



MAHAGENCO
Maharashtra State Power Generation Co. LTD
CIN: U40100MH2005SGC153648

(A GOVERNMENT OF MAHARASHTRA UNDERTAKING)

CHANDRAPUR SUPER THERMAL POWER STATION
MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED
(ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018)
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CHN/Env/MoEF&CC/ 001619

Date: 15 JUL 2025

To
Additional Principal Chief Conservator of Forests,
Ministry of Environment, Forest & Climate Change (WCZ)
Ground floor, East Wing, "New Secretary building",
Civil line Nagpur-440001.

By Email: eccompliance-mh@gov.in

Sub: - Submission of Six Monthly Compliance Reports of Environmental Clearances (EC) of CSTPS, Chandrapur.

Ref: - 1. CTO renewal application vide UAN No. MPCB-CONSENT-0000241938 dated 27.03.2025.
2. MPCB CONSENT vide UAN No.0000205221/CR/2502000026 dated 02.02.2025.
3. TO letter CHN/Env/MoEF&CC/002362 dated 25.07.2022
4. EC letter No. J- 13011/ 53 / 2008- IA.II (T) dated 15.06.2018.
5. EC letter No. J- 13011/ 53 / 2008- IA.II (T) dated 31.03.2016.
6. EC letter No. J- 13011 / 53 /2008- IA.II (T) dated 30.01.2009.
7. CTE No. BO/RO (P&P)/CC-485 dated 30.12.2008
8. EC letter No. J- 13011 / 15 / 87- IA.II (T) dated 03.07.1990.

Dear Sir,

With reference to subject, please find enclosed herewith the Six Monthly Compliance Reports of Environmental Clearances for the period **January 2025 to June 2025** pertain to Chandrapur Super Thermal Power Station, Chandrapur. The report comprises-

1. Environment Clearance Conditions
2. Stack Emission Measurement for January 2025 to June 2025
3. Ambient Air Quality Monitoring for January 2025 to June 2025
4. Fugitive Dust Emission for January 2025 to June 2025
5. Effluent Quality for January 2025 to June 2025
6. Ash Generation & its Utilization for January 2025 to June 2025
7. Noise Monitoring for January 2025 to June 2025
8. Ground water and Soil Quality Report for January 2025 & April 2025
9. Surface water analysis Report for January 2025 to June 2025
10. Study of radioactivity & heavy metals in coal and ash
11. Environment Statement 2023-24 and Plantation report 2023-24
12. Coal ash & Sulphur analysis report
13. Ground level concentration study report for March 2025

Thanking you

Yours faithfully

Chief Engineer (O&M)
CSTPS, Chandrapur

Encl.: As above.
Copy s.w. r. to:

1. The Executive Director (O&M-II/E&S) CSTPS, Mumbai.
2. The Divisional Head-IPC-II, CPCB, Delhi.
3. Regional Officer MPCB, Chandrapur
4. Sub-Regional Officer MPCB, Chandrapur

Maharashtra Pollution Control Board
Regional Office
Udyog Bhavan 1st Floor Station Road
Chandrapur-442401

**SIX-MONTHLY ENVIRONMENTAL
MONITORING REPORT**

FOR

The Period from January 2025 to June 2025

of

Chandrapur Super Thermal Power Station

Chandrapur

Urja Nagar, Chandrapur-442404

SIX MONTHLY COMPLIANCE REPORTS
OF
ENVIRONMENTAL CLEARANCES (EC)
2920 MW (2x210+5x500) THERMAL POWER PLANT
AT
CHANDRAPUR, DISTRICT CHANDRAPUR
MAHARASHTRA

Submitted to:

Ministry of Environment, Forest & Climate Change
Central Pollution Control Board, New Delhi &
Maharashtra Pollution Control Board, Mumbai

Submitted By:

Chandrapur Super Thermal Power Station,
Chandrapur-442404, Maharashtra.
(January 2025 to June 2025)

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1.0 Introduction

Chandrapur Super Thermal Power Station, Chandrapur is coal based Thermal Power Plant having installed capacity 2920(2x210 +5x500) MW.

The plant site is located at Urjanagar, 10 Km away from Chandrapur city. The total factory area is 11237.05 hectare and 1117 hectare open space is available for plantation. The villages Kachrala, Gunjala, Tadali, Kawathi, Tirvanja, Chhota Nagpur, Ambhora, Khairgaon, Chargaon along with western coal field Bhatadi, Durgapur and Padmapur surrounds the plant site.

CSTPS has been granted Environmental Clearances from Ministry of Environment & Forest, Consent to Establish and Consent to Operate from Maharashtra Pollution Control Board. As of the compliance of statutory requirement, environmental quality monitoring is being done regularly at locations suggested by Regional Officer, MPCB, Chandrapur. Four numbers of Continuous Ambient Air Quality Monitoring Station have been installed at four different locations inside the plant boundary as per wind rose and suggested by RO, MPCB, Chandrapur. Also, environmental monitoring & analysis is being carried out by MoEF & CC recognized laboratory M/s. Mahabal Enviro engineers Pvt Ltd. & NABL accredited M/s. JP Associates & laboratories.

Pointwise compliance status of Environmental clearance for Chandrapur Super Thermal Power Station, Chandrapur is furnished herewith.

Compliance Status of Environmental clearance

Unit No – 7: 1x500 MW

Letter from Additional Director, MoEF Bhopal No. 4-9/92(ENV)/589 dated 24.03.2009.
MoEF New Delhi Environmental clearance Letter No. J-13011/15/87-I/(II) dated 03-07-1990.

Sr No.	EC Conditions	Compliance Status
(i)	Electrostatic precipitators having an operational efficiency of not less than 99.6% should be installed so as to ensure that particular emission are not exceeding 150 mg per cubic meter.	<p>Complied.</p> <p>CSTPS has installed Electrostatic precipitators (ESP) for Unit – 7 with efficiency of 99.88 %. The design of ESP for particulate emission is 150 mg/Nm³. Also, an Ammonia flue gas conditioning system (AFGCS) was used along with ESP to reduce PM to 100 mg/Nm³. These ESP's are regularly operated and maintained to achieve the prescribed norms.</p>
(ii)	Multi flue stack of not less than 275 meters height should be provided.	<p>Complied.</p> <p>CSTPS has provided a mono flue stack having a height of 275 meters, as this EC condition is only for a single unit, i.e., 1 x 500 MW.</p>
(iii)	The plant will put up flue gas de-sulphuration unit as part of unit – 7 since the ground level concentration of SO ₂ and NO _x will beyond standard prescribed.	<p>Being Complied.</p> <p>The retendering of is installation of flue gas de-sulphuration (FGD work is in process. To control NO_x emissions, CSTPS has provided an Over Fire Air (OFA) system.</p>
(iv)	The temperature of cooling water discharged to the reservoir should not exceed 5.0°C above ambient temperature.	<p>Complied.</p> <p>CSTPS has provided induced draft cooling tower (IDCT) for unit No. 7, where cooling water is re-circulated in a closed loop, and there is no discharge of cooling water in natural water bodies. The cooling water temperature is within range in a complete cycle. Further, cooling water blow down is treated at ETP, and treated water is reused for ash slurry disposal to ash bund.</p>
(v)	The bleed off from the boiler house, from cooling towers, effluent from DM plant will be fully treated and reused so that there is no effluent discharge to the river.	<p>Complied.</p> <p>All the effluents from power plant are treated at Effluent Treatment Plant. There is no discharge in the river. The capacities of 4 ETPs are: ETP-I: 1600 M³/hr, ETP-II: 500 M³/hr ETP-III: 100 M³/hr, ETP-IV: 675 M³/hr</p>

(vi)	Effluent from ash pond shall be totally recirculated within the plant.	<p>Complied.</p> <p>Ash water recovery system is operational at ash bund. Ash water recovery reused and re-circulated for ash slurry disposal to ash pond.</p>
(vii)	Adequate number of air and water quality, including ground water, monitoring stations will be set up at different locations in and around the plant. The location of these monitoring stations should be selected in consultation with state pollution control board, India meteorological department. The monitored data on air and water quality should be furnished to these ministries and state pollution control board once in three months.	<p>Complied</p> <p>1) Ambient Air Quality Monitoring & fugitive dust emission monitoring is carried out at different locations in and around power station (Annexure-I).</p> <p>2) Ground water quality & Soil quality from 14 locations selected in consultation with state pollution control board around power station and ash bund area is monitored in all 3 seasons to assess the impact (Annexure - II).</p> <p>3) The effluent analysis of all 4 ETPs, Boiler blow down, Cooling Tower blow down, DM plant waste and Ash bund Effluent is regularly analyzed from MoEF&CC recognized agency (Annexure - III).</p> <p>All the industrial effluents are treated in effluent treatment plants (ETPs) and treated water is reused for Ash slurry disposal to ash bund.</p>
(viii)	The stack will be provided with automatic monitoring instrument for measuring and recording SO ₂ and NO _x .	<p>Complied</p> <p>CSTPS has installed online SO₂ and NO_x monitoring analyzers (OCEMS) & same is connected to the CPCB server & MPCB server.</p>
(ix)	Adequate measures for control of noise due to various operations within different plant units should be taken. The noise levels should conform to standards prescribed by ministry under the Environment (Protection) Act.	<p>Complied.</p> <p>CSTPS has taken Adequate measures for control of noise level of various plant auxiliary units and all necessary precautions have also been taken to maintain noise level. The noise level measurement for ambient noise and workplace noise is regularly monitored (by M/s Mahabal Enviro Engineers Pvt. Ltd.) (Annexure - IV).</p>
(x)	Precautionary measures for control of fire and explosion hazards arising due to transportation, use of storage of coal and oil should be taken.	<p>Complied.</p> <p>CSTPS has dedicated fire services Section. Separately, CSTPS has installed Fire alarms, fire hydrants & spray systems. All adequate measures are available for control of fire & explosion hazardous arising due to transportation, use & storage of coal and oil.</p>
(xi)	A green belt development plan covering the entire area of the west bank thermal	<p>Complied.</p>

	<p>power station should be prepared and submitted to this ministry within 6 months time. The plant species selected should be native to the area and they should given maximum green cover. The species so selected should be sensitive as well as resistant varieties to emission SO₂.</p>	<p>CSTPS has carried out tree plantation in and around power station. The area covered under green belt is 49.50% of open area. The present status is (Annexure- V) as below: Total Plant area: 11237.05 Hectare. Open Space available for Plantation:-1117 Hectare. Total area under tree plantation:-552.88 Hectare. Total Tree Plantation: 1326391 Nos. (including bamboo plants) Plant species such as; Acacia nilotica (babul), Lencaena Lencoephala (subabul), Shivan, Sisam, Ponogamiapinnata (karanj), Casia, Gulmohar, Petraform, Banyan, Encalyptus (Nilgiri), Neem, Albirralebbback (Sirus), Neriumindicum, Jambolana, Ocimumbasiticum (Tulsi), bamboo species which are resistance to dust & gases are planted.</p>
(xii)	<p>They should carry out regular monitoring of flora and fauna, fisheries and bottom sediments of the reservoir to monitor the impact of any discharges from the thermal power station.</p>	<p>Complied</p> <p>Power station effluents are not discharged to any natural source. CSTPS has ETPs where plant effluents are treated. Treated effluents are utilized for ash disposal to ash bund. CSTPS has initiated an environmental assessment study to evaluate the impact of Chandrapur thermal power plant and mining activity of WCL on the Tadoba Andhari Tiger Project. A joint study is conducted by NEERI and WII since 2020. The study is in process and CSTPS is anticipating the final report by August, 2025. (Annexure-VI).</p>
(xiii)	<p>Protective and control measures in coal transportation areas and the conveyor belts system should be taken to minimize the coal dust pollution in these zones.</p>	<p>Complied</p> <p>Coal transported through trucks/wagons are covered with tarpaulin. Necessary protective and control measures for reduction and control of dust in Coal Handling Plant area are carried out. Dust Extraction, Dust Suppression system, water spraying system at conveyers belts and crushing houses, fogger system at wagon tippler, water spraying at coal stack yard, cladding to all conveyer belts etc. are provided (Annexure-VII).</p>

Compliance Status of Environmental clearance

Unit No – 8&9: 2x500 MW

EC letter No. J- 13011/ 53 / 2008- IA.II (T) dated 15.06.2018.

EC letter No. J- 13011/ 53 / 2008- IA.II (T) dated 31.03.2016.

EC letter No. J- 13011 / 53 /2008- IA.II (T) dated 30.01.2009.

EC Cond No.	EC Conditions	Compliance Status
(i)	No additional land shall be acquired for any activity/facility of this project	Complied CSTPS has not acquired any additional land for any activity/facility of current project.
(ii)	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.4% and 34% respectively at any given time.	Complied CSTPS is not using high-content sulfur & ash coal.
(iii)	A bi-flue stack of 275 m height shall be provided with continuous online monitoring equipments for SOx, NOx and Particulate. Exit velocity of flue gases shall not be less than 22 m/sec.	Complied CSTPS has provided a bi-flue stack of 275 m height for units 8 & and 9 with continuous online monitoring equipment for SO ₂ , NO _x , and particulate matters & are connected to the MPCB/CPCB server. Exit velocity of flue gas are as per EC conditions.
(iv)	High efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm ³	Complied CSTPS has installed 72 ESP fields for each unit 8 & unit 9 with efficiency of 99.937% and installation work is completed in 2016.
(v)	Space provision shall be kept for retrofitting of FGD, if required at a later date.	Complied CSTPS has provision of space for retrofitting/installation of FGD.
(vi)	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Complied CSTPS has provided dry ash silos, dry dust extraction/suppression systems to unit 8 & unit 9. All 02 dry ash silo with Bag filters is in operation. All 02 HSCD ash silo construction, bag filter & vent blower erection completed in 2016 and system is in operation. The work of Dust Extraction system at Crusher House and bunkers area is completed and is in operation since 2016.

