along with terms 5 conditions may be downloaded from the web sits www.rdnl.in. Contact person: Manager (commercial), fimust : exac printiflyshop to in. NSNL reserves the right to accept or reject any or all bids without as signing any reasons whatsoever

Dy General Manager (Commercial)

79'0 TRY WEIGHTS W SERVE AS BRIGHT IN GARRE ପ୍ରବଶରେ ବାରିପଦା ହାହଳ ଥାବା ଜନ୍ମିଙ୍କ ଜେଖରୀ ଜେନାଙ୍କ ଜିଲସ ଶାଗଳଳ । ଏହି ଗିଡଫ ପଟଣାକ କେତା ତାଙ୍କ ପ୍ରତିକ୍ରିଣାରେ ସେ ଟ" ଏହା ଶାସକ ଗୋଷୀଙ୍କ ଚହାର ର୍ଜୀ ସମ୍ୟାଦର ପ୍ରତାଶ ସେ, ଜିଉଫ କ୍ଲୋବସ୍ ହାମିନ ମିଳିଛି ।

ହେଉଥିବା ଜଣପଡ଼ିଛି । ଏ (MAN TIME STATE VISANTA OF THE STATE OF ଳିଖିତ ଅଭିୟେଖ କରିବାପରେ ପୂର୍ବିଦ୍ର ସମଣାର ଜନ୍ମ ଜାରି ପଞ୍ଚିତ୍ର ଭିକୁ ଅନ୍ତି ସହ୍ୟା ପର୍ଯ୍ୟନ୍ତ ତୋଳ , କିଲା ତୋଲି ଜିନିଷର ଗୌଣସି ପରା ମିତିପାରି ଦହିଁ । ଏଠାରେ ଉତ୍କେଷପୋଟା ସେ, ୬ମସ ପୂର୍ବ ଏହି ମହିରକୁ ହେଉଁ ହୋଇଥିବା ।

ଅନୁଷାନ ଜରସଂଗୁ ସମନ୍ତ ଜାତୀଙ୍କୁ କୃତଶଙ୍ଗା ଆପନ କରାଗୋଇଥ ।

एनटीपीशी NTPC

DULANGA COAL MINING PROJECT NOTICE

If is to inform all concerned that Enseon If it is enform all outcomes that surprincemes conserved has been according to busings Good Mercy Proper (7 MTPA) in a Velley Coolheids. Dist. Supplying Origina is the Mountry of Environment and Foreston on G2°F March. 2014. The copy of the discretion letter is available with the Ostatia State Politation Control Street and may see the seek at the state of the Minestry of Emmissions and Forests at this Josephonic in." AGM (NC)

WTPC United, Dutange Coal Mining Project 951775, Misster Ross, Survingert, PM -770001, Ocioba

Power of India

STEEL AUTHORITY OF INDIA LIMITED

RAW MATERIALS DIVISION industry House, 10, Camac Street, Kolkata-700 017 Sealed Tenders are invited for supply and installation of School Fundture at

Bolani Ore Mines, P.O. Bolani, Drutt Kennihas, Oduna-758037 Tender ref : IIMD/C/MM/Capes/BOL-0211 dated 06.03.2014

Last date of sale of Tender Documents; 27,83:2014

Last date and time of submission of Tenders: upto 1100 hours on 20.03.2014 Issuing Authority: Deputy General Manager (Materials Management) For details and downloading please visit SAL website: www.saltenders.co.in.

Routureed Office Issur Brussey, Lock Road, New Delhi-T18001

Thans's a sittle bit of SAIL in everybody's life

କୃତୀ ଛାତୀ ଚିନ୍ୟୀ ରଣା

ଆନପୁର ଶିଶ 중에는 한 전성으로 ලකුළුවන් ලැබ GSIGOO ମହିଳ୍ଲ ଗୋଡାଲ



ପ୍ରୟା, ବିଦ୍ୟାନୟରେ ଜୁମୟ ଶ୍ରେଥାର ଆହା ହିନ୍ଦୀ ଜଣା ୨୦୧୩ ଶିଶାବର୍ଷରେ ଜତାଣ ଶେଶା ବୃଦ୍ଧି ପତାକ୍ଷରେ ମେରିଟ୍ ଜମ୍ ପରହିଁ ବୃଦ୍ଧି ගතුවෙන් භාවලය මහ විවුණ ହିଳାୟ ଝ୍ରାନ ଅଧିବାର କରିଛନ୍ତି । ସେ ର୍ଜି ରାଣି ରଣା ଓ ମଧ୍ୟକ କଳ୍ଲ ଜଣାଙ୍କର ହନ୍ୟ ଅଟକ୍ତି । ତାଙ୍କ ସଫଟଟା ପହରେ ଦିହାରଣର ଶିଷ୍ଟନ ଶିଷ୍ଟରିତ୍ୱା ଓ ତାଙ୍କର ଉତ୍ତୋଜ ଶିଛଛିତ୍ରୀ ମାନା ଅପାକ ଅନ୍ତାନ ଉଦ୍ରି ।

କତୀ ଛାତୀ ଆବ୍ୟାଶା କ୍ରେନା

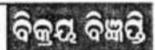
21 P 2 P ଶିଷଦ୍ୱିତ୍ୱା-୧ର ବରୀୟନ ବରୀ 20 210 ସରସ୍ତା ଶିଶ୍ର ବିଦ୍ୟାମହିଶକ



ଆହ୍ୟାଶା ହେନା ୨୦୧୩ ଶିକା ବର୍ଷରେ ଜତୀୟ ଶ୍ରେଶୀ ସମଧାବୃଦ୍ଧି ପରୀଞ୍ଚରେ ବଳା ଦୁହରେ ଜନୀର ପ୍ରତ ହାସର ଜଳି ବଳି ସାଇବାକ୍ ଯୋଗାଦିରେହିତ ହୋଇଛବି । ସେ କଳୀ ଶାମନ ଶ୍ରୀ ପ୍ରତାତ କ୍ରମକ ହେନା ଖ ରାମତୀ ନିନ୍ନାର କାଳୀ ଚନ୍ନନାଙ୍କ କୃତ୍ୱରୀ ଅଟନ୍ତି । ତାଙ୍କର ବଫଳତା ଖର୍ଲ କୃତ୍ରଳୀ ପ୍ରତ୍ମୀ ଓ ପରୋକ ଶିଥାନ ଶ୍ରୀ ମୁନାକର මෙරුම මෙමක් කිල්මන්ති.1 ₆₂₇₇

ମିଟେଡ, କଟକ





ହ ବ୍ରତ୍ତା ପୁରତ୍ତ ତା ୧୬୦୧ । ୨୦୧୪ର ନିର୍ଦ୍ଦେଶକୁ ଖୁଲାପ କରିଅଛନ୍ତି , ନିମ୍ନ ୬ଟାଇକେସର୍ ଆତ୍ତ ରିକଳ୍ପକସନ୍ ଅଫ୍ ଫାଇନୀହିଆର୍ ଆସେଟସ୍ ଆଞ୍ଜି ଜୀ ଇତ୍ତେଷ୍ଟ (ବନଫୋସିମେଡ) ଲୁଲ ୨୦୦୨ର ନିୟମ -୯ ଅନୁସାରେ ୬ଟା ନିମନ୍ତେ ନିମ୍ନପ୍ରତ୍ତା ଉଣ୍ଣସ୍ଥହୀତା / ବଛକଦାତା / ଭାମିନ୍ ବାର ଜ ଠାରୁ ହୁଁତିରେ? ପର୍ବସାଧାରଣରେ ଦିବୁଣ କରିବା ନିମ୍ନତେ ଆଦେବନ ଆହାନ