		Dry fog dust suppression system provided in wagon tippler area.
(vii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided, 100% fly ash utilization shall be ensured from day one. Unutilized fly ash, in emergency and bottom ash shall be disposed of in the ash pond in the form of slurry.	Being Complied Dry ash silo (02) established to collect dry ash for further utilization, unutilized fly ash and bottom ash are disposed in the ash pond in the form of slurry with recirculation of ash water. Monthly ash generation & utilization report is enclosed (Annexure-VIII).
(viii)	Existing ash pond shall be for disposal of bottom ash. No ash pond shall be created for this expansion project.	Complied CSTPS has not created any additional/separate ash pond for units 8 & 9. The existing ash pond is sufficient for the disposal of bottom ash.
(ix)	Closed cycle cooling system with cooling towers shall be provided. COC of at least 6 shall be adopted and the effluent shall be treated as per the prescribed norms.	Complied CSTPS has provided Natural draft cooling towers (NDCT) with a closed-water circulation system. The Cycle of Concentration (COC) is maintained as per prescribed norms. Generated blowdown effluents from the NDCT pond are treated in ETP IV and reused for ash slurry preparation.
(x)	The treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.	Complied CSTPS has installed a single ETP IV with a capacity of 675 m ³ /hr catering to both Unit no.8 & 9. All the effluent treated adequately in the ETP and treated water is being reused within the plant for ash slurry disposal to the ash bund. Hence, there are no mixing plant effluents with storm water. CSTPS has adopted a “ Zero Liquid Discharge Policy ”.
(xi)	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.	Complied CSTPS has provided 2 STPs with capacities of 240 M ³ /hr for residential colony (installed and in operation from 1986) and 1 M ³ /hr for unit 8 & unit 9 (installed and in operation from 2016) where sewage effluents are treated & recovered and utilizing for ash slurry disposal, gardening and plantation.
(xii)	Rainwater harvesting should be adopted. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting	Complied Total three numbers of Trapezoidal section of open bottom settling tanks/open recharge basin

	technology within a period of three months from the date of clearance and details shall be furnished.	namely 1) RB-1- 35m x 35m x 3.5m 2) RB-2- 35m x 35m x 3.5m 3) RB-3- 25m x 25m x 3.5m
(xiii)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry at Bhopal.	Complied Ventilation system, Dust suppression system, water sprinkler system, Dry fog system and rain gun are being provided wherever required. Fire hydrant system is provided in coal stack yard and Water spray system is provided in conveyers, crusher house.
(xiv)	Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventually in case of an accident taking place, Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the DMP, Sulphur content in the liquid fuel will not exceed 0.5%.	Complied CSTPS has provided storage facilities for LDO/HFO located considering minimum risk. Mock Drills is conducted regularly and based on the feedback of the same, modification if required, if any, shall be done. HFO/ LDO storage tank work is completed Disaster management plan is prepared (Annexure-IX).
(xv)	Regular monitoring of ground water including heavy metals (Hg, Cr, As and Pb) in and around the ash pond area shall be carried out, records maintained and six monthly reports shall be furnished to the Regional Office of this Ministry.	Complied CSTPS has given work to M/s. Mahabal Enviro Engineers Pvt. Ltd. for regularly monitoring of groundwater, including heavy metals, from in and out around the ash pond area. (Annexure-II) Monitoring results submitted with six monthly reports to the Regional Officer, MPCB, and MoEF&CC regularly. Reports are available on company's website.
(xvi)	A green belt of adequate width and density shall be developed around the plant periphery covering 34 acres of area preferably with local species.	Complied CSTPS has carried out massive tree plantation in and around power station. The area covered under green belt is 49.50% of open area. (Annexure – V).
(xvii)	Adequate funds shall be allocated for undertaking CSR activities.	Being Complied
(xviii)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied During the construction phase, CSTPS provided first aid and sanitation arrangements for the drivers and other contract workers. The

		construction phase has been completed; therefore, it is not required.
(xix)	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dB (A). For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/ less noisy areas.	Complied CSTPS has provided acoustic enclosures in the high noise area, including the D.G. Set, compressed air system, and turbine. Protective equipment like earplugs has been provided. CSTPS carried out periodic health check-ups, including audiometry tests for all employees. Recently, audiometry tests were conducted in February & June 2025. A total of 921 employees participated in the audiometry camp.
(xx)	Regular monitoring of the ambient air quality in the impact zone shall be carried out and records maintained. In case the air quality levels exceed the prescribed standards, necessary corrective measures, shall be taken	Complied CSTPS is carrying out regular monitoring of Ambient Air Quality by third party NABL Accredited consultant /MOEFCC reorganize agency (M/s. Mahabal Enviro Engineers Pvt. Ltd.) Please see (Annexure-I)
(xxi)	Regular monitoring of ground level concentration of SO ₂ , NO _x , SPM and RSPM shall be carried out in the Impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB, periodic reports shall be submitted to the Regional Office of this Ministry. The date shall also be put on the website of the company.	Complied CSTPS is carrying out regular monitoring of ground level concentration of SO ₂ , NO _x , SPM and RSPM in the Impact zone decided in consultation with SPCB and records are available with CSTPS (Annexure-X). Periodic reports are submitted to the Regional Office of this Ministry & MPCB.
(xxii)	A detailed plan for health monitoring in the area within the impact zone shall be prepared and implemented along with local administration. The plan should, besides others, also provide for monitoring of respiratory disorders. The plan should be submitted within 3 months to this Ministry and its Regional Office at Bhopal.	Complied Health Monitoring camp were arranged recently on 03.06.2025 for residents of Urjangar colony & nearby villages like Durgapur, Khairgaon, Ambhora at Snehbandh Sabhagruh, Urja Nagar, Chadrapur. Details of health camp & photographs are attached (Annexure-XI).
(xxiii)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the	Complied CSTPS has fulfilled the required conditions during construction phase of project. Now the project construction work is completed & handed over to O&M, hence it is not required.

	form of temporary structures to be removed after the completion of the project.	
(xxiv)	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in	Complied
(xxv)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated Environmental safeguards.	Complied A separate environment management cell with qualified staff is already formed at CSTPS for implementation of the stipulated Environmental safeguards.
(xxvi)	Half yearly report on the status implementation of the stipulated conditions and environmental safeguards shall be submitted to his Ministry/ Regional Office/CPCB/SPCB.	Complied Report is submitted to Ministry/ Regional Office/CPCB/SPCB.
(xxvii)	Regional Office of the Ministry of Environment & Forests located at Bhopal will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will upload the compliance status in their website and update the same from time to time. Criteria pollutant levels (stack and ambient levels) will be displayed at the main gate of the power plant.	Complied Compliance status is submitted to MoEF, Regional office, Nagpur. Criteria pollutant levels (stack and ambient levels) are displayed at the main gate of the power plant. (Annexure-XII).
(xxviii)	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection	Complied Separate funds are allocated for implementation of environmental protection measures. The year-wise expenditure is regularly reported to SPCB. (Annexure-XIII).

	measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	
(xxix)	The project authority shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Complied
(xxx)	Full cooperation shall be extended to the Scientists/Officers from the Ministry/Regional Office of the Ministry at Bhopal / the CPCB/the SPCB who would be monitoring the compliance of environmental status.	Complied CSTPS, Chandrapur gives full cooperation to the Scientists/Officers from the statutory bodies that would be monitoring the compliance of environmental status.
Conditions as per EC letter No. J- 13011/53/2008-IA.II(T) dated 31.03.2016		
(xxxix)	The action plan formulated by CPCB and SPCB for the Critically Polluted Area (CPA) of Chandrapur shall be strictly compiled.	Complied
(xxxii)	The standards stipulated by the Ministry vide Notification dated 07.12.2015 for Thermal Power Plants shall be duly compiled.	Being Complied CSTPS, Chandrapur compiles all the standards stipulated by the Ministry vide Notification dated 07.12.2015 & amended notification dated 05.09.2022 and Timeline for FGD installation as per MoEF&CC notification dated 30.12.2024 for Thermal Power Plants. The retendering of is installation of flue gas de-sulphuration (FGD work is in process. .
(xxxiii)	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	Complied CSTPS has already operating a 5 MW solar power plant. The status of the proposed ground-mounted solar power generation project is as; *65 MW Lakhmapur area:- LoA for fencing work is issued, and work started from October 2024. *145 MW Kachrala & Gunjala area:- Fencing work is in process, and about 80% of fencing work is completed. The board resolution for procurement/installation of the solar panel has been passed, and LoA will be placed soon. *The 105 MW floating solar power plant at Erai Dam is in the re-tendering process.

(xxxiv)	A long term study of radioactivity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radioactivity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	<p>Complied</p> <p>CSTPS is regularly carrying out the radioactivity analysis & heavy metals analysis of Coal, fly ash & bottom ash from the Radio analytical laboratory BARC, Mumbai & M/s. Mahabal Enviro Engineers Pvt. Ltd. respectively. Please see (Annexure-XIV).</p>
(xxxv)	Fugitive emission shall be controlled to prevent impact on agricultural or non-agricultural land. In case of any proven damage to agricultural land/ crop, necessary compensation shall be paid by the PP.	<p>Complied</p> <p>CSTPS has provided rain guns in the coal stack yard, a water sprinkler at the wagon tippler, and a transfer point at the coal conveyor belt to control the fugitive dust emission. (Photograph attached) Please see (Annexure-XV).</p>
(xxxvi)	Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	<p>Complied</p> <p>Surface water sample is daily collected from plant premises as well as plant periphery & sample is analyzed from recognized laboratory. Report is attached Please see (Annexure-XVI).</p>
(xxxvii)	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with setting up / operation of the plant.	<p>Complied</p> <p>CSTPS has adopted “Zero Liquid Discharge Policy”, all effluent generated are treated in ETP. Treated effluent is reused for ash disposal to ash bund.</p>
(xxxviii)	No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control board and implementation done in close co-ordination with the state Pollution	<p>Complied</p> <p>No mine void filling is undertaken as an option for ash utilization; However, Ash is utilized for cement/brick manufacturing & road construction purpose.</p>

	control Board.	
(xxxix)	Green belt shall also be developed around the ash pond over and above the Green Belt around the plant boundary.	<p>Complied</p> <p>Green belt around ash pond: CSTPS planted 82500 plants in the year 2018-2020 around the ash bund area.</p> <p>CSTPS has carried out tree plantations in and around the power station. The area covered under the green belt is 49.50% of the open area.</p>
(xl)	CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.	<p>Being Complied</p>
(xli)	For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit Committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.	<p>Complied</p> <p>CSTPS has formed a CSR committee for proper and periodic monitoring of CSR activities which comprised of following members at corporate level:</p> <ul style="list-style-type: none"> • Chairman and Managing Director • Executive Directors • Directors • Chief Industry Relations Officer
(xlii)	An Environment Cell comprising of at least one expert in environmental science/ engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the plant who would be accountable for implementation of environmental regulations and social impact improvement/ mitigation measures.	<p>Complied</p> <p>A separate environment management cell with qualified staff is already formed at CSTPS for implementation of the stipulated Environmental regulations and social impact improvement/ mitigation measures.</p>
(xliii)	The project proponent shall formulate a well laid Corporate Environment Policy	<p>Complied</p>

	and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	CSTPS have established a separate ISO cell to ensuring adherence environment management system policy ISO 14001:2015 along with ISO 9001:2015, ISO 45001:2018 & ISO 15001:2018, under Integrated Management System. Please see (Annexure-XVII).
Conditions as per EC letter No. J- 13011/53/2008-IA.II (T) dated 15.06.2018		
i	Construction of pillars in the water bodies (Rivers & Nallahs) shall be carried out in the dry seasons only.	Complied Construction of pillars in the water bodies Erai river was carried out in the dry seasons & completed in 2020.
ii	Dust suppression system such as mist/dry fog jet sprinklers to be set up at the transfer points to arrest the fugitive dust emissions.	Complied The CSTPS has provided the following dust suppression/ dust extraction systems at both the end of the closed pipe conveyor belt system and are found to be operational. (Annexure-XVIII). Medium velocity spray system (MVSS) 1 .Equipment Belt Conveyor-1 (BC-1) Location- Tail end & Head end side 2. Equipment BC-2 Location- Tail end & Head end side 3. Equipment- Pipe conveyor Location- Tail end & Head end side 4. Equipment- BC-3 Location- Tail end & Head end side 5. Equipment- Apron feeder Location- Discharge chute High-velocity spray system (HVSS) Area - wagon loading system 1 . Wagon loading station-(WLS-1) 2. WLS-2 3. WLS-3
iii	For every tree cut along the proposed route in the non-forest area, guidelines of Forest (Conservation) Act, 1980 shall be followed in consultation with the local State Forest department.	Complied
iv	Noise level shall be in accordance with the Noise Pollution Rule.	Complied

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period from **January 2025 to June 2025**

MONTHLY AVERAGE AMBIENT AIR QUALITY MONITORING REPORT

Location	Parameters	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Location No.1 (Major Store Adm. Bldg.)	PM _{2.5} (µg/M ³) (60)	32.6	28.50	36.13	33.88	39.75	34.38
	PM ₁₀ (µg/M ³)(100)	84.5	83.63	87.88	82.25	87.13	70.75
	SO ₂ (µg/M ³)(80)	32.2	29.99	29.60	29.73	37.31	32.54
	NO _x (µg/M ³)(80)	39.1	36.83	39.13	38.23	44.29	41.04
	Ozone (µg/ M ³)(180)	BDL	BDL	BDL	BDL	BDL	BDL
	Lead (µg/M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	CO (mg/ M ³)(4.0)	1.07	1.04	1.03	0.91	0.92	0.93
	NH ₃ (µg/ M ³)(400)	31.5	30.50	30.75	31.50	30.50	28.50
	Benzene (µg/ M ³) (5.0)	BDL	BDL	BDL	BDL	BDL	BDL
	BaP (ng/ M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Arsenic (ng/ M ³)(6.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Nickel (ng/ M ³)(20.0)	BDL	BDL	BDL	BDL	BDL	BDL
Location No.2 (Colony E/M Office)	PM _{2.5} (µg/M ³) (60)	22.5	18.38	21.88	20.63	22.75	18.50
	PM ₁₀ (µg/M ³)(100)	62.4	63.50	66.25	58.50	64.25	45.38
	SO ₂ (µg/M ³)(80)	20.4	21.11	23.78	20.63	25.71	21.69
	NO _x (µg/M ³)(80)	28.3	25.23	29.13	30.70	34.06	29.01
	Ozone (µg/ M ³)(180)	BDL	BDL	BDL	BDL	BDL	BDL
	Lead (µg/M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	CO (mg/ M ³)(4.0)	0.80	0.74	0.66	0.56	0.62	0.63
	NH ₃ (µg/ M ³)(400)	26.3	26.38	26.50	23.75	23.50	23.50
	Benzene (µg/ M ³) (5.0)	BDL	BDL	BDL	BDL	BDL	BDL
	BaP (ng/ M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Arsenic (ng/ M ³)(6.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Nickel (ng/ M ³)(20.0)	BDL	BDL	BDL	BDL	BDL	BDL
Location No.3 (Chummary)	PM _{2.5} (µg/M ³) (60)	18.4	24.38	25.63	22.13	24.38	21.50
	PM ₁₀ (µg/M ³)(100)	61.4	71.00	72.50	67.75	66.75	63.13
	SO ₂ (µg/M ³)(80)	23.5	26.73	25.15	23.54	22.41	22.01
	NO _x (µg/M ³)(80)	32.8	31.50	31.95	32.13	29.05	27.29
	Ozone (µg/ M ³)(180)	BDL	BDL	BDL	BDL	BDL	BDL
	Lead (µg/M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	CO (mg/ M ³)(4.0)	0.99	0.93	1.05	0.79	0.77	0.79
	NH ₃ (µg/ M ³)(400)	30.4	28.50	29.50	28.75	27.63	23.50
	Benzene (µg/ M ³) (5.0)	BDL	BDL	BDL	BDL	BDL	BDL
	BaP (ng/ M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Arsenic (ng/ M ³)(6.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Nickel (ng/ M ³)(20.0)	BDL	BDL	BDL	BDL	BDL	BDL

Note: - ND = Not Detectable, BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period of **January 2025 to June 2025**

MONTHLY AVERAGE AMBIENT AIR QUALITY MONITORING REPORT

Location	Parameters	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
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Location No.4 (Railway Cabin U # 8 & 9.)	PM _{2.5} (µg/M ³) (60)	27.00	24.25	31.13	26.88	30.25	26.75
	PM ₁₀ (µg/M ³)(100)	78.50	77.38	83.00	79.88	78.00	65.75
	SO ₂ (µg/M ³)(80)	30.93	29.91	28.33	26.21	34.23	28.80
	NO _x (µg/M ³)(80)	45.54	33.60	37.50	36.09	38.40	36.86
	Ozone (µg/ M ³)(180)	BDL	BDL	BDL	BDL	BDL	BDL
	Lead (µg/M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	CO (mg/ M ³)(4.0)	0.88	0.86	0.83	0.62	0.68	0.77
	NH ₃ (µg/ M ³)(400)	29.50	29.00	28.75	28.75	27.50	25.50
	Benzene (µg/ M ³) (5.0)	BDL	BDL	BDL	BDL	BDL	BDL
	BaP (ng/ M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Arsenic (ng/ M ³)(6.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Nickel (ng/ M ³)(20.0)	BDL	BDL	BDL	BDL	BDL	BDL
Location No.5 (ETP U # 8 & 9)	PM _{2.5} (µg/M ³) (60)	33.50	33.00	35.50	36.25	34.50	29.88
	PM ₁₀ (µg/M ³)(100)	84.00	85.25	89.00	83.63	80.75	62.13
	SO ₂ (µg/M ³)(80)	35.05	32.69	33.11	33.33	32.51	31.56
	NO _x (µg/M ³)(80)	42.11	40.33	42.69	39.85	42.7	34.15
	Ozone (µg/ M ³)(180)	BDL	BDL	BDL	BDL	BDL	BDL
	Lead (µg/M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	CO (mg/ M ³)(4.0)	0.88	0.91	0.79	0.67	0.68	0.73
	NH ₃ (µg/ M ³)(400)	28.50	28.63	28.50	27.50	26.50	24.50
	Benzene (µg/ M ³) (5.0)	BDL	BDL	BDL	BDL	BDL	BDL
	BaP (ng/ M ³)(1.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Arsenic (ng/ M ³)(6.0)	BDL	BDL	BDL	BDL	BDL	BDL
	Nickel (ng/ M ³)(20.0)	BDL	BDL	BDL	BDL	BDL	BDL

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period of January 2025 to June 2025

MONTHLY AVERAGE FUGITIVE DUST EMISSION MONITORING REPORT

Location	Parameters	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Crusher	RSPM (µg/M ³)	135.00	141.00	144.00	141.50	141.00	149.50

CHP-A	House	SPM ($\mu\text{g}/\text{M}^3$)	149.00	155.50	162.50	162.00	159.50	175.00
		SO ₂ ($\mu\text{g}/\text{M}^3$)	24.20	25.35	25.85	28.10	26.30	26.45
		Nox ($\mu\text{g}/\text{M}^3$)	40.00	40.15	42.70	37.65	39.40	39.65
		RSPM ($\mu\text{g}/\text{M}^3$)	116.00	123.50	129.50	135.50	135.50	132.50
	L. T. Bunker	SPM ($\mu\text{g}/\text{M}^3$)	131.00	138.50	142.00	146.00	149.50	160.50
		SO ₂ ($\mu\text{g}/\text{M}^3$)	17.85	17.75	20.10	23.45	19.00	22.90
		Nox ($\mu\text{g}/\text{M}^3$)	27.85	29.00	33.85	33.30	31.95	33.10
		RSPM ($\mu\text{g}/\text{M}^3$)	110.50	122.50	125.00	121.50	128.50	129.00
	Wagon Tippler	SPM ($\mu\text{g}/\text{M}^3$)	121.50	133.00	136.00	135.00	162.50	150.50
		SO ₂ ($\mu\text{g}/\text{M}^3$)	16.65	17.05	18.50	20.05	22.70	22.55
		Nox ($\mu\text{g}/\text{M}^3$)	23.65	24.55	28.40	29.20	29.85	33.45
		RSPM ($\mu\text{g}/\text{M}^3$)	123.50	134.50	138.00	129.50	132.50	144.50
	Coal Stack Yard	SPM ($\mu\text{g}/\text{M}^3$)	135.50	148.50	152.50	152.00	155.50	168.50
		SO ₂ ($\mu\text{g}/\text{M}^3$)	20.95	24.35	24.50	24.05	22.05	28.90
		Nox ($\mu\text{g}/\text{M}^3$)	26.00	32.75	36.65	38.35	34.25	39.05
		RSPM ($\mu\text{g}/\text{M}^3$)	131.00	134.00	136.00	146.00	143.00	119.50
CHP-B	Crusher House	SPM ($\mu\text{g}/\text{M}^3$)	149.50	147.00	148.00	170.00	168.50	146.50
		SO ₂ ($\mu\text{g}/\text{M}^3$)	25.40	25.65	26.65	23.70	26.10	22.85
		Nox ($\mu\text{g}/\text{M}^3$)	39.25	39.50	39.95	38.85	38.70	33.75
		RSPM ($\mu\text{g}/\text{M}^3$)	130.00	132.50	134.50	135.50	136.50	122.00
	Coal Stack Yard	SPM ($\mu\text{g}/\text{M}^3$)	145.50	149.50	141.00	155.50	160.50	150.00
		SO ₂ ($\mu\text{g}/\text{M}^3$)	23.75	25.00	23.15	23.75	21.35	19.85
		Nox ($\mu\text{g}/\text{M}^3$)	42.00	38.70	36.55	35.55	35.85	27.45
		RSPM ($\mu\text{g}/\text{M}^3$)	119.50	124.00	119.00	135.50	138.00	115.00
	Wagon Tippler	SPM ($\mu\text{g}/\text{M}^3$)	135.00	144.50	142.00	153.00	162.50	129.00
		SO ₂ ($\mu\text{g}/\text{M}^3$)	18.85	20.05	19.00	21.30	21.90	20.30
		Nox ($\mu\text{g}/\text{M}^3$)	31.00	34.05	25.75	32.40	36.00	26.30
		RSPM ($\mu\text{g}/\text{M}^3$)	129.00	139.50	133.00	148.50	149.50	128.00
	T. P. - 103	SPM ($\mu\text{g}/\text{M}^3$)	144.50	149.00	149.50	167.00	179.00	145.00
		SO ₂ ($\mu\text{g}/\text{M}^3$)	23.15	25.85	23.10	24.20	25.00	24.10
		Nox ($\mu\text{g}/\text{M}^3$)	41.90	38.70	35.35	36.20	37.85	30.90
		RSPM ($\mu\text{g}/\text{M}^3$)	129.00	139.50	133.00	148.50	149.50	128.00

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period of **January 2025 to June 2025**

MONTHLY AVERAGE FUGITIVE DUST EMISSION MONITORING REPORT

Location		Parameters	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
	Wagon Tippler	RSPM ($\mu\text{g}/\text{M}^3$)	119.00	121.00	127.00	142.00	138.00	131.00
		SPM ($\mu\text{g}/\text{M}^3$)	131.00	135.00	141.00	163.00	152.00	149.00

CHP- D (U#8&9)		SO ₂ (µg/M ³)	18.20	19.50	20.10	22.80	20.40	21.40	
		Nox (µg/M ³)	32.70	27.20	30.50	32.90	31.70	33.30	
	T. P. - 105	RSPM (µg/M ³)	135.00	147.00	152.00	169.00	157.00	142.00	
		SPM (µg/M ³)	151.00	160.00	175.00	191.00	175.00	160.00	
		SO ₂ (µg/M ³)	21.80	23.10	24.50	26.70	27.30	28.50	
		Nox (µg/M ³)	37.60	42.30	43.70	45.20	42.10	37.20	
	Crusher House	RSPM (µg/M ³)	130.00	132.00	144.00	152.00	148.00	130.00	
		SPM (µg/M ³)	143.00	159.00	165.00	167.00	173.00	141.00	
		SO ₂ (µg/M ³)	22.50	23.10	20.70	21.50	27.10	22.20	
		Nox (µg/M ³)	39.10	42.70	33.10	34.20	38.50	31.50	
	T. P. - 107	RSPM (µg/M ³)	132.00	126.00	136.00	129.00	136.00	127.00	
		SPM (µg/M ³)	149.00	142.00	150.00	147.00	158.00	139.00	
		SO ₂ (µg/M ³)	22.70	25.30	23.40	19.40	22.40	19.70	
		Nox (µg/M ³)	40.30	38.40	42.50	28.30	33.20	25.30	
	Closed pipe conveyor belt	Bhatadi	RSPM (µg/M ³)	109.00	115.00	121.00	127.00	119.00	122.00
			SPM (µg/M ³)	125.00	133.00	137.00	139.00	125.00	137.00
SO ₂ (µg/M ³)			17.20	16.30	17.10	20.70	184.00	19.20	
Nox (µg/M ³)			26.10	27.50	23.20	26.20	22.30	26.40	
Padmapur		RSPM (µg/M ³)	118.00	121.00	127.00	131.00	114.00	132.00	
		SPM (µg/M ³)	130.00	135.00	142.00	145.00	128.00	144.00	
		SO ₂ (µg/M ³)	17.50	18.50	20.40	19.90	19.50	22.70	
		Nox (µg/M ³)	30.4	28.2	32.2	33.5	27.2	31.2	

Note :Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Nickel	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Ni
Iron	0.355	0.556	0.522	0.622	0.489	0.405	0.522	mg/L as Fe
Zinc	0.01	0.02	0.017	BQL	0.017	0.015	0.015	mg/L as Zn
Copper	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cu
Chromium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cr
Cadmium	BQL	0.037	BQL	BQL	BQL	BQL	BQL	mg/L as Cd
Manganese	0.044	BQL	BQL	0.046	BQL	BQL	BQL	mg/L as Mn
Arsenic	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as As
Mercury	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Hg
MICROBIOLOGICAL PARAMETERS								
Total Coliforms	6.9	3.6	5.1	6.9	5.1	9.2	5.1	MPN Index/ 100 ml
Escherichia coli	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	MPN Index/ 100 ml
Total Plate Count	40	37	34	36	38	45	35	CFU/ml

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

- Locations: - (1) Tadali (Borewell) (5) Morva (Borewell)
(2) Kachrala (BoreWell) (6) Gunjala (Well)
(3) New Cargaon No. 1 (Borewell) (7) Saiwan Ghodpeth (Borewell)
(4) New Chargaon No. 2 (Borewell Water)

**CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
GROUND WATER SAMPLE ANALYSIS REPORT
Samples collected on dated:- 02.01.2025 to 03.01.2025**

Sample numbers ->	8	9	10	11	12	13	14	UNIT
PHYSICAL PARAMETERS								
Colour	BQL	BQL	BQL	BQL	BQL	BQL	BQL	Hazen
Turbidity	0.3	0.4	0.3	0.3	0.3	1.3	0.9	NTU
PHYSICAL PARAMETER								
pH	7.3	7.8	7.6	7.8	7.8	8	7.2	
Total Dissolved Solids	1260	1392	1200	715	1545	762	133	mg/L
Total Suspended Solids	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Total Alkalinity	434	496	468	336	560	478	82	mg/L
Phenolphthalein Alkalinity	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as CaCO3
Total Hardness	624	710	600	406	596	484	90	mg/L as CaCO3
Carbonate Hardness	434	496	468	336	560	478	82	mg/L as CaCO3
Calcium	170	224	162	129	164	160	21.6	mg/L as Ca
Magnesium	48.6	36.5	47.6	20.4	45.2	20.4	8.8	mg/L as Mg
Sodium	169	148	136	85.5	314	66.3	8.7	mg/L as Na
Chlorides	310	292	227	65.5	230	64	12	mg/L as Cl
Sulphate	188	260	209	151	402	56.8	6	mg/L as SO4
Phosphate	0.098	0.116	0.115	0.125	0.612	0.166	BQL	mg/L as PO4
Ammonical Nitrogen	0.11	0.12	0.12	0.12	0.11	0.12	0.15	mg/L
Cyanide	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as CN
Fluorides	0.34	0.67	0.7	0.47	0.64	0.53	0.37	mg/L as F

Silica as SiO ₂	13.5	14.4	16.3	11.4	18.2	10.4	3.8	mg/L as SiO ₂
Phenolic Compound	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as C ₆ H ₆ OH
Free Ammonia	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
PROBABLE SALT CONCENTRATIONS								
Calcium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Calcium Sulphate	BQL	89	BQL	BQL	BQL	BQL	BQL	mg/L
Calcium Chloride	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Magnesium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Magnesium Sulphate	235	178	235	101	223	71	8	mg/L
Magnesium Chloride	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Sodium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Sodium Sulphate	BQL	BQL	BQL	104	330	BQL	BQL	mg/L
Sodium Chloride	430	375	346	108	378	105	20	mg/L
METALS / HEAVY METALS								
Lead as Pb	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Pb
Nickel as Ni	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Ni
Iron	0.287	0.304	0.388	0.455	0.455	0.371	0.157	mg/L as Fe
Zinc	0.01	0.012	0.012	0.05	0.025	0.025	BQL	mg/L as Zn
Copper	BQL	BQL	BQL	BQL	0.047	BQL	BQL	mg/L as Cu
Chromium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cr
Cadmium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cd
Manganese	BQL	BQL	BQL	BQL	BQL	BQL	0.022	mg/L as Mn
Arsenic	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as As
Mercury	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Hg
MICROBIOLOGICAL PARAMETERS								
Total Coliforms	6.9	5.1	6.9	3.6	5.1	5.1	12	MPN Index/ 100 ml
Escherichia coli	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	MPN Index/ 100 ml
Total Plate Count	33	36	39	38	41	33	44	CFU/ml

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Locations: - (8) Chhota Nagpur (BoreWell)

(12) Kawathi (Bore Well)

(9) Wichoda (BoreWell)

(13) Near Ash Bund Pump House (Borewell) (Gohane Farm)

(10) Padoli (Borewell)

(14) CSTPS One day Reservoir

(11) Tirwanja (Borewell)