1/ 666000	ଫରଛଡ ମୁଲ୍ୟ (ଟଙ୍ଗରେ)	ଅମାନତ ଜମା (ଟଙ୍କାରେ)	
ଜନ୍ମ ବହର, ତହସିଲ *.୭, ଓଡ଼ିକ ଗେରିବ୍ୟ	€,€0,00,000,00	₹₹,00,000.00	
ାଙ୍ଗ.୯୪, ଭାବିକ ପୁଟ ବୃଷ୍ଟିମାଣ୍ଡ, ସାହିକ ପୁଟ ଆକୁ, ମୋଟ ଏହିଣା ମୌଳୀ: କଟକ ଶାରତ ଅତା ଟଂ.୧୦.୬୬, ହାର ୧୦.୦.୬୪ କ୍ରେବିମାର୍କ୍ତ, ବାହିମହରା କୋଠା ।	च्छ वर्ष (छ। चर,१३,५० छ,∮७,०୮	୧୩ ଭିଗ ପର୍ଯ୍ୟଳ)	
୪୦୪; ପ - ପ୍ର ଟ.			
1			

ଥିଥି ବିଭାବରେ । ୧୦.୦୩.୭୦୧୪ ହିଏ ଠାରୁ ତା, ୧୯.୦୩.୭୦୧୪ ଲଖ ପଥିବ ଇଁନ ହୋ-ଅପରେଟିର୍ ଜ୍ୟାଙ୍କ ଲିଃ , କତବଙ୍କ ନାମତ୍ୱର ଅମ୍ୟାନତ କମାଲ ବ୍ରିମାଣ ଦ୍ରାୟ ବଂଯୋଜ ୍ନ ହଟନ-୧ଙ୍କ ଠାରେ ତୁା. ୨ ୦ . ୦ ୩. ୨ ୦ ୧ ୪ ଜିଟ ଗୁଣ ଦାଖର କରିବେ । ଅମ୍ଲାନତ ଲ୍ୟ ୍ ନୁକ୍ତେ ୧୯ ମଧ୍ୟ ଓ ୧.୨୦.୯୩.୨୦୧୪ ହେବ ପୁଟ ବ୍ୟବ୍ତ ୧୯.୪ ମଧ୍ୟ କଥା । ଅଞ୍ଚିତ୍ର ୧୭.୭ ଦିଲ୍ଲାନ ବିତ ଜଗତ / ଦେବ / ହୁମ୍ବ ଆକାରିଲେ କମାନେକେ । ଅବଶିଷ କାରିକୁ ଅଲ୍ଲଭା ନିର୍ମ୍ଦର ଆତ୍ୟାକ ସାନ୍ଧ ବୃହିଁ / ଗ୍ରେଟିସ୍ଟର୍ମ ବର୍ଚ ବହନ ବର୍ଷିତ୍ର । ୫. ଶମନାମୁମ୍ବ ଆଲାଗ: ୧୦ର୍ ବ୍ରହ୍ମ ବାମ କରିବେ ବାଳି । ୬. କୌଳସି କାରଣ ନ ବର୍ଷାଣ ନିର୍ମ୍ଦର ପୁତର ଅତକ ବ୍ରହ୍ମର ନିର୍ମ୍ଦରଣ ଜ । ୮. ନିର୍ମ୍ଦର ଅବସ୍ଥଳଣ ପ୍ରବ୍ର ଲକ୍ଲୁକ ବ୍ୟକ୍ତିମାନେ ସନ୍ତିଲ ୩.୭୦୧୪ ନିର୍ମ୍ଦର ବିତ୍ୟ ହେବ ୧୧.୦୦ ପ୍ରତିହାରେ ବ୍ୟବନାନ ଦୁର୍ଗ ହାଣ୍ୟାଲ୍ୟ, ଚିତିକୋସିଆ

ନ୍ୟାର୍ମ୍ନ ଜାନିନ୍ ବାରଙ୍କୁ କଥାର ଦିଆଯାଏଅଞ୍ଚି ସେ, ସେନାନେ ଲଣକ ବହେଯା ରାଣିକୁ ନିରାମ କ୍ରିସର ଏବଂ ସାମୁଞ୍ଚିକ ରାଟେ ବାସୀ କବିବର ।

ยงเครีย โดเดเลซ -/เล ତି ଅର୍ତାନ୍ତ ଜୋ-ଅପରେଟିଲ ବ୍ୟାଙ୍କ ଲିଃ, ଇଟକ

GOVERNMENT OF INDIA DEPARTMENT OF ATOMIC ENERGY **HEAVY WATER PLANT, TALCHER**

e-TENDER NOTICE NO.: HWP/TAL/CIVIL/2014/01

Online tenders are invited through e-tendering mode by the General Manager, Heavy Water Plant, Talcher, P.C. Vikrampur, Dist: Angul (Odshat) on behalf of the President of India In two bid, from eligible contractors for the work and details given below-

NIT No: HWP/TAL/CIVIL/2014/01, Name of the work HOUSEKEEPING OF BUILDINGS AND INDUSTRIAL AREAS AT HWP TALCHER FOR THE YEAR 2014-15. Estimated Cost ₹11,22,903.00, Esmest Noney ₹22,458.00, Period of complistion 12(TWELVE) Months, Last time and date of submission. of bid 24.03.2014 (14.30 Hrs.). The bid forms and other details can be obtained from the website www.tenderwtzard.com/DAE

NEELACHAL ISPAT NIGAM LIMITED A Distruption Office - 759224 Ph (95724) MARKE Feb. 19403

TENDER NOTICE

TENDER NOTICE NO.: NINL/CM/RS/SULPHURIC ACID/N/T-896 DTD, 66,63,2014

Macrie of the works : Supply of 2200 MT of Sulphuric Acid (98% concentrated) as per IS-266/1977A to NINL Plant Size. EMD amount to be deposited : Rs. 1,00,000/-.

TENDER NOTICE NO.: NINL/CM/RS/CAUSTIC SODA LYE/NIT-017 DTD. 66.63.2614

Name of the works: Supply of 200 MT (on 100% strangth boxes) of Caustic Sode Lye (48% Nach) as per lo-252/1991 (bind revision) to NINI. Plant Sile. EMD amount to be deposited : Rs. 75,000-

1. Date of leasure of Tender documents : 96.03.2014 onwards

2. Last date & Time for the submission: On or before 03:00 P.M. of

24.03.2014 of Tentier

: 03:00 P.M. of 24.03.2014 3. Date & Time of Tendor opening

Tender papers can be obtained from the office of Jr. Manager (Commercial). The same may be downloaded from website www.ninl.in-MNI, reserves the right to cancel the tender / bids in part or in whole / split without assignitig any recean whatsoever.

NIT No: NINL/CM/CRK/CC/CON/897/NIT-899 DT 06.93.2014 NINE, invites firm hids for Manufacture & Supply of Ultra High Power Graphite Electrodes (18 MT) from Indian manufactures. Bids, duly filled in along with all requisite credentials and an EMD of Rs.35,000f-in prescribed format to be submitted on or before 15.00 hrs of 28.03,2014. Details of lender along with terms & conditions may be downloaded from the web site www.ninl.in. Contact person: Manager (commercial), Email: skar_ninlig/yahon.co.in. NINI, reserves the right to accept or reject any or all bids without assigning any reasons whatsoever

Dy General Manager (Commercial)

. 000245

SING 41 MIGIED 40 STITION ୬୯୯ରେ ବାହିପଦା ହାର୍ନ ଥାନା ୨ଜିଙ୍ଗ ବେଶରୀ କେନାଙ୍କୁ ଡିରଫ ାପରକି । ଏହି ଶିରଫ ପଦେଶକ ଜମା ତାଙ୍କ ପୁରିକିୟାରେ ସେ ୬ ଏହା ଶାସତ ଗୋଷାଙ୍କ ଚହାନ୍ତ ୀ ଖଣାବର ପ୍ରକାଶ ସେ, ପିରଫ ରାହିର ଜଣିନ ମିତିଛି ।

evene ada esta estados i ଚୋରି ଅଭିଯୁକ୍ତ ଗିରଫ

ଜନ୍ନ-(.ପୁ.ବି.) ନାକ ,ାଜନାବ ଦେହାପଡ଼ାପ୍ତିତ ହେ: ହହ: ବ୍ୟସିବ୍ର ବାରଷାତାରେ ସତ ଏହେ ଗୁଣ ହେଉଁ ହୋଇଥିବା । ତୋଗି ଅଭିସୋଗରେ ଗୋଳିବସ୍ତ ପ୍ରତିଶ ରହିନ୍ଦ ପିଙ୍ଗକ୍ ଜନ୍ମପଡ଼ା ପ୍ରାମପୁ ଅହି ନିରସ କରି ଲୋଟି ବାଳାଣ କରିଥିବା ଜଣାଯାଇଛି । ପରଯୋଷ ଫାଣି ପୁରିଷ ଏକ ମାମରା ଶୃକ୍ ଜଣି ତହଳ ଚହାଇଥିଲେ ।

କତୀଛାତୀଆବ୍ୟାଶା ଜେନା

ଆଦ୍ୟାଶା ହେନା ୨୦୧୩ ସିଥା

ବର୍ଷରେ ହଦାପ ଶ୍ରେଣା ମେଧାବୃଦ୍ଧି

ପର୍ଶ୍ୱରେ ବହା ଦୂରରେ ତୃତାଣ ପ୍ରଚ

ହାସଳ କରି ବୃତ୍ତି ପାଇଟାକ

ପୋଲାରିକେଟିଡ ହୋଇଛନ୍ତି । ସେ ବହା

ଗ୍ରମର ଶ୍ରୀ ପ୍ରଭାତ କୁମାର କେନୀ ଓ

ଶ୍ରମତା ନିହାର ବାହା ହେନାଙ୍କ ସ୍ୱପୂର୍ଣ

ଅଟର୍କ । ତାଳର ସଫଳତା ପାଇଁ ଲୁନ୍ତା

ବୁରୁମ ଓ ଘଟନାର ଶିଷକ ଶ୍ରୀ ପ୍ରତାଳନ

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ଅନୁଷାନ ଡଉଫରୁ ସମକ୍ତ ହାତାଙ୍କୁ ବୃତକ୍ଷତା କ୍ଷାପନ କରାଯାଇଛି । The Sampasa (santalpur) 8 3-14



(A Cost of India Enterprise)

DULANGA COAL MINING PROJECT NOTICE

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6/TPC Limited, Dulange Coal Mining Project 00105, Masson Road, Suntangers, Prix -770901, Odana

Power of India

STEEL AUTHORITY OF INDIA LIMITED

RAW MATERIALS DIVISION Industry House, 10, Camac Street, Kalkuta-700 017 Sealed Tenders are invited for supply and installation of School Furniture at

Solani Cite Mines, P.O. Bolani, Distr. Keonyhar, Octsha-758037. Tender ref : RMD/C/MM/Capex/HQL-0211 dated 06.63.2014

Last date of sale of Tender Documents: 27.03.2014

Last date and time of submission of Tenders: upto 1100 hours on 28.03.2014 Issuing Authority: Deputy General Manager (Materials Management) For details and downloading please vivil SAE, website: www.aailhanders.co.in.

Registerns Diffice Agrant Bhassan, Lock Road, New Selful (10000)

There's a little bit of SAIL in everybody's life



GOVERNMENT OF INDIA DEPARTMENT OF ATOMIC ENERGY HEAVY WATER PLANT, TALCHER

e-TENDER NOTICE NO.: HWP/TAL/CIVIL/2014/01

Online tenders are invited through e-tendering mode by the General Manager Heavy Water Plant, Talcher, PO: Vikrampur, Dist Angul (Odene) on behalf of the President of India in two bid, from eligible contractors for the work and details given below-

NIT No: HWP/TAL/CIVIL/2014/01, Name of the work HOUSEKEEPING OF BUILDINGS AND INDUSTRIAL AREAS AT HWP TALCHER FOR THE YEAR 2014-15. Estimated Cost ₹11,22,003.00, Earnest Money ₹22,45E.00, Period of completion 12(TWELVE) Months, Last time and date of submission of bid 24.03.2014 (14.30 Hrs.). The bid forms and other details can be obtained from the website www.tenderwizard.com/DAE

କୃତୀଛାତ୍ରୀ ଚିନ୍ଦୁୟୀ ରଣା

ପାନପୁର ଶିଷା ହିଳା-୧ ଅଧାନନ୍ତ CHOSED BY CHILDRO ମଣିଲବ୍ଲ ହୋକାଳ



ର.ପ୍ର. ବିବ୍ୟବସରେ ତୃତୀୟ ଶ୍ରେଣୀର ହାହା ହିନ୍ଦ୍ରୀ ଜଣା ୨୦୧୩ ଶିଷାଦର୍ଶରେ ଜନାଶ ଶ୍ରେଣା ବ୍ରହି ପରାଞ୍ଚରେ ମେଠିକ କମ୍ ପରଚି କୃତି "ପାରବାରେ ଶାନ୍ତପ୍ରତ ଶିଶା ଜିଲ୍ଲାରେ ଦିନୀୟ ଜୁନ ଅଧିକାର ବର୍ତ୍ତିକରି । ସେ କୁଟି ଲାଣି ଲଣ ଓ ମଧ୍ୟବ ବହୁ ଉଥାକର ଜନ୍ୟ ଅଟକ୍ତି । ନାଙ୍କ ବସାକ୍ରତା ପଲ୍ଲରେ ହିତ୍ୟକ୍ରଣର ଶିଷ୍ଟର ଶିଷ୍ଟରିତ୍ରୀ ଓ ତାଙ୍କର ପ୍ରଥେ ବିଷୟିତ୍ୟ ନାନା ଅପାଙ୍କ ଅଟବାନ ରହିଛି ।

ମିଟେଡ, କଟକ 900P8€

ହ ଦ୍ୱାରା ପୁଦର ହା ୧.୬୮୦ ୧୮୭୦ ୧୪ର ନିର୍ଦ୍ଦେଶକୁ ଲୁଲାପ କରିଅଛନ୍ତି , ନିମ୍ନ ନୀରତେବହ ଆଗ ଜିନ୍ନ ଲୁଲଗନ୍ ଅଫ୍ ଫାଇନୀକୁଆର୍ ଆହେଟସ୍ ଆଗ ମା ପ୍ରେଷ୍ଟ (ବଳପୋର୍ଶନେକ) ଲୁଲ ୨୦୦୨ର ନିୟମ -୯ ଅନୁସାରେ ଜ୍ୟ ଜିମ୍ବରେ ବିମୁସ୍ତର ଉଣ୍ଡପ୍ରଦାନୀ / ବଳଦଦାନୀ / ଜାମିନ୍ ବାର ଜ ଠାରୁ ହୁଁତିରେ" ଓଡ଼ିଶାଧାରଣରେ ବିକୁଷ ପରିବା ନିମ୍ନରେ ଆହେସନ ଆହାନ