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
GROUND WATER SAMPLE ANALYSIS REPORT

Samples collected on dated:- 08.04.2025 to 10.04.2025

Sample numbers ->	1	2	3	4	5	6	7	UNIT
PHYSICAL PARAMETERS								
Colour	BQL	BQL	BQL	BQL	BQL	BQL	BQL	Hazen
Turbidity	0.4	0.3	0.5	0.6	0.7	0.6	0.6	NTU
CHEMICAL PARAMETERS								
pH	7.5	7.4	7.2	7.5	7.4	7.7	7.3	
Total Dissolved Solids	608	760	1042	1600	581	661	710	mg/L
Total Suspended Solids	BQL	BQL	BQL	5	8	7	6	mg/L
Total Alkalinity	304	354	334	556	386	340	370	mg/L
Phenolphthalein Alkalinity	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as CaCO3
Total Hardness	382	394	502	460	296	348	416	mg/L as CaCO3
Carbonate Hardness	304	354	334	556	296	340	370	mg/L as CaCO3
Calcium	114	102	141	74.5	77.8	97.8	99.4	mg/L as Ca
Magnesium	23.8	34	36.5	66	24.8	25.3	40.8	mg/L as Mg
Sodium	62.6	120	177	395	90.2	92.3	81.2	mg/L as Na
Chlorides	66	90	306	396	34.5	50	109	mg/L as Cl
Sulphate	59.2	140	103	195	16	137	44.4	mg/L as SO4
Phosphate	0.272	0.088	0.389	0.114	0.065	0.091	0.077	mg/L as PO4
Ammoniacal Nitrogen	0.1	0.1	0.1	0.1	0.11	0.11	0.12	mg/L
Cyanide	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as CN
Fluorides	0.56	0.5	0.62	0.68	0.45	0.60	0.65	mg/L as F
Silica as SiO2	15.4	12.5	18.6	22.4	10.9	11.3	13.2	mg/L as SiO2
Phenolic Compound	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as C6H6OH
Free Ammonia	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
PROBABLE SALT CONCENTRATIONS								
Calcium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Calcium Sulphate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Calcium Chloride	BQL	BQL	20	BQL	BQL	BQL	BQL	mg/L
Magnesium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Magnesium Sulphate	74	168	128	244	20	125	55	mg/L
Magnesium Chloride	BQL	BQL	26	BQL	BQL	BQL	BQL	mg/L
Sodium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Sodium Sulphate	BQL	8	BQL	BQL	BQL	55	BQL	mg/L
Sodium Chloride	108	148	450	650	57	82	179	mg/L
METALS / HEAVY METALS								

Lead	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Pb
Nickel	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Ni
Iron	0.213	0.219	0.27	0.296	0.206	0.277	0.177	mg/L as Fe
Zinc	0.029	0.045	0.027	0.029	0.043	0.023	0.024	mg/L as Zn
Copper	BQL	BQL	BQL	0.013	BQL	BQL	BQL	mg/L as Cu
Chromium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cr
Cadmium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cd
Manganese	BQL	0.032	0.018	0.019	0.014	BQL	0.01	mg/L as Mn
Arsenic	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as As
Mercury	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Hg
MICROBIOLOGICAL PARAMETERS								
Total Coliforms	9.2	5.1	3.6	5.1	6.9	12	3.6	MPN Index/ 100 ml
Escherichia coli	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	MPN Index/ 100 ml
Total Plate Count	44	40	35	34	42	49	36	CFU/ml

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Locations: - (1) Tadali (Borewell)

(5) Morva (Borewell)

(2) Kachrala (BoreWell)

(6) Gunjala (Well)

(3) New Cargaon No. 1 (Borewell)

(7) Saiwan Ghodpeth (Borewell)

(4) New Chargaon No. 2 (Borewell Water)

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR GROUND WATER SAMPLE ANALYSIS REPORT BY

Samples collected on dated:- 08.04.2025 to 10.04.2025

Sample numbers ->	8	9	10	11	12	13	14	UNIT
PHYSICAL PARAMETERS								
Colour	BQL	BQL	BQL	BQL	BQL	BQL	BQL	Hazen
Turbidity	4.7	0.3	2.5	3.7	0.6	3.5	0.3	NTU
PHYSICAL PARAMETER								
pH	7.3	7.4	7.4	7.8	7.4	7.5	8.4	
Total Dissolved Solids	1080	1315	1058	604	1245	1440	265	mg/L
Total Suspended Solids	13	BQL	7	BQL	BQL	9	BQL	mg/L
Total Alkalinity	400	440	434	320	470	660	124	mg/L
Phenolphthalein Alkalinity	BQL	BQL	BQL	BQL	BQL	BQL	4	mg/L as CaCO ₃
Total Hardness	530	740	600	364	478	392	100	mg/L as CaCO ₃
Carbonate Hardness	400	440	434	320	470	392	100	mg/L as CaCO ₃
Calcium	144	196	171	114	126	117	26.5	mg/L as Ca
Magnesium	41.3	60.8	42.3	19.4	39.8	24.3	8.3	mg/L as Mg
Sodium	130	156	136	59.3	270	370	57.5	mg/L as Na
Chlorides	240	320	209	50	200	206	42	mg/L as Cl
Sulphate	140	165	137	71.1	239	238	20	mg/L as SO ₄
Phosphate	0.199	0.091	0.666	0.556	0.118	0.049	0.141	mg/L as PO ₄
Ammonical Nitrogen	0.1	0.1	0.1	0.1	0.1	0.1	0.1	mg/L
Cyanide	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as CN
Fluorides	0.65	0.67	0.59	0.38	0.34	0.65	0.45	mg/L as F
Silica as SiO ₂	16.5	17.5	18.6	11.5	13.5	21.7	6.32	mg/L as SiO ₂
Phenolic Compound	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as C ₆ H ₆ OH

Free Ammonia	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
PROBABLE SALT CONCENTRATIONS								
Calcium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Calcium Sulphate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Calcium Chloride	BQL	56	BQL	BQL	BQL	BQL	BQL	mg/L
Magnesium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Magnesium Sulphate	175	206	171	89	197	120	25	mg/L
Magnesium Chloride	23	57	BQL	BQL	BQL	BQL	BQL	mg/L
Sodium Carbonate	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L
Sodium Sulphate	BQL	BQL	BQL	BQL	121	210	BQL	mg/L
Sodium Chloride	331	397	343	82	329	338	69	mg/L
METALS / HEAVY METALS								
Lead	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Pb
Nickel	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Ni
Iron	0.52	0.332	0.151	0.402	0.114	0.324	0.096	mg/L as Fe
Zinc	0.08	0.052	0.02	0.057	BQL	0.085	BQL	mg/L as Zn
Copper	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cu
Chromium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cr
Cadmium	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Cd
Manganese	0.011	0.024	BQL	0.021	BQL	0.033	BQL	mg/L as Mn
Arsenic	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as As
Mercury	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/L as Hg
MICROBIOLOGICAL PARAMETERS								
Total Coliforms	3.6	6.9	9.2	6.9	6.9	6.9	9.2	MPN Index/ 100 ml
Escherichia coli	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	MPN Index/ 100 ml
Total Plate Count	31	38	42	40	37	36	42	CFU/ml

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Locations: - (8) Chhota Nagpur (BoreWell)

(12) Kawathi (Bore Well)

(9) Wichoda (BoreWell)

(13) Near Ash Bund Pump House (Borewell) (Gohane Farm)

(10) Padoli (Borewell)

(14) CSTPS One day Reservoir

(11) Tirwanja (Borewell)

**CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
SOIL SAMPLE ANALYSIS REPORT**

Samples collected on dated:- 02.01.2025 to 03.01.2025

Sample numbers ->	1	2	3	4	5	6	7	UNIT
PARAMETERS								
pH of 10% Suspension	8.10	8.30	8.30	7.70	8.50	8.20	8.30	
Physical Parameters								
Organic Content	0.729	0.467	1.60	0.267	0.998	0.868	0.630	%
Moisture content	14.30	5.74	23.0	3.70	18.50	4.00	16.50	%
Fixed Residue	85.02	93.79	75.37	96.04	80.51	95.06	82.91	%
Chemical Parameters								
Water Leachate								
Chlorides as Cl	88.60	88.50	106.00	53.10	124.00	71.00	88.60	mg/kg
Fluoride	7.22	10.90	7.58	7.71	8.50	5.95	6.85	mg/kg
Sulphate as SO4	56.00	67.50	69.00	53.60	54.10	57.30	59.30	mg/kg
Chemical Parameters (Acid Leachate)								
Lead as Pb	11.90	14.60	17.10	14.50	19.60	91.50	22.00	mg/kg
Copper as Cu	52.20	37.50	34.50	33.50	49.40	40.20	39.40	mg/kg
Nickel as Ni	47.30	24.80	25.80	38.80	69.10	34.10	47.00	mg/kg
Chromium as Cr	56.80	41.10	32.30	39.30	51.40	36.70	47.30	mg/kg
Zinc as Zn	42.40	45.00	32.4	24.60	62.70	25.9	42.50	mg/kg
Cadmium as Cd	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/kg
Iron as Fe	35812.00	36210.00	18837.00	35959.00	21394.00	18465.00	22432.00	mg/kg
Specific Parameters								
Water retaining capacity	64.00	63.50	62.90	96.40	61.60	63.3	58.80	%
Kjeldahl Nitrogen as N	627.00	793.0	529.0	837	1004.00	655.00	947.00	%
Total Phosphate as PO4	273.0	279.0	219.00	398.0	446.0	366.0	491.0	%
Ion Exchange Capacity								
Calcium as Ca	30.00	36.00	24.80	30.40	25.50	33.20	27.20	m eq/100gm
Magnesium as Mg	8.89	10.00	3.60	6.40	5.20	4.80	4.80	m eq/100gm
Sodium as Na	0.191	0.429	0.219	0.364	0.279	0.225	0.794	m eq/100gm
Potassium as K	0.349	0.579	0.805	0.385	0.668	0.526	0.258	m eq/100gm

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Soil samples collected from: -

- 1.Tadali (near Railway line)
- 2.Kachrala
- 3 Chargaon No.1
- 4.Dataala Pump House

- 5.Morwa
6. Gunjala
7. Ghodpeth Saivan

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
SOIL SAMPLE ANALYSIS REPORT

Samples collected on dated:- 02.01.2025 to 03.01.2025

Sample numbers ->	8	9	10	11	12	13	14	UNIT
PARAMETERS								
pH of 10% Suspension	8.30	8.10	8.00	8.20	8.30	8.10	7.30	
Physical Parameters								
Organic Content	0.962	0.932	0.933	0.73	0.36	0.87	2.69	%
Moisture content	9.98	15.60	3.51	10.00	11.20	10.10	19.70	%
Fixed Residue	89.06	83.50	95.56	89.24	88.43	89.06	93.26	%
Chemical Parameters								
Water Leachate								
Chlorides as Cl	106.00	106.00	53.10	124.00	106.00	71.00	88.60	mg/kg
Fluorides	7.50	5.10	7.65	7.32	8.71	6.10	7.86	mg/kg
Sulphate as SO4	53.60	60.00	78.50	69.30	52.60	59.60	60.00	mg/kg
Chemical Parameters (Acid Leachate)								
Lead as Pb	14.60	24.50	11.90	9.30	17.10	11.90	22.20	mg/kg
Copper as Cu	51.00	48.80	41.00	46.80	42.70	27.80	35.20	mg/kg
Nickel as Ni	31.00	51.60	37.60	46.00	34.30	34.20	48.50	mg/kg
Chromium as Cr	39.60	41.90	34.00	41.20	39.60	34.10	39.50	mg/kg
Zinc as Zn	27.00	35.70	39.40	39.80	49.60	30.40	74.40	mg/kg
Cadmium as Cd	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/kg
Iron as Fe	35291.00	33025.0	34439.00	24013.00	39338.00	36754.00	24908.00	mg/kg
Specific Parameters								
Water retaining capacity	66.4	60.1	64.2	62.2	64.0	63.50	61.9	%
Kjeldahl Nitrogen as N	715.0	893.0	599.0	921.0	740.0	625	922.0	%
Total Phosphate as PO4	387.0	295.0	336.0	500.0	359.0	334.0	386.0	%
Ion Exchange Capacity								
Calcium as Ca	26.80	33.60	26.70	26.80	31.60	29.20	27.60	m eq/100gm
Magnesium as Mg	6.80	5.20	8.80	9.20	5.60	8.40	10.80	m eq/100gm
Sodium as Na	1.260	0.258	0.217	0.405	1.450	0.485	0.252	m eq/100gm
Potassium as K	0.579	0.325	0.439	0.219	0.569	0.229	0.470	m eq/100gm

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

8. Chotta Nagpur

9. Wichoda

10. Padoli

11. Tirwanja

12. Kawathi

13. Ash bund area (Outside of Recycling Pump House)

14. CSTPS (Tulas Bagh)

**CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
SOIL SAMPLE ANALYSIS REPORT**

Samples collected on dated:- 08.04.2025 to 09.04.2025

Sample numbers ->	1	2	3	4	5	6	7	UNIT
PARAMETERS								
pH of 10% Suspension	7.60	8.10	8.00	6.80	8.80	7.20	7.20	
Physical Parameters								
Organic Content	1.720	0.833	0.898	0.756	0.577	0.798	0.828	%
Moisture content	5.24	2.02	3.50	1.04	2.85	1.36	5.63	%
Fixed Residue	90.62	97.13	95.60	98.21	96.6	98	94	%
Chemical Parameters								
Water Leachate								
Chlorides as Cl	89	71	89	70.9	283	71	124	mg/kg
Fluorides	5.61	5.70	4.86	6.12	6.60	6.44	4.25	mg/kg
Sulphate as SO ₄	61.6	120	46	42.50	45.2	48.90	117.00	mg/kg
Chemical Parameters (Acid Leachate)								
Lead as Pb	15.00	8.50	17.00	15.00	10.7	12.80	15.0	mg/kg
Copper as Cu	80.9	29.8	25.6	22.30	20.6	15.6	31.5	mg/kg
Nickel as Ni	49.60	32.10	29.40	26.80	32.1	26.7	41.5	mg/kg
Chromium as Cr	31.60	28.20	24.70	20.50	20.9	26.4	30.7	mg/kg
Zinc as Zn	75.40	26.40	33.5	30.60	32.0	28.7	35.5	mg/kg
Cadmium as Cd	BQL	BQL	BQL	BQL	2	BQL	BQL	mg/kg
Iron as Fe	40202	39344	18972	26043	32063	22098	24698	mg/kg
Specific Parameters								
Water retaining capacity	68.42	62.50	69.80	71.98	72.41	70.28	69.10	%
Kjeldahl Nitrogen as N	586	709	642	1001	403	503	601	%
Total Phosphate as PO ₄	395	422	344	367	304	234	366	%
Ion Exchange Capacity								
Calcium as Ca	39.58	36.38	27.58	11.60	25.58	31.17	33.99	m eq/100gm
Magnesium as Mg	11.99	11.09	8.790	2.39	15.19	10.00	4.40	m eq/100gm
Sodium as Na	0.545	0.950	0.699	0.525	6.690	0.669	0.86	m eq/100gm
Potassium as K	0.355	1.32	0.530	0.258	0.420	0.33	0.45	m eq/100gm