/ 0800001 '	ଙ୍କଞିତ ପୁଲ୍ୟ (ଜଳାବେ)	(ଟଙ୍କାରେ)		
ହଳ ହଳର, ଚହଲିର .୨, ଅବିକ ଗେଉନ୍ମ	₹,₹0,00,000,00 ₹₹,00,000,00			
ନ୍".୯୪, ସାଦିକ ପୁଦ ୨ହିମାରୁ, ଉତିକ ପୁଦ ସକ୍କ, ମୋଟି ଏହିଥା ମୌଳୀ: ହଳକ ମହନ ମଧାନ ନ".୧୦୬୭, ସାଳ ୧୦,୧୬୪ ହେବିନାରୁ, ନାର୍ଜିମହଳା ହୋଇ । ସୁଦ୍ର ହ".୧୪୦୬ ଓ ପୁଟ ୪୦୪: ପ - ପୁଟ ନ".	ରଣ ପର୍ଚ (ଜା ୩୧.୧୨.୨୬୬ ଟ୍ୟୁଡନ୍	୧୩ ରିଖ ପର୍ଯ୍ୟନ୍ତ)		

ାଜା ବିହାସରେ ପ୍ର ୧୦.୦୩.୨୦୧୪ ଜିଲ୍ ପମ୍ବ ହା. ୧୯.୦୭.୨୦୧୪ ଜିଲ୍ ପ୍ରସ୍ଥାର ମିତ ହୋ-ଅଗମେକ୍ଟିସ ବ୍ୟାସ ଲି , କଟକସ ନାମରେ ସମାନତ ଜମାନ ଜିମାକ ହାସ ବଂଗୋଗ ,ଜ୍ୟକ-୧ଙ୍କ ନେଙ୍କ ଡ୍ରା.୨ ୦, ୦୩.୨ ୦ ୧ ୪ ଜିଲ ଦୁଖା ସମ୍ପାଳ କରିଲେ । ଅମ୍ପାଳତ ଜମା । ଏହିଛ ୭୫୯ ହିଲା । ପିତ ହେବ / ହୁମ୍ବ ଆବାହିଲ କମ ଦେବେ । ଅବଶିଷ୍ଟ କାଣିକ ଆହଦା ଦିନରେ ଅବଶାର ବାନ ବ୍ୟବି/ ହେଉଁ ହୁସି ବଳ ବହିଳେ । ୫. ୫ମହାପୁସ୍ତ ହୁଦ୍ରଦାକା ଦେଣ ପ୍ରତି ବାଳା ଓଡ଼ିକ୍ ବଳ । ୬. ଶୌଣସି କାହଳ ଦ ବଣିକ ଦିଲାନକୁ ପୁରୁଷ 110ଟ ଇପରେ ଚିକ୍ରିଷାତ । ୮. ତିସାନାରେ ଅଂଶପ୍ରହଣ ପୂର୍ବତ ହେଉଁମାଟେ ସିଉରିଗ ମ. ୨ ୦ ୧୪ ରିଖରିମ ସହାତ ୧୧.୦୦ ପରିବାରେ କାୟର ମୁଖ୍ୟ ନାର୍ଯ୍ୟାଲର, ବିବିଦୋଗିଣା

ଠାରା/ ଜଣିକ ବାକସ୍ କଣାର ବିଆରାଗଣଳି ଯେ , ସେନାମେ ଗଣର ବଟେସା କାଲିକୁ ନିଲାମ ଲିପର ବଟ ସମ୍ମସ୍ଥିକ ଭାବେ ବାରୀ ଉତ୍ତିତେ ।

ଶା/- ଛମଚାପ୍ରୀପ୍ର ଅଧିକାଶୀ ଦି ଅତୀନ୍ ଟୋ-ଅପରେଟିଲ୍ ବ୍ୟାନ୍ଦ୍ ଲିଞ୍ଚ, ଜଟନ

NEELACHAL ISPAT NIGAM LIMITED 17(17) 4:PO Duburi, Der Jajpur, Odisha - 79/021, Ph. (96/26) 254004, Fax-264612

TENDER NOTICE

TENDER NOTICE NO.: NINL/CM/RS/SULPHURIC ACID/NIT-896 DTD, 05.03.2014

Name of the works : Supply of 2200 MT of Sulphuric Acid (08% concentrated) as per IB-256/1977A to NINL Plate Site. EMD amount to be deponited : Rs. 1,00,000/-.

TENDER NOTICE NO.: NINL/CM/RS/CAUSTIC SODA LYE/NIT-897 DTD: 66.03.2614

Nume of the works: Supply of 200 MT (on 160% strength basis) of Caustic Soda Lyn (48% North) as per IS- 252/1991 (third revision) to NINL Plact Sits. EMD amount to be deposited: Rx. 75,000

Date of issue of Tender documents : 06.63.2914 onwards.

2. Last date & Time for the submission : On or before \$3.60 P.M. of of Tender 24.00,2014

Date & Time of Tender opening

: 03:00 P.M. of 24.03.2014

Tender papers can be obtained from the office of Jr. Manager (Commercial). The same may be downloaded from wabeils www.ninl.ln. NINL reserves the right to cancel the tender / bids in part or in whole / split without aculgring any reason whatsoever.

NIT No: NINLICM/CRK/CC/CON/897/NIT-899 DT 06.03.2014

NINE, invites firm bids for Manufacture & Supply of Ultra High Power Graphite Electrodes (18 MT) from Indian manufactures. Bids, duly filled in along with all requests credentials and an EMD of Rs 35,0001-in prescribed formal to be submitted an or before 15.00 hrs of 28.03.2014. Details of tender along with terms & conditions may be downloaded from the web sits www.ninl.in. Contact person: Manager (commercial). Emak; okar_moligiyahoo.co.in. NIML renerves the right to accept or reject any or all bids without renigning any numoris whatsoever.

Dy General Manager (Commercial)

ି ଦାରିପଦା ବାଜନ ଆବାରେ ଏକ 19 ଓ ୧୪୧ ବମ ଅନ୍ତରିହି ଏବଂ ଅନ୍ତର୍ଜ ବା ଧାରାରେ ଏକ ଅନ୍ତର୍ଜ ପ୍ରଶାରେ ବାରିପଦା ବାଳନ ଆହା କରିଙ୍କ କେଷରୀ କେରାଙ୍କୁ ଶିବ୍ଦମ ଯାପାଇଛି । ଏହି ଜିଗ୍ରଫ ପ୍ରବଣାକୁ (କମା ତାଙ୍କ ପ୍ରତିକ୍ରିୟାରେ ସେ ୧୯ ସମ ଶାବନ ଗୋଷୀଙ୍କ ବକ୍ଲାନ୍ତ ଲୀ ସମ୍ବଦକୁ ପ୍ରକାଶ ସେ, ମିରଫ ଗୋଡିର କାରିନ ମିତିଛି । ବୃତ୍ୟ ସବ୍ୟବତା ବ୍ୟବତା ବ୍ୟବତାର ଅନ୍ୟନ୍ତୀ ଅନ୍ୟନ୍ତୀ ଅନ୍ୟନ୍ତି । ଏ ସହରେ ଅନ୍ତିତ ପ୍ରଥମର ପ୍ରତିଷ୍ଟ । ଏ ସହରେ ଅନ୍ତିତ ଅନ୍ତିତ ଅନ୍ତିତ ପର୍ବତ କରିବାପରେ ପୁରିଷ ପରସର ବବଳ କରିବାପରେ ବିଲ୍ଲ ଅନ୍ତି ସହ୍ୟ ପର୍ଯ୍ୟକ ବ୍ୟେକ୍ଷ ପରା ନେଉଁ କନିଷତ କ୍ଲେକ୍ଷ ପରା ନିନିପରି ନହିଁ । ଏଠାରେ ଉଲ୍ଲେଖଯୋଗ ସେ, ୬ମସ ପୂର୍ବେ ଏହି ମଳିବର୍ଣ୍ଣ ବେଇଁ ବେଇଥିଲା ।

,ଖଧାର ଗୁଣ୍ଡର ଆହି,ବି ହ ୦ ଓ ରଥା ତାଧ ଅପଞ୍ଚଳ ।

ଅନୁଷାଳ ଚଉଫରୁ ସମନ୍ତ ଦାତାଙ୍କୁ କୃତଥନ୍ତ। ଆସନ କରାଯାଇନ୍ତି ।

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DULANGA COAL MINING PROJECT

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NOTICE

NEPC Centers, Datasgs Cost Mining Propert 651/20, Masser Road, Eurobogets, Pts - (7600) (Mines

Power of India

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STEEL AUTHORITY OF INDIA LIMITED RAW MATERIALS DIVISION

inclustry House, 10, Camac Street, Refeatu 200 (1) 2 Scaled Tenders are invited for eapply and installation of School Families of

Bolani Oro Mines, P.O. Bolani, Diett Keonghac/Jobsha-754037.

Tonder ref : #MED-C/MM/Capes/BDL-0211 dutes 06.03.2014

Last date of sale of Tender Documents : 27.03.2014

Last date and time of substitution of Tenders, upon 1 100 hours on 25.0 hours of the County of the C

Rigidianal Office byes filtered, Link Road, Nov. Code 1 (0.01)

There's a little bit of SAIL in sverybody's life



GOVERNMENT OF INDIA DEPARTMENT OF ATOMIC ENERGY HEAVY WATER PLANT, TALCHER

e-TENDER NOTICE NO.: HWP/TAL/CIVIL/2014/01

Online funders are invited through e-tendering mode by the Gorunal Managur, Heavy Water Plant, Takther, PG: Vikrampur, Dist, Angur (Ortisha) or behalf of the President of India in two bid, from eligible contractors for the work and details given below:

NIT No: HWP/TAL/CRYL/2014/01, Name of the work HOUSE/JEEPING OF BUILDINGS AND INDUSTRIAL AREAS AT HWP TALCHER FOR THE YEAR 2014-15. Estimated Cost 711,22,503.00, Earnest Money 722,456.00, Period of completion 12(TWELVE) Months, Last line and date of encommon of 15d 24,01,2914 (14.35 Hrs.). The bid forms and other details can be obtained from the website www.tenderwizersl.com/DAE.

କୃତୀ ଛାତ୍ରୀ ଚିନ୍ନୟୀ ରଣା

ସାନସ୍ତ ଶିଷା ଟିଲ୍ଲା-୧ ଅଧିନସ୍ତ ବରୀ କୃକ ବାର୍ଣଶିସିଆ ଗ୍ରମ ସ ଅ । ଅ ଟ ର ମଣିଜଦ କୋକାର



ହ.ପୁ: ବିଦ୍ୟାଳଭରେ ବୃତୀୟ ଶ୍ରେଣୀର ଜ୍ଞାତ୍ୱୀ ତିନ୍ଦୁୟୀ ଭଣୀ ୨୦୧୩ ଶିଷାଦର୍ଷରେ ଜ୍ଞାତିନ ଜଣ୍ଡ ପଳତି ବୃତ୍ତି ପଳତାରେ ପଳପୁର ଶିଷ ନିକୃତେ ଦିତୀୟ ପ୍ରାନ ଅଧିବାର କରିଛନ୍ତି । ସେ ବୃତ୍ତି ରାଣି ଉଣା ଓ ମଧ୍ୟବ ବହୁ ଉଣାକର କଟ୍ୟ ଅଟରି । ଜାଙ୍କ ସଫଳତା ପଳରେ ଦିଙ୍କରେଇ ଶିଞ୍ଜଳ ଶିଷରିତ୍ରୀ ଓ ନାକର ସମେଳ ଶିଷ୍ଠିକ୍ତି । ମାନା ଅପାଳ ଅଟନାନ ରହିଛି ।

କୃତୀ ଛାତ୍ରୀ ଆଦ୍ୟାଶା ଲେନା

ଣ : ଜ ପ୍ର ଶିଷଦିରୁ-୧୫ ଜଣାବୃତ ଜଣା ଅ ଘୁ ଅ : ଜ ସଇସ୍ତା ଶିଶୁ ଦିବାମସିପର ଛାତୁ! ସ୍ଶୁୀ



ଆଦ୍ୟାଶା କେଳା ୨୦୧୩ ଶିଶା ବର୍ଷରେ ତ୍ତାସ ଶ୍ରେଶା ମଧ୍ୟାତ୍ତି ପରାଞ୍ଚରେ ବରା ବୃହରେ ତୃତ୍ୟ ପ୍ରତ ପ୍ରାବର ବର୍ଷ ଦ୍ୱରି ପାଇବାତ୍ର ପ୍ରାବର ବର୍ଷ ବ୍ୟର ଦେବା ଓ ଶ୍ରାନର ଶ୍ରା ପ୍ରଶନ ତୃମାର ନେଳା ଓ ଶ୍ରାନର ବିହାର ବାଳା କେଳାଙ୍କ ବୁରୁତା ପୁରୁମ ବେସୋର ଶିଶବ ଶ୍ରା ମୂଳକର ପୁରୁମ ବେସୋର ଶିଶବ ଶ୍ରା ମୂଳକର ବ୍ୟରୀଙ୍କ ପ୍ରେବଣ ଅଧିକଳୀୟ । ୧୯୬୭

ମିଟେଡ, କଟକ ରି

989100e

ବିକ୍ରୟ ବିଜ୍ଞପ୍ତି

ଟ ଦ୍ୱାରା ପ୍ରଦକ୍ତ ସା ୧୬୮୦ ୧୮୨୦ ୧୪ର ନିର୍ଦ୍ଦଶତ୍ ଖୁଲାପ କରିଅଛନ୍ତି , ନିମ୍ନ 'ଜୀରତେସର୍ ଆଷ୍ଟ ରିଜନଷ୍ଟକରର୍ ଅଫ୍ ଫାଲନୀଡ଼ିଆଲ୍ ଆବେନସ୍ ଆଷ୍ଟ ଟୀ ଭବରେଷ୍ଟ (ଏନଫୋସିମେକ) ଗୁଲ ୨୦୦୨ର ନିୟମ -୯ ଅନୁସାରେ 'ଜୀ ନିମନେ ନିମୁପ୍ରଦଲ ଲଣଗୁଛୀତା / ବନ୍ଦଦମତା / ଜାମିନ୍ ଦାଇ ଜି ଠାରୁ ସ୍ଥିତିରେ" ସର୍ବସାଧାରଣରେ ବିନୁୟ ଜନିବା ନିମନେ ଆବେଦନ ଆହାନ

ୀ / ବଞ୍ଚଳବାହା	ସଂଇଞ୍ଜିତ ମୁଲ୍ୟ (ଟନ୍ଦାରେ)	ଅନ୍ୟାନତ ଜମ୍ଭା (ଜଙ୍କୀରୋ)	
ନଟକ ସବର, ଚହସିଲ .୨, ପାଟିଜ ରେନିମ୍ୟ	€,€0,00,000,00	€€,00,000.00	
ଟ.୯୪, ସାହିକ ସ୍ୱତ ନସିମାସ୍କ, ସାହିକ ପ୍ରତ ମାଳ, ମୋଟ ବରିଥା ମୌଳା, କଟକ ଗାଲନ ଜଣ ନଂ.୧୦୬୬, ହାଇ 1୦.୦୬୪ ହେବିମାକ୍କ,	ରଣ ପରିମାଣ (ଡା ୩୧.୧୨.୨୦୧୩ ଜିଲ ପର୍ଯ୍ୟତ) ଟ,୬୬,୦୮,୬୭୭.୦୦		
ଚାରିମହନା କୋଠା ।			
୪୦୪: ପ - ପୂଟ ନି.			