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Soil samples collected from: -

- | | |
|------------------------------|--------------------|
| 1.Tadali (near Railway line) | 5.Morwa |
| 2.Kachrala | 6. Gunjala |
| 3 Chargaon No.1 | 7. Ghodpeth Saivan |
| 4.Dataal Pump House | |

**CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
SOIL SAMPLE ANALYSIS REPORT**

Samples collected on dated:- 08.04.2025 to 09.04.2025

Sample numbers ->	8	9	10	11	12	13	14	UNIT
PARAMETERS								
pH of 10% Suspension	7.20	6.90	7.00	7.70	8.30	7.20	8.00	
Physical Parameters								
Organic Content	0.4	2.17	0.35	1.76	0.58	0.61	2.520	%
Moisture content	3.2	3.82	0.93	3.9	4.45	6.0	16.35	%
Fixed Residue	96.39	94.01	98.7	94.3	94.97	93.4	81.13	%
Chemical Parameters								
Water Leachate								
Chlorides as Cl	70.90	39	35	142.00	195.00	88.60	53.20	mg/kg
Fluorides	6.08	9.3	9	6.94	7.72	8.18	7.16	mg/kg
Sulphate as SO4	38.6	170	134	49.50	188.00	39.70	31.00	mg/kg
Chemical Parameters (Acid Leachate)								
Lead as Pb	8.5	12.80	17.0	10.7	15.00	12.80	8.5	mg/kg
Copper as Cu	24.0	26.40	19.7	30.6	34.8	24.8	84.2	mg/kg
Nickel as Ni	44.1	38.8	25.3	45.4	52.2	53.5	36.1	mg/kg
Chromium as Cr	21.4	18.7	15.3	26.4	40.9	23.8	27.2	mg/kg
Zinc as Zn	26.8	29.3	33.5	29.1	39.1	29.6	44.6	mg/kg
Cadmium as Cd	BQL	BQL	BQL	BQL	BQL	BQL	BQL	mg/kg
Iron as Fe	19344	34997	33108	22884	26614	33456	26180	mg/kg
Specific Parameters								
Water retaining capacity	68.7	70.5	72.4	69.8	65.0	68.25	66.3	%
Kjeldahl Nitrogen as N	1020.0	908	943	803	992	853	1056	%
Total Phosphate as PO4	270.0	536	518	534	327	182	571	%
Ion Exchange Capacity								
Calcium as Ca	26.40	25.99	11.99	26.79	31.19	20.39	23.60	m eq/100gm
Magnesium as Mg	3.59	5.20	8.81	10.00	5.99	2.00	14.39	m eq/100gm
Sodium as Na	1.280	0.425	1.690	0.635	5.050	0.330	1.380	m eq/100gm
Potassium as K	0.380	1.560	0.460	0.630	0.615	0.170	0.885	m eq/100gm

Note: - BQL=Below Quantification Limit.

Analysis carried out by MOEF&CC recognized laboratory i.e. M/s. Mahabal Enviro Engineers Pvt Ltd.

Soil samples collected from: -

8. Chotta Nagpur

9. Wichoda

10. Padoli

11. Tirwanja

12. Kawathi

13. Ash bund area (Outside of Recycling Pump House)

14. CSTPS (Tulas Bagh)

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period of **January 2025 to June 2025**

MONTHLY AVERAGE EFFLUENT WATER ANALYSIS REPORT

Month	Location of Samples	Except pH, all parameters are in mg/liters											
		pH	S. S.	O&G	DO	BOD	COD	Phosphate	Free Cl ₂	Copper	Iron	Zinc	Chromium
Jan-25	Ash bund weir well discharge	8.9	BQL	BQL	6.70	7.70	24	0.200	BQL	BQL	0.361	0.022	BQL
	C. T. Pond B/D	8.0	BQL	BQL	6.4	7.70	24	0.094	BQL	BQL	0.583	BQL	BQL
	Boiler B/D	8.1	BQL	BQL	—	2.20	8	0.161	BQL	BQL	0.181	BQL	BQL
	STP Effluent	6.9	16	BQL	6.2	8.7	28	0.245	BQL	0.435	—	BQL	BQL
Feb-25	Ash bund weir well discharge	7.2	13	BQL	3.4	19	60	BQL	BQL	0.403	BQL	BQL	1.38
	C. T. Pond B/D	8.4	14	BQL	5.3	9.7	33	BQL	BQL	0.394	0.125	BQL	—
	Boiler B/D	8.3	BQL	BQL	—	1.9	9	BQL	BQL	0.085	BQL	BQL	—
	STP Effluent	7.1	10	BQL	5.4	11	36	0.98	BQL	BQL	0.025	BQL	7.1
Mar-25	Ash bund weir well discharge	7.20	9	BQL	5.40	12	42	0.571	BQL	BQL	0.167	BQL	BQL
	C. T. Pond B/D	8.0	9.00	BQL	5.7	8.9	30	0.396	BQL	BQL	0.115	BQL	BQL
	Boiler B/D	9.10	BQL	BQL	—	2.70	9	0.073	BQL	BQL	0.116	BQL	BQL
	STP Effluent	7.0	8	BQL	6.6	6.8	24	0.940	BQL	BQL	BQL	BQL	7.0
April-25	Ash bund weir well discharge	7.7	9	BQL	6.3	4.7	16	0.023	BQL	BQL	0.309	0.037	BQL
	C. T. Pond B/D	9.2	12	BQL	6.1	12	39	0.088	BQL	BQL	0.348	BQL	BQL
	Boiler B/D	8.8	BQL	BQL	—	4.1	14	0.164	BQL	BQL	BQL	BQL	BQL
	STP Effluent	7.6	BQL	BQL	5.6	10	35	0.445	BQL	BQL	0.023	BQL	7.6
May-25	Ash bund weir well discharge	7.60	6	BQL	5.50	6.80	24	0.051	BQL	BQL	1.370	BQL	BQL
	C. T. Pond B/D	7.30	BQL	BQL	6.2	5.30	20	1.080	BQL	0.01	0.333	0.073	BQL
	Boiler B/D	7.10	BQL	BQL	—	1.90	7	0.076	BQL	BQL	0.083	BQL	BQL
	STP Effluent	7.2	28	BQL	5.3	14	44	0.671	BQL	BQL	0.053	BQL	7.2
June-25	Ash bund weir well discharge	7.9	6	BQL	5.7	11	34	0.288	BQL	BQL	0.594	0.038	BQL
	C. T. Pond B/D	8.3	BQL	BQL	6.1	9.4	33	1.16	BQL	BQL	0.123	0.044	BQL
	Boiler B/D	8.8	BQL	BQL	—	3.9	12	0.086	BQL	BQL	0.077	BQL	BQL
	STP Effluent	7.4	9	BQL	5.1	23	72	0.485	BQL	BQL	BQL	BQL	7.4

Note: - BQL=Below Quantification Limit.

Analysis carried out by the MOEF&CC recognized laboratory i.e., M/s. Mahabal Enviro Engineers Pvt Ltd.

CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.
 For the period of **January 2025 to June 2025**
NOISE LEVEL MONITORING OF CSTPS, CHANDRAPUR

Month	Location													
	Time office-I		Time office-II		Power station gate		Major store		E/M colony office		Padmapur conveyor pipe		Bhatadi conveyor pipe	
	Day (75dBA)	Night (70 dBA)	Day (75 dBA)	Night (70 dBA)	Day (75 dBA)	Night (70 dBA)	Day (75 dBA)	Night (70 dBA)	Day (75 dBA)	Night (70 dBA)	Day (75 dBA)	Night (70 dBA)	Day (75 dBA)	Night (70 dBA)
Jan-25	69.9	67.1	69.6	67.8	68.5	66.7	70.7	68.3	49.2	44.3	71.4	68.5	72	68.7
Feb-25	68.3	65.7	69.1	67.5	69.5	67.6	70.2	68.1	50.6	43.5	71.6	68.9	71.4	68.5
Mar-25	68.9	65.2	68.5	66.0	69.2	67.3	70.8	68.5	50.2	43.3	71.3	67.5	71.6	67.3
Apr-25	68.3	65.6	68.7	66.2	68.8	66.1	70.3	67.6	50.5	43.9	71.5	68.3	71.7	68.8
May-25	68.9	65.2	68.3	66.1	67.3	65.7	70.7	67.4	50.2	44.2	71.2	68.4	71.5	68.5
Jun-25	68.3	65.5	68.8	66.4	68.1	65.9	70.2	67.5	51.5	43.9	71.5	68.3	71.2	68.1

Analysis carried out by the MOEF&CC recognized laboratory, i.e., M/s. Mahabal Enviro Engineers Pvt Ltd.



MAHAGENCO
Maharashtra State Power Generation Company Limited
CIN: U40100MH2005SGC153648

(A GOVERNMENT OF MAHARASHTRA UNDERTAKING)

CHANDRAPUR SUPER THERMAL POWER STATION
MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED
(ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018)
Office of: Chief Engineer, C.S.T.P.S. Urjenagar, Chandrapur - 442404
Phone: 07172 - 220155 to 220159 Fax: 07172 - 220203
Email: cegenchandrapur@mahagenco.in

CHN/ENV & COAL

0 0 3 1 3 0

Date:

21 SEP 2024

To,
The Regional Officer,
Maharashtra Pollution Control Board,
Udyog Bhavan, First Floor,
Station Road, Chandrapur 442 401.

Subject: - Submission of yearly plantation statement.

Ref: Consent No: - Format 1.0/ CAC / UAN No. 0000094701/CR-2009000282 dated 07.09.2020

Dear Sir,

Please find below the yearly plantation statement for the year 2023-24 (till date) in respect of **Chandrapur Super Thermal Power Station, Chandrapur**. This is as per the consent to operate condition.

S. N	Particulars	Details	Remarks
1	Total factory area	11237.05 Hectare	Total No. of trees cannot be measured due to roaming of wild animals. The area of plantation is too large also dense due to vegetation. CSTPS has requested to MSRAC, Nagpur regarding details of plantation & area covered under plantation, report awaited from the MRSAC, Nagpur.
2	Open Space Available	1117 Hectare	
3	Total trees planted up 15 th September 2024.	1326391 Nos.(Including 10000 bamboo plants)	
4	No. of Trees surviving	80-90%	
5	Cumulative area of plantation	552.88 Hectare	
6	Land area covered under plantation	49.50 % (Statutory required 33%)	

Thanking You.

Yours faithfully

[Signature]
Chief Engineer
CSTPS, Chandrapur

Copy s.w.rs.to:

The Executive Director (E&S), MSPGCL, Mumbai.

Copy f.w.cs.to:

The Sub- Regional Officer, MPCB, Chandrapur.

[Signature]
30/9/24
Regional Officer
M.P.C. Board,
Chandrapur



MAHAGENCO
Maharashtra State Power Generation Co. Ltd.
CIN: U40100MH2005SGC153648

(A GOVERNMENT OF MAHARASHTRA UNDERTAKING)

CHANDRAPUR SUPER THERMAL POWER STATION
MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED
(ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018)
Office of: Chief Engineer, C.S.T.P.S. Urjanagar, Chandrapur - 442404
Phone: 07172 - 220155 to 220159 Fax: 07172 - 220203
Email: cegenchandrapur@mahagenco.in

CHN/Env & Coal

000905

Date: 15 APR 2024

To,
The Director,
Wildlife Institute of India
Post Box # 18, Chandrabani
Dehradun 248 001

Email:- dwii@wii.gov.in

Subject: - Regarding Assessment of Impacts of CSTPS & WCL mines located adjacent to Tadoba-Andhari Tiger Reserve (TATR) on Wildlife and preparation of Management Plan-**thereof**

Ref.:- 1) This office letter No.002709 dated 25.10.2023
2) Letter from PCCF (WL), Nagpur No.1700/2020-21 dated 06.11.2020
3) This office SAP Purchase Order on WII No. 4500112033 dated 05.11.2020
4) Letter from PCCF (WL), Nagpur No.2917/2019-20 dated 05.11.2019
5) Visit of CSIR-NEERI, CSTPS & WCL officials at TATR area on dated 24.10.2019
6) Meeting held at CSIR-NEERI, Nagpur on dated 19.10.2019
7) Letter from CGM (E&S), MSPGCL No.10857 dated 11.10.2019

Dear Sir,

With reference to the subject matter & directives from MoEF&CC, Govt. of India, CSTPS Chandrapur has issued SAP Purchase Order dated 05.11.2020 to Wildlife Institute of India vide letter cited at reference 3 above regarding the study of Assessment of Impacts of CSTPS & WCL mines located adjacent to Tadoba-Andhari Tiger Reserve (TATR) on Wildlife.


However, it is observed that the work needs to expedite to achieve the milestones decided in the modalities/work order.

Further, it is to inform that as per invoices submitted by CSIR-NEERI & WII time to time, this office has made the payments accordingly.

In view of above, it is requested to arrange to look into the matter for the successful completion of the study & submission of final report thereof to the appropriate authorities on top priority please.

Thanking you

Yours faithfully

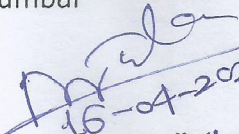

Chief Engineer
CSTPS, Chandrapur

Copy s.w.rs.to:-

- 1) The District Collector, Chandrapur
- 2) The Principal Chief Conservator of Forest (Wild Life), Nagpur
- 3) The Director (Op), MSPGCL, Mumbai
- 4) The Joint Director(APC), MPCB Mumbai
- 5) The Executive Director (O&M-II/E&S) MSPGCL Mumbai

Copy f w.cs.to:-

- 1) The Regional Officer, MPCB Chandrapur
- 2) Dr. Rajesh Biniwale, CSIR-NEERI, Nagpur
- 3) Dr. Billal Habib, WII Dehradun
- 4) The Gen. Manager (Env), WCL HQ Nagpur
- 5) The Supdt. Chemist-I, MSPGCL, Mumbai


16-4-2024
Maharashtra Pollution Control Board
Regional office
Udyog Bhavan 1st Floor Station Road
Chandrapur-442401



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

(An Autonomous Institute under Ministry of Environment, Forest & Climate Change, Govt. of India)
पत्रबोटी सं/Post Box No. 18, चंदबनी, देहरादून/Chandrabani, Dehradun - 248001, उत्तराखण्ड, भारत /Uttarakhand, INDIA



File No. WII/AE&CB/BH/WL/Minning/Fno.136/2019-01

Dehradun, 20th September, 2024

To

Chief Engineer
Chandrapur Super Thermal Power Station
Chandrapur – 442 404
Email- cegenchandrapur@mahagenco.in

Sub: Clarification and Resubmission of the progress reports for the project titled "Impact assessment of coal mines & thermal power plant on Tadoba Andhari Tiger Reserve Chandrapur" and invoice for the release of 3rd installment- reg.