ରେ ବିଭାଗରେ । € ୦,୦୩୬.୨ ୦ ୧୪ ଭିଷ ଠାଣୁ ରା. ୧୯,୦୩.୨୦୧୪ ଥିଏ ପର୍ଯ୍ୟତ । ୬୦୧୪ ଥିଏ ପର୍ଯ୍ୟତ । ୬୦୧୪ ଥିଏ ପର୍ଯ୍ୟତ । ୬୦୧୪ ଥିଏ ପ୍ରଥି । ୬୦୧୪ । ୬୦୧୪ ଥିଏ ରାଜିତ୍ୱ । ୬୦୧୪ ଥିଏ । ୬୦୧୪ ଥିଲି । ୬୧୯୪ ଥିଲି । ୬୯୪ ଥିଲି । ୬୯୪

ବାରୀ/ ଜାନିନ୍ ବାକ୍ଷକ କଥାଇ ବିଆଯାଗେଛି ସେ , ସେମାନେ ଉଥର ବରସରା ଭାଳିକୁ ନିଲାମ ଓଡ଼େ ବାମ ସାମୁଞ୍ଚିକ ଭିବେ ବାଲୀ ଉତ୍ତିତେ ।

ย/- ตกอเฐาฐ อมุอเถา

NEELACHAL ISPAT NIGAM LIMITED

TENDER NOTICE

TENDER NOTICE NO.: NINL/CM/RS/SULPHURIC ACIDINIT-896 DTD, 06.03.2014.

Name of the works: Supply of 2200 MT of Supervice Acid (IRRA concentrated) as per IS-205/1977Ata NRS, Plant Site, EMD amount is be doposited: Rs. 1,20,6004-

TENDER NOTICE NO.: NINLICMINSICAUSTIC SODA LYE/HIT-EST DTD: 06.03.2014

Name of the argins: Supply of 200 MT (on 100% strength buring of Celestic Soda Lye (46% Nach) as per IS- 252/1991 (frind revision) to NINL Plant Site. EMD amount to be deposited : Re. 15,000-

Date of Essue of Tender documents : 68.63.2014 anwards.

 Last date & Time for the submission: On or before 63:90 P.M. of of Tender 24.03.2014

Date & Time of Tunder opening : 03:90 P.M. of 24.63.2614.

Tender papers can be obtained from the office of the Manager (Commercial). The serve may be downloaded from wehinits an world by NNI, reserves the right to cancel the lender / bids in part or in white / spirt without appropring any needs whatsoover.

NET No: NINL/CM/CRI/UCC/CON/897/NIT-899 DIT 86,03,2914

MALL costes from bide for Manufacture & Supply of Ultra High Fowers.
Graphilis Electrodes (18 MT) from todian manufactures. Sets, may filed in stong with all impunits credentials and an EMD of Ra 30,0007-11 prescribed format to be submitted on or before 15.00 has of 28.03,2014. Details of tender along with terms & conditions may be downted by the week site www.mint.in. Contact person. Manager (consensation), it mail: clear printing yellow on its MML reserves the right to screep or result any or all bids will contact person.

PRESCULIENDA AL DOO पा शामाहत पर शागना ଏହାଣରେ କାରିପଦା ଟାଉନ ଆକା ୍ଦିଙ୍କ ହେଉରୀ ହେନାଙ୍କୁ ଭିରଫ ।ଯାନଜି । ଏହି ପିରଫ ଘଟଣାକୁ ଜନା ତାଙ୍କ ପ୍ରତିହିୟାରେ ସେ ଏହା ଶାସହ ଗୋଷୀଙ୍କ ଚତ୍ରୀବ ୀ ସମ୍ଭାବର ପ୍ରକାଶ ସେ, ଗିରଫ ତାର୍ଗର ଜାମିନ ମିଳିଛି ।

ହୋଇଥିବା କଥାପଡ଼ିଛି । ଏ ସମ୍ପର୍କରେ ଅତି ବାଇନାରୀ ଫାଣିରେ ବିଲିତ ଅତିଶେମ କରିବାରରେ ପ୍ରଭିସ ଘଟଣାର ଚତ୍ତ ଜାଭି ରଖିଛି 🕈 କିନ୍ତ ଅତି ସଥ୍ୟ ପର୍ଯ୍ୟନ୍ତ ଟୋଲ କିଲା ଚୋଣି ଜିନିଷର ହୌଣସି ପରା ନିହିପରି ନହିଁ । ଏଠାରେ ଉଲ୍ଲେଖସୋକା ସେ, ୬ମସି ପ୍ରବର୍ତ୍ତ ଏହି ମହିରତ ପ୍ରକୃତ ସେଇଥିଲା ।

କୃତୀ ଛାତୀ ଚିନ୍ୟୀ ରଣା

ଯାନପ୍ର ଶିଷା PRICE 9-IRE 28 ତାଇଁ ଡିଡିଆ ପ୍ରାମ GRIRD ମଣିଲବ୍ଲ ମୋଡାଲ



ର.ପ୍ରା. ବିଦ୍ୟାଳୟରେ କୃତାୟ ଶ୍ରେଶାର ହାତ୍ର ଦିନ୍ୟା ରଣା ୨୦୧୩ ଶିଷାକର୍ଷରେ କୃହାୟ ଶ୍ରେଣୀ କୃତି ପ୍ରଥଞ୍ଚରେ ନେଇଟ୍ କମ୍ ପରଟି ବୃଦ୍ଧି -ପାରବାରେ ଯାହଦୂର ଶିଷ ଜିଲ୍ଲାରେ ଦିତୀୟ ପ୍ରାନ ଅଧିକାର କରିଛନ୍ତି । ସେ କ୍ରି ରାଣି ରଣ ଓ ମଧ୍ୟକ ଟକ୍ର ରଣାକର ଜନ୍ୟ ଅଟକ୍ତି । ତାଙ୍କ ବଫଳତା ପଢ଼ରେ ଦିଦ୍ୟଳୟର **ଶିଖନ** ଶିଖରିତ୍ରା ଓ ତାଙ୍କର ପ୍ରତାଳ ଶିଷ୍ଟପ୍ରିତୀ ମାନା ଅପାଙ୍କ ଅବଦାନ ରହିଛି ।

କୃତୀ ହ୍ଲାତୀ ଆଦ୍ୟାଶା ଜେନା

2190.0 ଶିଷାହିତ୍ସା-୧ର ବରୀପୁଟ ବରୀ 00.010 ସରସ୍ତା ଶିଶ୍ ଚିତ୍ୟାମନ୍ଦିରର ଜାତୀ ସୁଶ୍ରୀ



ଆଦ୍ୟାଶା କେନା ୨୦୧୩ ଶିଷା କର୍ଷରେ ତ୍ୱତାୟ ଶ୍ରେଣୀ ମେଧାଦୃତ୍ତି ପ୍ରଭାଷାରେ କରା ପ୍ରନରେ ଦୁବାସ ପ୍ରନ ହାସର କରି କୃତି ପାଇବାକ୍ ସ୍ତେହାର୍କିତ୍ରେ ଜିନ୍ଦ୍ର ଜନ୍ମ ବରୀ ପାମର ଶ୍ରୀ ପ୍ରହାତ କୁମାର ଜେନା ଓ ଶାମତା ନିହାର କାଳା ହେନାଙ୍କ ସ୍ୱସୂହା ଅଟନ୍ତି । ତାଙ୍କର ସଫଳତା ପାଇଁ ଗ୍ରତ୍କା କ୍ରନୀ ଓ ପରୋଜ ଶିଷକ ଶ୍ରୀ ମୁନାକର ସେଠାକ ପ୍ରେନ୍ତର ଅନୁକଳାର । 6277



ଂ ବ୍ୱାଲା ପ୍ରବଲ୍ଲ ତା ୧.୬୮୦ ୧୮୨୦ ୧୪ର ନିର୍ଦ୍ଦେଶକୁ ଖୁଲାସ କରିଅନ୍ତଳ୍ପି , ଚିମ୍ନ ଜାଲକେସକୁ ଆକ ଜିତନଖୁକଙ୍କନ୍ନ ଅଫ୍ ଫାଲନାକୁଆର୍ ଆସେଟସ୍ ଆଣ ୬୮ ଇକରେଷ୍ଟ (ଏନଫୋସିନେବ) ଜୁଲ ୨୦୦୨ର ନିୟମ -୯ ଅକୁସାରେ ବା ନିମକ୍ତେ ନିମ୍ମପ୍ରବର ରଣଗୁହାତା / କଞ୍ଚକଦାରା / ଜାମିନ୍ ଦାର କି ଠାରୁ (ଚିତ୍ରେ" ସଦିସାଧାରଣରେ ବିକ୍ରୟ ଜରିବା ନିମରେ ଆବେଦନ ଆହାନ

ସଂରଥିତ ମୁଲ୍ୟ (ଟଙ୍କାରେ)	ଅମାଳତ ଜମା (ଜଙ୍ଗାରେ)
6,60,00,000.00	€€,00,000.00
ପ୍ୟ ପ୍ୟ (ତା ସ୧.୧୨.୨୦ ୮୦,୧୧,୨	୧୩ ରିଖ ପର୍ଯ୍ୟତ)
	(ଟଙ୍କାରେ) ୧,୧୦,୦୦,୦୦୦.୦୦ ଜଣ ପ (ତା ୩୧.୧୨.୨୦

ରା ବିଲାଗରେ ଗ୍ରାକ୍ତ,ତ୍ୟା,୨୦୧୪ ରିଖ ଠାରୁ ଜା. ୧୯.୦୩,୨୦୧୪ ରିଖ ପର୍ଯ୍ୟର ରା କଲାଗରେ ବା ୧୦,୦୩.୨୦୧୪ ଗଣ ତାରୁ ଖା. ୧୯.୭୩.୨୦୧୪ ଗଣ ପରୀର । ନ ଲୋ-ଅପରେବିର ବ୍ୟାକ ଲି:, ଜତବଦ ନାମରେ ଅମାନତ ଜମାର ଜିମାର ଜ୍ୱାଫୁ କରୋଯ ଜଟକ-୧କ ଠାରେ ବା.୨୦.୦୩.୨୦୧୪ ଥିବା ବୃଷା ବାଶର କରିବେ । ଅମାନତ ଜମା ।ଶିର ୨୭% ଜିଲାଣ ବିଜ ଜଗତ / ହେବ / ହୁ।ଫୁ ଆହାରରେ କଲାବେଟେ । ଅନଶିଷ ରାଉଁତ୍ୱ ।ଜଗା ହିମ୍ବରେ ଆବୃଷ୍ଟାବ ଖାଟ ବୃହିନ୍ (ଜୁଲିସ୍ଟେମ ଖାଟ ବହନ କରିବେ । ୫. ଅମନାପ୍ତାସ୍ଥ ରେମହା ବେଶ ପ୍ରାଣି ବାସୀ ରହିବେ ନାହିଁ । ୬. କୌଣସି କାର୍ଷ ଜ ବର୍ଣାର ଜିଲାଗକୁ ଗୁଡ଼ଶ ।ବଳ ଉପରେ ଜିଲ୍ଲେଖାର । ୮. ନିରାମନେ ଅବଶ୍ରହଣ ଦୃବସ୍ଥ ଲହୁକ ବ୍ୟକ୍ତିମାନେ କଥିଲି । । ୨୦୧୪ ଜିଲ୍ଲେଖରେ ୧୧.୦୦ ପହିଳାରେ ବ୍ୟାକରି ମୃଷ୍ଟ କାର୍ଯ୍ୟନୟ, ନିମିନୋଣିଆ

ଅତା/ଜାନିକ୍ ହାଲଙ୍କୁ ଜଣାର ବିଆଯାଇଅଛି ସେ, ସେମାଟେ ଉପର ବହେଲା ରାଖିକ୍ ନିନାମ ଯତ ଏକ ସାମୁହିକ କାଳେ ଦାରୀ ରହିଲେ ।

ଶା/- ଜମତାପ୍ରାପ୍ତ ଅଧିକାରୀ ଟି ଅର୍ବାନ୍ନ ହୋ-ଅପରେଟିକ୍ ବ୍ୟାଙ୍କ୍ ରିଃ , କଟକ

एन्स्युप्ती NTPC

1000248

SANATA

ଅନୁଷାନ ଚଳପାକୁ ସମୟ ବାହାକୁ କୃତକ୍ଷମ୍ଭ ଛାପତ କଳାଯାଇଛ ।

DULANGA COAL MINING PROJECT NOTICE

"Hi is to inturn all consumed that Environmental Clearance has been accorded to Defende Coal Nivery Project (7 MTPA) in its viving Coeffects. Dish. Suntangarh, Collate by the Medicity of Environment and Formation and 20th March, 2014. The copy of the steaments letter is available with the Cotste State Policies Control Board and may also be seen at the website of the Ministry of Environment and Forests at http://environment.com/ ADM (RC)

NTPC Liesland, Dullange Cost Mining Project. 69129, Mission Root, Sundangert, Pal. 770001, Odern

Power of India



STEEL AUTHORITY OF INDIA LIMITED

RAW MATERIALS DIVISION Industry House, 10, Camac Street, Kolkate-700 017

Sealed Tendors are levited for supply and Installation of School Furniture at Bolani Ore Mines, RO. Bolani, Distr. Keonjhar, Odluha-758(737).

Tender ref : RMD/C/MM/Capes/BOL-0217 dwind 06:03:2014 Last date of sale of Tender Documents: 27.03.2014

Last date and time of submission of Tenders: upto 1100 hours on 28.03.2014 Issuing Authority: Deputy General Manager (Materials Management)

For details and downloading please visit SAIL website: www.nailtenders.co.in. Regovered Office Input Bhawan, Lott Foat, New Delhi-110 003

There's a little bit of \$4it in everybody's lite



GOVERNMENT OF INDIA DEPARTMENT OF ATOMIC ENERGY HEAVY WATER PLANT, TALCHER

e-TENDER NOTICE NO.: HWP/TAL/CIVIL/2014/01

Online tenders are invited through e-tendering mode by the General Manager, Heavy Water Plant, Talcher, PO: Vikrampur, Dist: Angul (Odishe) on behalf of the President of India in two bid, from eligible contractors for the work and details given below-

NIT No: HWP/TALICIVIL/2014/01, Name of the work HOUSEKEEPING OF BUILDINGS AND INDUSTRIAL AREAS AT HWP TALCHER FOR THE YEAR 2014-15. Estimated Cost ₹11,22,903.00, Earnest Money ₹22,458.00, Period of completion 12(TWELVE) Months, Last time and date of submission of bid 24.03.2014 (14.30 Hrs.). The bid forms and other details can be obtained from the seballe www.tenderwizard.com/DAE

NEELACHAL ISPAT NIGAM LIMITED 1711715 AdPG Cuburi, Diel-Japon, Odishu - 155036, Ph.(90728) 264088, Fax: 264032

TENDER NOTICE

TENDER NOTICE NO.: NINL/CM/RS/SULPHURIC ACID/NIT-896 DTD. 06.03.2014

Name of the works: Supply of 2200 MT of Sulphuric Add (98% concentrated) as per IS-256/1977A to NINI, Plant Site. EMD amount to be deposited: Pts. 1,00,000F-

TENDER NOTICE NO.: NINLICM/RS/CAUSTIC SODA LYE/NIT-897 DTD. 06.03.2014

Name of the works: Supply of 200 MT (on 100% strength basis) of Caustic Socia Lye (45% Neoh) as per III- 252/1901 (evint revision) to NINL Plant Site. EMD amount to be deposited : Rs. 75,000:

1. Date of issue of Tunder documents: 06.03.2014 onwards.

Last date & Time for the submission: On or before 93:00 P.M. of of Tender

24.03.2014

Date & Time of Tendor opening

: 03:00 P.M. of 24.03.2014

Tender papers can be obtained from the office of Jr. Manager (Commercial). The same may be downloaded from website www.mini.le-NINL reserves the right to cancel the tender / blds in part or in whole / split without assigning any reason whatsoever.