Ref.

1. CHN/Coal & Env Cell/ 003046 dt. 10.09.2024
2. No. 102/630/2024 dt. 05.06.2024

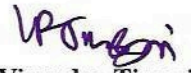
This is in response to the letter reference above regarding the progress report submission for the project titled " Impact Assessment of Coal Mines & Thermal Power Plant on Tadoba Andhari Tiger Reserve Chandrapur."

We would like to clarify that the earlier communication was specific to the report prepared under the project title, "Understanding the impacts of mining areas of Western Coal Field Limited (WCL) and Chandrapur thermal power plant, Chandrapur on native wildlife." Moving forward, we will ensure that all future correspondence and reports adhere to the project title as per your records to avoid any discrepancies.

Regarding the documents requested, the invoice for the 3rd installment is attached. The Principal Chief Conservator of Forests (Wildlife), Maharashtra, has sent a letter (ref no. 2) to your office regarding the extension of the project until August 2025 and the release of the 3rd installment of the amount of Rs. 33.0975 Lakhs.

For your convenience, we are resubmitting the progress report along with the invoice for the 3rd installment. Please let us know if any further clarification is required.

Thanking You.


(Virendra Tiwari)
Director
20/9/24

Encls.

1. Assessment of Forest Fragmentation and the Extent of Linear Infrastructure In and around Mining Areas of Western Coalfields Limited and Chandrapur Super Thermal Power Station between 1999 and 2020.
2. Wildlife Across Mining Sites of Western Coalfield Limited and Chandrapur Super Thermal Power Plant.
3. Original Invoice.

Copy to:

1. The Principal Chief Conservator of Forests (Wildlife), Chief Wildlife Warden Maharashtra State, Nagpur, Van Bhawan, Ramgiri Road, Civil Lines, NAGPUR- 440 001 (Maharashtra), E-mail: pccfwingp@mahaforest.gov.in
2. The chief Conservator of Forest (Territorial) Chandrapur. Email: ccfchandrapur@gmail.com
3. The Conservator of Forest and Field Director Tadoba Andhari Tiger Reserve. Email: ccftadoba@mahaforest.gov.in

Coal transportation by railway wagon with tarpaulin covering



Coal transportation by truck wagon with tarpaulin covering



Coal transportation by truck wagon with tarpaulin covering



Water sprinkling on coal transporting belt



ESP:



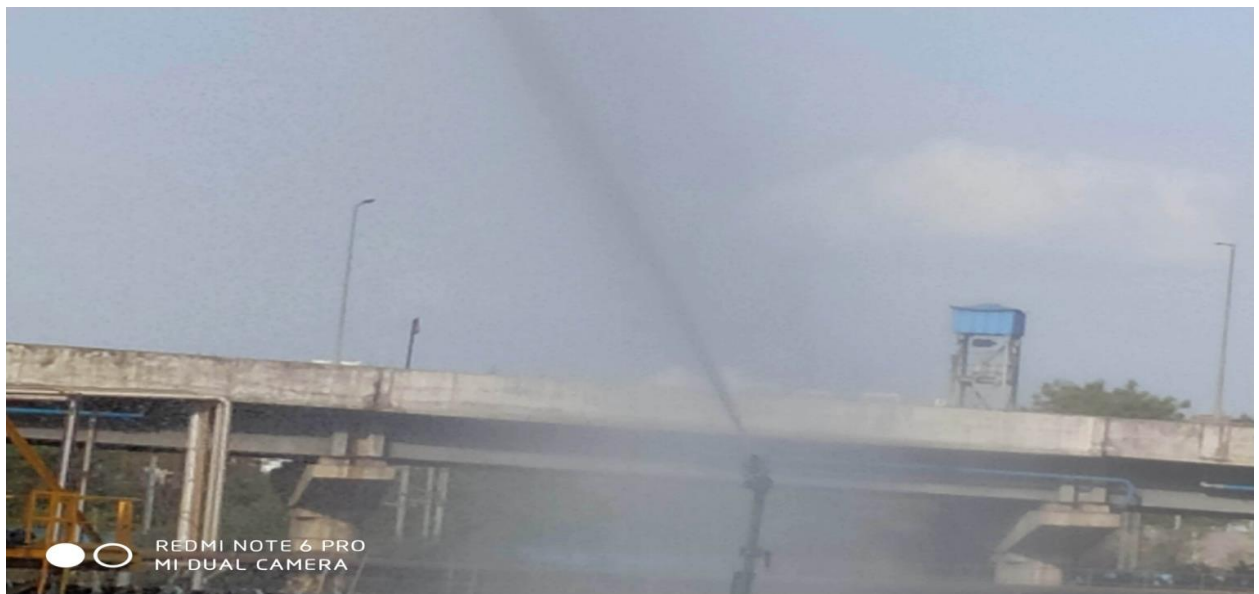
Ammonia Flue Gas Conditioning System (AFGCS)



Water Sprinkler at Coal Conveyor belt:



Rain guns at Coal Stack yard:



Mobile Fogger:



Dust Extraction System at CHP:






CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.For the period of **January 2025 to June 2025****ASH UTILIZATION OF CSTPS, CHANDRAPUR**

Ash Utilization Purpose	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	TOTAL (MT)
Ash Generated (MT)	354003	284839	388680	355839	352694	323625	2059679
For Blending with Cement (ACC, Ambuja, Manikgarh & Ultratech)	137237	112586	148691	143628	140705	127327	810173
Bricks	17677	21727	54780	42335	32830	0	169349
Agriculture	0	0	0	0	0	0	0
Road / Bridge Construction	106575	66955	30917	0	0	0	204447
Land filling	3277	1160	3345	5760	3960	0	17502
Other	0	0	0	0	0	21363	21363
Ash Utilization (MT)	264766	202428	237733	191723	177495	152540	1226684
% Ash Utilisation	74.79	71.07	61.16	53.88	50.33	47.13	59.56

NOTE: ACC Cement Chandrapur, Ultratech Cement Chandrapur, Ambuja Cement Chandrapur, and Manikgarh Cement Chandrapur have lifted Ash with the arrangement made by them from ESP Hoppers.

CHANDRAPUR SUPER THERMAL POWER STATION		
CSTPS	DISASTER MANAGEMENT PLAN	DMP
	PREFACE (UPGRADATION)	Rev. No. : 08
		Date : 05/03/2019
		Page : 1 of 151
<p>With the increasing demand of electricity; more capacity addition is eminent to fulfil the gap. It is also to be noted that more emphasis is given to workman safety and minimum tolerance for pollution; as statutory norms and its enforcement are getting more stringent.</p> <p>To meet the above target, more advanced technologies with higher generation capacity units are adopted, to fulfil the demand as well compliance of statutory norms.</p> <p>But bigger generation capacity units, calls for increases consequence of any accident to multi folds. Also increasing usage of various chemicals, few are toxic; may lead to any severe accident, if proper care is not taken. Even after taking all necessary precautions to prevent any miss-happenings, it is also to be kept in mind, a practical solution for handling any emergency; if it arises.</p> <p>Electricity has become the utmost necessity in civil life. A sudden mass failure of electricity has the ability to stall a nation's economic activity in a whole or its part thereof. Bringing back to normalcy is a time & effort consuming activity. Northern Grid failure on 31st July, 2012 and subsequent Eastern Grid and North-Eastern Grid failure as the Domino Effect; which stalled the activities of about 22 States and Union Territories, affecting 600 million people; a vivid example. Crisis Management Plan is an afterthought to avert such situation.</p> <p>The Disaster & Crisis Management Plan for Chandrapur Super Thermal Power Station is upgraded to guide our officials and employees for effective handling of any disastrous or crisis situation, with minimum injury and loss of human life, minimum damage to plant and machinery and minimum period for restoration to normalcy.</p>		
		
<p>Jayant H. Bobde Occupier / Chief Engineer (Gen O&M) Chandrapur Super Thermal Power Station</p>		

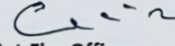
MAHARASHTRA STATE POWER GENERATION CO. LTD.
Chandrapur Super Thermal Power Station
Fire Service Section

TITLE :- Live trial of Medium Velocity Water Spray System Installed for MTFA - 210 MW.							FF: 9328
SECTION : FIRE SERVICE							REV. No. : 01
PERMIT NO: 1083							DATE :-08/03/2003
							DATE: June - 2024
							PAGE No. : 01
Sr. no	Location	DV.NO	DV inlet Valve	DV Outlet Valve	Drain valve	Test Valve	Remark
1	FO - V	XX	OK	N/A	N/A	N/A	Live Trial has been taken found satisfactory
2	FO - II	XX	OK	OK	N/A	N/A	Live Trial has been taken found satisfactory
3	FO - III	XX	OK	N/A	N/A	N/A	Live Trial has been taken found satisfactory
4	FO- VI	XX	OK	N/A	N/A	N/A	Live Trial has been taken found satisfactory
5	FO - I	XX	OK	OK	N/A	N/A	Live Trial has been taken found satisfactory
6	FO - IV	XX	OK	OK	N/A	N/A	Live Trial has been taken found satisfactory
7	LDO - II	XX	OK	OK	N/A	N/A	Live Trial has been taken found satisfactory
8	LDO - I	XX	OK	OK	N/A	N/A	Live Trial has been taken found satisfactory

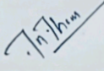
Live Trial Taken in presence o 1) Shri.M. A. Shaikh - Tech. - III (OS - I)

Trial taken Manually by Fire Fighting Staff


Jr. Fire Officer


Ast. Fire Officer


Fire Officer


Dy. Chief Fire Officer

CSTPS

PREVENTIVE MAINTENANCE

MSPGCL

TITLE :- FOAM CHAMBER SYSTEM CHECKING AND TESTING OF MTFA-210MW OIL TANK												FF	:9330		
SECTION :- FIRE SERVICE, CSTPS Chandrapur												PERMIT NO.:- 916		R.E.V.NO. :-	01
MONTH OF TESTING :- June -2024														DATE :-	08/03/2003
														PAGE NO. :-	1
Sr No.	Tank	Date	Permit No.	Foam Chamber No.	Water Inlet Valve	Foam Compound Inlet Valve	Inline Inductor	Foam Chamber	Vapour Seal	Wing Nut	Aeration Point	Remark			
1	FO-1 /(MTFA)	12.06.2024	916	-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
2	FO-2 /(MTFA)	10.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
3	FO-3 /(MTFA)	10.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
4	FO-4 /(MTFA)	14.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
5	FO-5 /(MTFA)	12.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
6	FO-6 /(MTFA)	12.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
7	LDO-1 /(MTFA)	14.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			
8	LDO-2 /(MTFA)	14.06.2024		-	OK	OK	OK	OK	OK	OK	OK	System Found OK			

Wing Nut Replaced :-

Vapour Seal Repalced :-

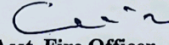
Foam Consumption :- 80 ltr.

Maintenance Team-


- 1 Shri. P. W. Kore JrFo
- 2 Shri. R. P. Ughade Dcfo

Live Trial Taken in presence of : Shri. M. A Sheikh - Tech-III


 Jr. Fire Officer


 Asst. Fire Officer


 Fire Officer


 Section Head





HINDUSTAN PETROLEUM CORPORATION LIMITED
(A Government of India Enterprise)
QUALITY CONTROL LABORATORY
VISAKHA NEW WHITE OIL TERMINAL
HP PETRO PARK, PORT CONNECTIVITY ROAD
VISAKHAPATNAM - 530014, ANDHRA PRADESH



LABORATORY TEST REPORT

Product	0980000 (HP FUEL (FURNACE OIL))	Test Report Number	1992242500511
Loc/ Customer/ Supplier	3718 (NBOT-BONDED TANKS-PSD)	Sample Number	890000346020
Source of the Sample	BOT TK-208	Lab Sr. No	BFT-387
Tank No.	208 (Tank for FO (A/G)	ULR Number	
Type of the Sample	ALL LEVEL	Date of Sampling	01.08.2024 09:30:00
Number/Quantity of Sample	1*3 L	Date of Receipt of Sample	01.08.2024
Batch No.	FO180/PL/HPC/HTVZB/208/101	Date(s) of Sample Testing	01.08.2024 To 02.08.2024
Stock Represented	4,000.000 KL	Date of Issue of the Report	02.08.2024 09:34:33
Test Required	BATCH FORMATION TEST (TEST B)	Sample Drawn By	GANPATI
Sampling Plan/Method	IS 1447	Seal No.	Wooden Box Seal
Reason for Testing	A/R THRU DEDICATED PL (REF - MKTG)		Aluminium Box Seal

S.No	Characteristics	UOM	Test Method	Specifications	Result
1	DENSITY AT 15°C	kg/m ³	IS 1448 P.16	TO REPORT	951.4
2	DENSITY AT 15°C, TOP	kg/m ³	IS 1448 P.16	TO REPORT	951.4
3	DENSITY AT 15°C, MIDDLE	kg/m ³	IS 1448 P.16	TO REPORT	951.4
4	DENSITY AT 15°C, BOTTOM	kg/m ³	IS 1448 P.16	TO REPORT	951.4
5	FLASH POINT, PMCC	°C	IS 1448 P.21	MIN 66.0	87.5
6	KINEMATIC VISCOSITY AT 50°C	cSt	IS 1448 P.25 SEC 1	125.0000 - 180.0000	167.7
7	WATER CONTENT	% v/v	IS 1448 P.40	MAX 1.00	0.10
8	SULPHUR, TOTAL	% m/m	ISO 8754	MAX 4.000	1.849
9	SEDIMENT	% m/m	IS 1448 P.30	MAX 0.25	0.10
10	POUR POINT	°C	IS 1448 P.10 SEC 2	TO REPORT	-8

Remarks: The Sample meets IS 1593:2018 THIRD REVISION in the above tested parameters only.