NIT No: NINL/CM/CRK/CC/CON/897/NIT-899 DT 06.03.2014 NOVE, invites firm birds for Manufacture & Supply of Ultra High Power Graphite Electrodes (18 MT) from Indian manufactures. Bids. duly filled in along with all requisite credentials and an EMD of Re.35,000/- in prescribed former to be submitted on or before 15.00 hrs of 28.03.2014. Details of tender along with terms & conditions may be downloaded from the web site www.nint.in. Contact person: Manager (commercial), Email: clear_nini@yahoo.co.in. NINL reserves the right to accept or reject any or all bids without sessioning any reasons whatsoever.

Dy General Manager (Commorotal)



NTPC Limited

DULANGA COAL MINING PROJECT NOTICE

"It is to inform all concerned that Environmental Clearance has been accorded to Dulonge Coal Mining Propert (FMTPA) in its Valley Coalfacts. Dott. Sundangers, Octobro by the Ministry of Environment and Formation 03* March, 2014. The copy of the chearance letter is available with the Octobro Sale Potacion Control Source and may also be seen as the wobsite of the Ministry of Environment and Forests at http://environmic.in. AGM (I/C)

NTPC Limited, Bullange Coul Wining Project 681/26, Wission Road, Sundargem, Pay -770001, Odioha

Power of India

PFC CONSULTING LIMIT

*Consultancy assignment for development of coal blocks allocated for Odisha UMPP, Bhodishlat, Odisha'

The last date of submission of Response to Bids which was earlier on March 10, 2014 on or before 11:00 kys (IST) is extended to March 20. 2014 on or before 11:00 hrs (IST). The Response to Bids will be opened on the same day at 11:30 hrs (IST). The other time lines as specified in the filld document shaff stand extended accordingly. The filld document is available on PFC & PFCCL website www.pfcindla.com & www.pfcclindla.com

Note: PFC Consuling Landod reserves the right to cancel or modify the process without assigning any reason and without any habitey. This is not an offer.

Streetable Verma, Dy. Manager PFC Consulting Limited

A Wholly invited Subsidiary of Power Finance Corporation Ltd.

(A Govt. of India Undertaking)

Registered Office: First Poor "Upandh", 1, Secultarities Line, Consuger P.

feer Cally 110001, and ph. 91-11-25650122 Fax: 91-11-25450170,
n-mail: ediahaumpy_coablock@efonda.com.



COMPUTER CENTRE UTKAL UNIVERSITY VANI VIHAR, BHUBANESWAR-751004

TENDER NOTICE

Snaled tendors are invited from the reputed Manufacturing Firms Authorized Dealers for supply of rack mounted Servers / up-grantatio Authorised Dealers for supply of rack mounted Servers / up-granulten of existing three nos. of IBM X-3650 rack nounted servers. Desidon Computers. Digital Managed L2 switch. SKVA on-line UPS, 0.6KVA offline UPS, Wireless LAN (Bridging), Wi-Fi, IP Camera with NVA Window AC, Water cooler with Water purifier, battery for UPS. Computer Paper, Repairing of existing computer chairs & sables, 11 watt ceiting microhad CPL Buth (Philips), Computer Consumables, 18.5 LED Monitors, Server based Arti-Virus for the centre. Temper documents with terms & constitute to be deenfoeded from our website story utilized to the constitute of the constitute of the constitute of the centre o adultion www.utkaluniversity.se.in from 10.03.2014. Sealed tender complete in all respect along with EMD (amount mentioned in lender document) and. Tender form cost of Ps.500+ (non-refundable) in strape of Banker's choque/DD in favour of Prof. in Charge. Computer Centre payable at Syndicale Bank. Uttat University Campus Branch, Bhubarieswar must tranch the office of the undersigned on or before 22.03.2014 by 3.00 P.M. Tender will be opened on 22.03.2014 at 4.00 P.M. in presence of tenderers/their representatives. For repaining and up-gladelon work the time should reper the location from 10.00 A.M. to 5.00 P.M. in insirking days

The eight to accept or resect the towest or stry tunder in part or of without assigning any reason is reserved.

Sal- Prof. in Charge



PSPCL Punjab State Power Corporation Limited

NOTICE INVITING TENDER

DEFICE OF CHIEF ENGINEERISEW MINE SECRETAMATE GPP. PAU GATE NO. 1, PSPCL LUDHIANA

Tender Enquiry No. : GW-207/PG Date: d03: 03:2014

Tender Notice for: Europy of MidSheel Sections of Indowing streams to make the to its 2002/000 with labout accordances (Grade-A Quality) and PSPQL's Specifications QVF 257 dates 20183 2014. ..



KARN

Sampige Road Phone: 080 - 23

No. ED/KEA/ADMN/CR-12/2013-14

ADMISSION TO PROFE

- Applications are invited from eligible candidates of Ka Courses detailed herein under for the seats to be notifi-
- Academic Eligibility

Si. No		In Qualifying
1.	Medical / Dental (MBBS / BDS)	Passed in 2nd PUC Languages and obt Physics, Chemistry, and 3B category can
2.	Ayurveda, Homoeopathy, Unani, Naturopathy and Yoga (ISM & H)	Passed in 2nd PUC Languages and ofti Physics, Chemistry, and 38 category can
3.	Engineering / Technology (B.E. / B.Tech)	Passed in 2nd PUC/ Languages and obt Physics and Mathe Biology / Electronics 38 calegory candida
4.	Architecture (B.Arch)	Passed in 2nd PUC Compulsory options aggregate in all the category candidates
5.	B.Sc. (Agriculture), B.Sc. (Forestry), B.Sc. (Sericulture), B.Sc. (Agri.Biotech), B.Sc. (Horticulture), B.H.Sc., (Home Science)	Passed in 2nd PUC and Biology as option
6.	Bachelor of Veterinary Science and Animal Husbandry (B.V.Sc. & A.H.)	Passed in 2nd PUI aggregate minimum English subjects. (4/ candidates)
7.	B.Tech.(Food Technology), B.Tech.(Oniry Technology), B.F.Sc (Bachelor of Fisheries Science), B.Tech. (Food Science & Tech.) and B.Sc.(Ag. Marketing and Co-operation)	Passed in 2nd POC / Mathematics and Bio
8.	B.Tech.(Agriculture Engineering)	Passed in 2nd PUC / and Mathematics as r
9.	B-Pharma	Passed in 2nd PUC / and Biology or Phys Minimum of 45% of M 1, 2A, 2B, 3A and 3B s Passed in Diploma in by the Pharmacy Cos and has secured mini 3A and 3B catagory of
10.	2nd Year B. Pharma	Passed in Diploma in by the Pharmacy Co. and has secured mini

Monitoring data of the stipulated environmental quality parameters being displayed at the entrance of the mine office