HINDUSTAN PETROLEUM CORPORATION LIMITED
(A Government of India Enterprise)
QUALITY CONTROL LABORATORY
VISAKHA NEW WHITE OIL TERMINAL
HP PETRO PARK, PORT CONNECTIVITY ROAD
VISAKHAPATNAM - 530014, ANDHRA PRADESH
LABORATORY TEST REPORT



Product	0984000 (HP INDUSTRIAL DIESEL OIL)	Test Report Number	1992242500596
Loc/ Customer/ Supplier	3718 (NBOT-BONDED TANKS-PSD)	Sample Number	890000414229
Source of the Sample	TERMINAL TANK NO. 104	Lab Sr. No	BFT-442
Tank No.	104 (STORAGE TK 104)	ULR Number	
Type of the Sample	TOP MIDDLE BOTTOM	Date of Sampling	20.08.2024 09:00:00
Number/Quantity of Sample	3*3 L	Date of Receipt of Sample	20.08.2024
Batch No.	LDO/PL/HPC/HTVZB/104/25	Date(s) of Sample Testing	20.08.2024 To 20.08.2024
Stock Represented	2,400.000 KL	Date of Issue of the Report	20.08.2024 19:32:11
Test Required	BATCH FORMATION TEST (TEST B)	Sample Drawn By	RAMAKRISHNA
Sampling Plan/Method	IS 1447	Seal No.	Wooden Box Seal Aluminium Box Seal
Reason for Testing	A/R THRU DEDICATED PL (REF - MKTG)		

S.No	Characteristics	UOM	Test Method	Specifications	Result
1	DENSITY AT 15°C	kg/m ³	IS 1448 P.16	TO REPORT	874.2
2	DENSITY AT 15°C, TOP	kg/m ³	IS 1448 P.16	TO REPORT	874.0
3	DENSITY AT 15°C, MIDDLE	kg/m ³	IS 1448 P.16	TO REPORT	874.1
4	DENSITY AT 15°C, BOTTOM	kg/m ³	IS 1448 P.16	TO REPORT	874.2
5	FLASH POINT, PMCC	°C	IS 1448 P.21	MIN 66.0	98.0
6	KINEMATIC VISCOSITY AT 40°C	cSt	IS 1448 P-25 SEC 1	2 5000 - 15.0000	5.112
7	TOTAL SULPHUR	% m/m	ASTM D4294	MAX 1.500	0.264
8	WATER CONTENT	% v/v	IS 1448 P.40	MAX 0.25	0.10
9	POUR POINT, SUMMER	°C	IS 1448 P-10 SEC 2	MAX 21	0

Remarks : The Sample meets IS 15770:2021 FIRST REVISION in the above tested parameters only.

GROUND LEVEL CONCENTRATION STUDY REPORT (MARCH 2025)

At

Chandrapur Super Thermal Power Station



Prepared By



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1. Introduction

With two units of 210 MW each and five units of 500 MW each Chandrapur Super Thermal Power Station (CSTPS) has the highest capacity of 2920 MW power generation among several power stations of Maharashtra State Power Generation Co. Ltd. CSTPS has reached its present capacity during period May 1984 to March 1998.

CSTPS is located at about 6 Km from the township of Chandrapur. Its north latitude is 19° 57' to 20° 0' and east longitude is 79° 15' to 79° 20'. It is covered by toposhit no. 56M/1 – 14455 P/4-12 published by Survey of India.

Chandrapur is mineral rich district with a dense forest spread over 41.5% of total land. Based on available minerals and abundant water, industries have been set up within and in the surrounding of Chandrapur. CSTPS is located over relatively plain terrain between rivers Erai and Wardha. General slope is township SW from NE. Durgapur, Padmapur, Bhatadi and other coal mines are located towards east of CSTPS and also North-East side. Padmapur & Durgapur are of significance since huge overburden dumps are visible. The mined coal is supplied to Chandrapur Super Thermal Power Station. It has coal linkage to Durgapur open cast coal mine. Coal is transported to CSTPS by rail and aerial ropeway. Urban environmental concerns in the district are air pollution due to coal burning industries and auto-exhaust. Municipal solid waste, bio-medical waste, untreated domestic sewage and also the urban sanitation area other issues of concern.

Topographical feature of core-buffer zones (5Km to 25 Km radius) are given in the **Table 1.1**.

Table 1.1: Topographical feature of core buffer zones

<p>Area 5 Km</p>	<p>Villages Surface Drains Others</p>	<p>: Durgapur, -Ranvendli, Govindapur, Devai, Padholi, Neri, Kodi, Chandsurla, Mhasala, Shinala etc. : Ranvendli, Motghat, Erai river, Nagpur-Chadrapur : Coal mines at Durgapur</p>
<p>10 Km</p>	<p>Villages Drains Others Features</p>	<p>: Payali, Matah, Tikhlia, Nagpur, Mokha Khutala, Patholi, Kosara, Chora, Devada, Datala, Babupeth (Chadrapur) : As above 5 Km, Erai dam : Railway and roadway-Nagpur-Chandrapur Road</p>
<p>25 Km</p>	<p>Villages Drains Others Features</p>	<p>: Ballarshah, Visapur, Bhivakund, Nandgaon, Huigtala, Bhadrati, Shevni, Marda, Dhamara, Kurla, Jevza, Itapur, Pelora, Nirli, Govapur, Sonoli, Vidsi, Modi, Pipri, Mahaakuli, Anturla, Sindur, Narpala, Wadhri, Savarala, Themur, Sengaon, Tadali, Sakharwahi, Kudara, Ghodpeth, Chargaon, Saivan, Gujala, Avada, Kachrata, Chavandla, Nunara, Ghodmivat, Chincholi, Wadgaon, Savri, Pardi, Devada, Khadala, Chorgaow, limbala, Mamal, Waygaon, etc. : As above and Wardha River : In addition to above Ballarpur Paper Mills Ltd. and number of coal mines exist within this area.</p>

Chandrapur super thermal power station burns large amount of coal every year which results in generation of ash. This ash is collected as bottom ash and some is arrested by electrostatic precipitator (ESP). The remaining ash escapes through stacks.

Coal burned results in the production of carbon monoxide, particulates, sulphur dioxide, hydrocarbons and oxides of nitrogen. All these pollutants of varying composition are thrown into the atmosphere in the form of gases. Thus the combustion of coal, which forms the major operations in power generation, results in the emissions that comprises of these pollutants in the form of flue gases.

Whenever any concentrated gases are released in to the atmosphere, they mix with air and get diluted. The prevailing winds transport the gases and disperse, thus diluting and reducing the concentration. The ground level concentration of a location is the concentration of particular pollutants at that location. The amount of concentration at a site is cumulative of the stack and other indicated sources. These sources include traffic on the highway and agricultural fields.

2. PROPERTIES OF THE POLLUTANTS

The emissions from the stack are composed of particulates, sulphur dioxide and oxides of nitrogen. The emission contain hydrocarbon & carbon monoxide which arise due to the incomplete combustion of petroleum products. The plant under consideration i.e. CSTPS uses furnace oil only for the initial firing of a boiler and hence emissions such as hydrocarbons are not of much concern.

The particulate matter has physical characteristics like size, mode of formation, setting characteristics and optical properties. They also possess chemical characteristics of organic nature and biological properties as well. Emissions from CSTPS stacks comprises of finally divided non-combustible particles in the flue gas after the combustion of coal. Inherent minerals and metallic substances in coal are normally expected in stack emissions. Once emitted, they will settle depending upon their sizes and tendency for agglomeration.

Optical quality of stack emissions in CSTPS is due to scattering of light. Particles of sizes 0.38 to 0.76 μm diameter would affect the visibility.

2.1 PARTICULATE MATTER:

"Particulate matter," also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulphates), organic chemicals, metals, and soil or dust particles. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.

Particle pollution includes "inhalable coarse particles," with diameters larger than 2.5 micrometers and smaller than 10 micrometers and "fine particles," with diameters that are 2.5 micrometers and smaller. How small is 2.5 micrometers? Think about a single hair from your head. The average human hair is about 70 micrometers in diameter – making it 30 times larger than the largest fine particle. These particles come in many sizes and shapes and can be made up of hundreds of different chemicals. Some particles, known as primary particles are emitted directly from a source, such as power plant, industries, construction sites, coal handling, unpaved roads, fields, smokestacks or fires. Others form in complicated reactions in the atmosphere of chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industries and automobiles. These particles, known as secondary particles, make up most of the fine particle pollution in the country.

The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream.

Exposure to such particles can affect both your lungs and your heart. Small particles of concern include "inhalable coarse particles" (such as those found near roadways and dusty industries), which are larger than 2.5 micrometers and smaller than 10 micrometers in diameter; and "fine particles" (such as those found in smoke and haze), which are 2.5 micrometers in diameter and smaller.

The Air Act requires EPA to set air quality standards to protect both public health and the public welfare (e.g. visibility, crops and vegetation). Particle pollution affects both.

2.1.1 Health Effects:

Particle pollution - especially fine particles - contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

- premature death in people with heart or lung disease,
- nonfatal heart attacks,
- irregular heartbeat,
- aggravated asthma,
- decreased lung function, and
- Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

People with heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure. However, even if you are healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution.

2.1.2 Environmental Effects:

Visibility impairment

Fine particles (PM_{2.5}) are the main cause of reduced visibility (haze) in parts of the environment, including many of our treasured national parks and wilderness areas.

Environmental damage

Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

Aesthetic damage

Particle pollution can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

2.2 SULPHUR DIOXIDES:

Sulphur dioxide (SO₂) is one of a group of highly reactive gasses known as “oxides of sulphur.” The largest sources of SO₂ emissions are from fossil fuel combustion at power plants (73%) and other industrial facilities (20%). Smaller sources of SO₂ emissions include industrial processes such as extracting metal from ore, and the burning of high sulphur containing fuels by locomotives, large ships, and non-road equipment. SO₂ is linked with a number of adverse effects on the respiratory system.

Current scientific evidence links short-term exposures to SO₂, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.)

Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.

National Ambient Air Quality Standard for SO₂ is designed to protect against exposure to the entire group of sulphur oxides (SO_x). SO₂ is the component of greatest concern and is used as the indicator for the larger group of gaseous sulphur oxides (SO_x). Other gaseous sulphur oxides (e.g. SO₃) are found in the atmosphere at concentrations much lower than SO₂.

Emissions that lead to high concentrations of SO₂ generally also lead to the formation of other SO_x. Control measures that reduce SO₂ can generally be expected to reduce people’s exposures to all gaseous SO_x. This may have the important co-benefit of reducing the formation of fine sulphate particles, which pose significant public health threats.

SO_x can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

As alone the SPM emission is hazardous but the effect of SPM together with Sulphur dioxide has more significance e.g. 200 $\mu\text{g}/\text{m}^3$ of SO_2 (24 hr average) will impair the health of the workers which intern will increase absenteeism. Normally, hairs in the nose remove all SPM over 10 μm . If the sizes vary from 2 to 10 μm then particles are carried from wind pipes to mouth from where they are swallowed. This cause suffocation and aggravation of asthma and chronic bronchitis. This leads to a condition known as “pneumoconiosis”.

2.3 NITROGEN DIOXIDES:

Nitrogen dioxide (NO_2) is one of a group of highly reactive gasses known as "oxides of nitrogen," or "nitrogen oxides (NO_x)." Other nitrogen oxides include nitrous acid and nitric acid. National Ambient Air Quality Standard uses NO_2 as the indicator for the larger group of nitrogen oxides. NO_2 forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone, and fine particle pollution, NO_2 is linked with a number of adverse effects on the respiratory system.

Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma.

NO_2 concentrations in vehicles and near roadways are appreciably higher than those measured at monitors in the current network. In fact, in-vehicle concentrations can be 2-3 times higher than measured at nearby area-wide monitors. Near-roadway (within about 50 meters) concentrations of NO_2 have been measured to be approximately 30 to 100% higher than concentrations away from roadways.

NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma asthmatics, children, and the elderly

The sum of nitric oxide (NO) and NO_2 is commonly called nitrogen oxides or NO_x . Other oxides of nitrogen including nitrous acid and nitric acid are part of the nitrogen oxide family. NO_2 is the component of greatest interest and the indicator for the larger group of nitrogen oxides.

NO_x react with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

Ozone is formed when NO_x and volatile organic compounds react in the presence of heat and sunlight. Children, the elderly, people with lung diseases such as asthma, and people who work or exercise outside are at risk for adverse effects from ozone. These include reduction in lung function and increased respiratory symptoms as well as respiratory-related emergency department visits, hospital admissions, and possibly premature deaths.

Emissions that lead to the formation of NO₂ generally also lead to the formation of other NO_x. Emissions control measures leading to reductions in NO₂ can generally be expected to reduce population exposures to all gaseous NO_x. This may have the important co-benefit of reducing the formation of ozone and fine particles both of which pose significant public health threats.

Table 2.3: Characteristics of some important air pollutants and their effects on human beings and animals

Pollutant	Characteristics	Effects
Particulate matter	Solid particle or liquid droplets including fumes, smoke, dusts. Solid particulate can absorb various chemicals.	Respiratory diseases, toxicity from metallic dusts, silicosis and asbestosis from the specific dusts. Damage of DNA in the lungs.
Oxides of Sulphur (SO _x)	SO _x comprise of SO ₂ (97-99%) & SO ₃ (1-3%). It is colourless, heavy & water soluble gas. Rapidly diffusing, acid forming oxidizing agent. Reacts with water forming sulphuric acid.	Absorbs quickly and irritates the upper respiratory tract. The sulphuric acid formed lowers pH. Leads to bronchial spasms breathlessness and increased susceptibility for infection. Irritation of throat and eyes.
Oxides of Nitrogen (NO _x)	NO _x comprises of NO, NO ₂ & N ₂ O. NO is colourless and slightly soluble in water. NO ₂ can travel in the respiratory systems. It is also involved in the formation of Ozone in the atmosphere.	Forms bonds with haemoglobin and reduce the efficiency of oxygen transport. Respiratory irritation, headache, impairment of lungs, loss of appetite and corrosion of teeth.

3. AIR QUALITY MANAGEMENT

Environmental concerns for large scale of operation of CSTPS make it mandatory to monitor the pollution from power plant on regular basis. Three pollutants are being monitored to meet the statutory requirement of MPCB namely SPM, SO₂ and NO_x. There are two methods for measurement of SPM viz. (i) Settle able particulates by dust fall and (ii) suspended particulates by high volume sampler.

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As far as air pollution is concerned, CSTPS is having a very sound air quality management which believes in keeping the atmosphere free from any hazardous emissions from their site. MPCB have laid down limits for the stack emission monitoring at CSTPS of 100 mg/Nm³ for SPM. Whereas, ambient air quality standards prescribed for various zones are given in **Table 3.1**.

To keep a check on the emissions, CSTPS undertaken a routine monitoring of the stacks. They are maintaining monthly reports on all the data regarding the amount of pollutants emitted from the stack.

Regular surveillance is being carried out by CSTPS and records so generated have been used in this report to find out the relation between meteorology and natural purification factors like temperature, lapse rate, stability, pressure, wind speed, direction humidity etc.

Table 3.1: The National Ambient Air Quality Standards (2009) for 24 Hrs Avg

Pollutants	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
		Industrial, Residential, Rural and other Areas	Ecologically, Sensitive Area (Notified by Central Government)	
Sulphur Dioxide (SO₂), µg/m³	Annual * 24 Hours **	5 0 8 0	2 0 8 0	- Improved West and Gaeke Method - Ultra violet Fluorescence
Nitrogen Dioxide (NO₂), µg/m³	Annual * 24 Hours **	40 80	3 0 8 0	- Jacob & Hochheiser modified (NaOH-NaAsO ₂) Method - Gas Phase Chemiluminescence
Particulate Matter (Size less than 10µm) or PM₁₀, µg/m³	Annual * 24 Hours **	6 0 1 0 0	6 0 1 0 0	- Gravimetric - TEOM - Beta attenuation
Particulate Matter (Size less than 2.5 µm) or PM_{2.5}, µg/m³	Annual * 24 Hours **	40 60	40 60	- Gravimetric - TEOM - Beta attenuation
<p>*Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals. **24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98 % of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.</p> <p>NOTE: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigations.</p>				

Vehicular Emissions:

The total road length in Chandrapur District is 7059 kms, road length within the municipal areas is about 730 kms. As per latest information given by RTO on different types of vehicles (August 2024), there are 635623 vehicles in Chandrapur districts. MSRTC is running the public transport in the district within a fleet of 1048 buses of which approximately 817 buses are in use on a daily basis. The contribution of these buses in the vehicular emissions in Chandrapur has not been estimated so far based on modified emission factors and the conditions of buses.

The survey conducted by RTO Chandrapur in August-2024 on the traffic load at major roads in the districts. A 24 hr traffic survey carried out on different roads indicated that about 1635 - 1850 vehicles ply on Nagpur-Chandrapur and 480 - 550 vehicles ply on Chandrapur - Tadoba roads per hours. These two routes closely touch the Chandrapur Super Thermal Power Station by two sides. About 1600-1800 vehicles ply in an hour in Chandrapur city. The main pollutants from automobile exhaust are particulate matter, hydrocarbons, carbon monoxide, NO_x and some amount of SO₂.

Coal Handling:

There are several coal deposits on Nagpur-Chandrapur highway. These depots are responsible for the generation of the large coal dust emissions leading to deterioration of air quality due to suspended particulate matter in these areas. On major store gate side of power station, there is a slum area and small villages dependent on the coal as a fuel for their cooking such as Padoli, Durgapur, Lakhmapur etc. The families living in these areas are dependent on coal as a fuel for their cooking.

The coal is easily available in Chandrapur and its surrounding villages as the coal mines are covered this large area. It is generally observed that this coal is used as cheap alternative to the other fuel sources. It is mainly used in the villages nearer the coal mines and also in the slum areas for cooking and for water heating purposes. It is reported that a household using coal uses approximately 7 to 8 kgs per house of coal for domestic purposes. Further it is regularly used by hotels and dhabas on Nagpur-Chandrapur road. This burning

of hard coal is major source of air emission. This is one of the important reason for the appearance of a smog-blanket in Durgapur area and in all the villages where coal is cheaply available. The emissions from these activities contribute significantly to the local air pollution and resulting into health problems.

4. FACTORS AFFECTING GROUND LEVEL CONCENTRATIONS

The main factors governing the Ground Level Concentration of a location is the meteorological condition prevailing in and around CSTPS. Climatically Chandrapur is the hottest place in Maharashtra. Atmosphere is dump and humid / sultry. The average minimum and maximum temperature in September 2024 is 28.0°C and 36.0°C respectively. Summer season is between middle of March to Middle of June. SW monsoon is the major rain water source and February is cold. The wind direction which is the important aspects as far as GLC is concerned is mainly between North - East and South-East. In summer the winds are basically concentrated between South – East to North - East directions with the intensity being light to moderate with some increase in speed. During the monsoon season winds are mostly in South – West direction. The winter season is from December to February. In winter, the winds are basically concentrated between South - East to North - East directions

Wind and temperature play a major role in dispersion of air pollutants. Generally temperature decreases with height, the rate of such decrease of temperature is about 6 °C to 10 °C per Km at the adiabatic lapse rate at a given point may be less than 6 °C per Km or inverted. For some times of the day or nights, especially during the colder months of December, January & February in India, the air tends to stagnate.

In fact relatively stable layers of air occur at laps rates (less than 2°C per Km). These layers become increasingly stable and finally full inversion condition is attained. As far as central part of India is concerned, the inversion/stable layers extending from ground level at 100 meters to 300 meters or so are considered important for air pollution point of view. Keeping in view the effect of inversion the stack for the some industrial and Thermal Power Plant are required to be design to overcome the pollution problem.

The inversion phenomenon in India is rather favourable. The inversion do not last more than a few hrs. at a time and thus the build-up pollutant concentration is not very intense. As far as Chandrapur area concerned the inversion layers are experienced in winter on some occasions but normally the sky is clear and emissions disperse over wide range. The thick layers of inversion are normally observed within the range of 200 meter and small percentage of inversion extends beyond 600 meters.

Inversion data collected in the past at Chandrapur meteorological station. The diffusion profile of the stack emission mainly depends on the stability of the atmosphere. The condition around the stack at CSTPS experiences a super-adiabatic lapse rate particularly in summer. In such a situation the atmosphere is set to be in an unstable equilibrium. It is under such condition when the pollutants are rapidly dispersed due to considerable vertical mixing of air. At this point the mentioned regarding plume behaviour is inevitable. When super-adiabatic lapse rate occurs “looping plumes” are observed resulting in bringing high concentration of plume gases to the ground for short period.

When inversion persists then dispersion of pollutants is at minimum and a “fanning” plume can be seen at Chandrapur during cloudy days in the downwind direction. If inversions were too frequent at Chandrapur then increasing the stack heights would be justified. Low GLC values are possible if the inversion conditions exist below the stack heights, resulting in “lofting” plume. Such a plume has minimal downward mixing and pollutants are dispersed downwind without any significant GLC.

“Fumigating” plume at Chandrapur will occur only in winter in the early hours at the time when morning sun breaks up radiation inversion. This accounts for high GLC during relatively short periods in the morning. A plume can be trapped if inversion layer prevail above and below the stack.

The climatic condition around CSTPS is predominantly clear with light winds blowing from south-west to north-west in summer. This condition ensures good dispersion of the pollutants released from the stacks.

PURPOSE OF PRESENT WORK:

The main purpose of this study is to forecast the ground level concentration of the pollutants including SPM, SO₂ and NO_x emitted from CSTPS in the area surrounding the power station. The study will give a clear idea about the relation between the emission from the stacks and their impact on the surrounding region.

Climate:

The Climate of this region can be classified as tropical hot climate with high range of temperature throughout the year primarily, there two prominent seasons in the district – The very hot summer and moderate winter. The summer months are very hot and prolonged while winter is short and mild. The monsoon season starts immediately after summer till late September. The southwest monsoon brings lot of rainfall during rainy season and there is no draught prone area in this district.

The temperature starts Increasing from the month of March. The daily mean temperature starts rising from the month of February and May is the peak summer month when mean maximum temperature goes up to 48^o C and minimum temperature is 32 ^oC to 36^oC. In severe hot conditions temperature raises up to 48^oC. However temperature starts reducing after May due to onset of monsoon, which last from June to September when it is hot and humid. The maximum temperature recorded in the month of May 2024 is 48.0 ^oC and minimum temperature is 36.0 ^oC.

The average annual rainfall is about 158.00 mm. The rainfall recorded during the month of June, July, August, September and October 2024 are 215.3 mm, 1008.40 mm, 355.60 mm, 150.60 mm and 97.00 mm respectively. Average numbers of rainy days is 75 to 90 throughout the region. The relative humidity was very high during Rainy season, it was up to 74 %. The average maximum Humidity recorded in the month of July 2024 was 74.0 %.

Ground Level Concentration Study Report

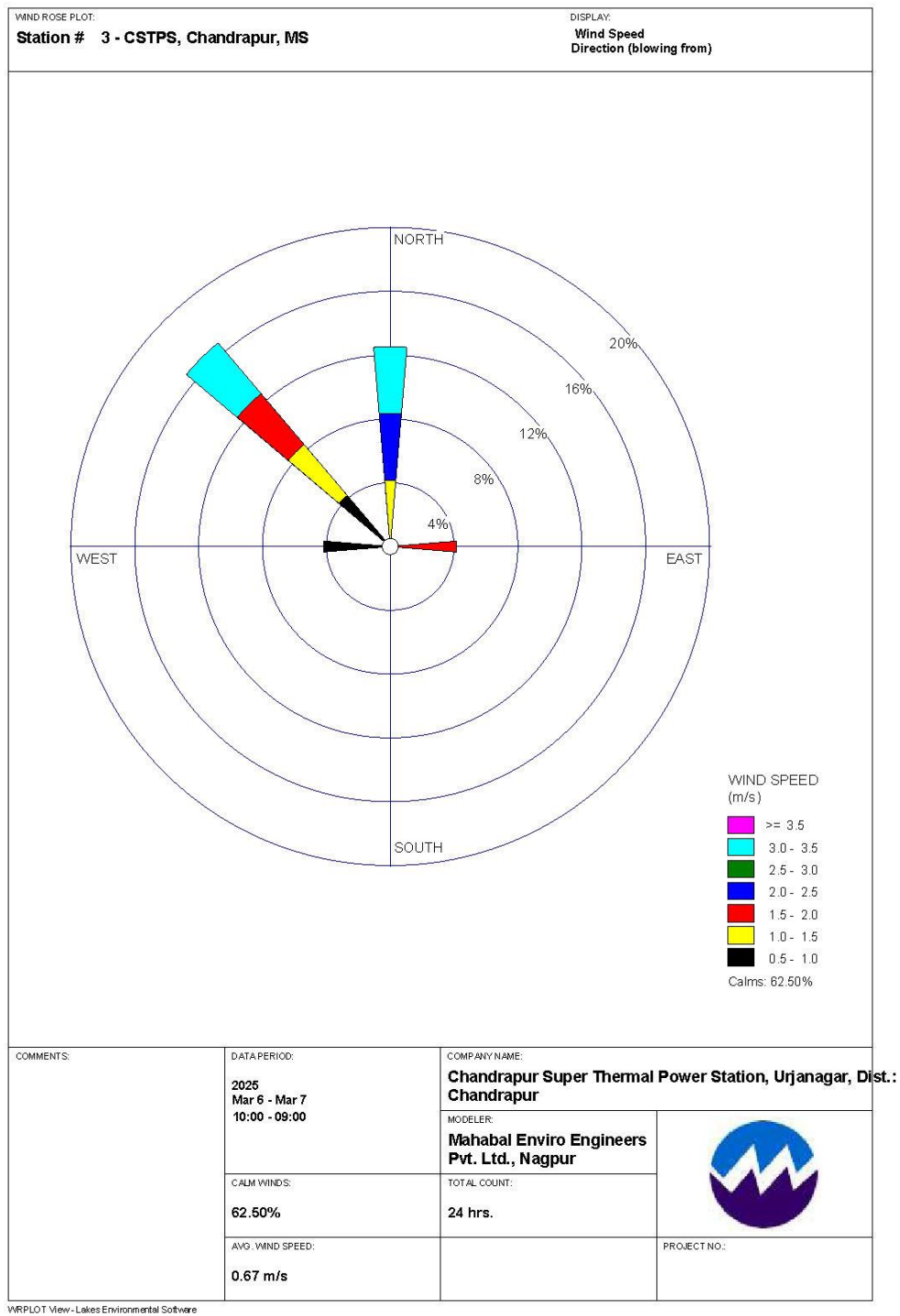


Fig.4.1: Wind Rose Diagram at CSTPS

ESTIMATION OF GLC

Major pollution loads from CSTPS are due to gaseous & particulate emissions. Impacts of these would be respectively on air, water bodies and the soil. Magnitude and significance of these impacts depend on the chemical nature of these pollutants.

Air pollutants released from stationery, mobile as fugitive sources within CSTPS area are transported due to atmospheric dispersion process. Stack emissions and fugitive emissions have more significance than mobile sources at CSTPS. Pollutants from these sources will be dispersed into atmosphere. Dispersion depends on stack emission parameters like flue gas composition, quantity, temperature, velocity and metrological conditions viz. ambient temperature & wind speed, severity of impact on receptor depends on the concentration of pollutant, its duration and nature of receptors.

Wind is the primary atmospheric transport mechanism. Wind pattern varies with season and atmospheric condition. Wind speed varies with height which is known as 'wind shears'. Wind shear within CHP which is at ground level is different than that at stack height. Hence dispersion pattern of SPM from ground and elevated sources would be different due to varying wind shears at stack heights of units 3 - 9 at CSTPS.

Atmospheric stability is related to the rise and falling volumes of air. It is a function of temperature gradient, atmospheric turbulence, wind speed, isolation etc. Thermal gradient varies with location of the industry and the gradient indicates the actual region of the atmosphere where emissions from stacks and ambient parameters intermingle. This is confined to mixing layer. Mixing layer is at that height or regions of the atmosphere which is capped by warm air layer which would inhibit any movement past it in the upward direction. Height of mixing layer in a region affects the dispersion process.

5. ESTIMATION OF GLC AT DOWN WIND DISTANCE

In order to assess the anticipated ground level concentration of various pollutants namely SPM, SO₂ and NO_x, efforts have been made to work out the concentration, using appropriate atmospheric dispersion models. The model used in the study is ISCST3 from US EPA and it has been widely accepted and validated for Indian conditions.

Forecasting requires information on maximum mixing depth (MMD). This is estimated by plotting maximum surface temperature and drawing a line parallel to the dry adiabatic temperature to the point at which the line intersects the ambient lapse rate for early morning period.

5.1. Dispersion Modeling

Dispersion of pollutants have been estimated using USEPA's dispersion model namely Industrial Source Complex (ISCST3) Dispersion Model. The geography and setting of co-ordinates are taken by assigning origin (0.0) at stack number 1. The settings are detailed in **Fig 5.1** showing aerial view of CSTPS. Meteorological data was collected and used for modeling. Stack emissions in terms of mg/Nm³ and stack dimensions were obtained from CSTPS. ISCST3 model was run using rural terrain and since height of all stacks are much above the buildings around downwash has not been considered for the purpose of GLC calculations. The details of stacks considered in the modeling are shown in **Table 5.1** and emissions of SO₂, NO_x and SPM are reported in **Table 5.2**. The ground level concentration has been predicted in the radius of 10 km. The results obtained using ISCST3 for 24 hr average concentrations at various locations are reported in **Table 5.3, 5.4 and 5.5** for SO₂, NO_x and SPM respectively. The angles in first column of **Table 5.3 - 5.5** are starting from x-axis and in clockwise direction as referred in **Fig 5.1**.



Fig 5.1:
Ariel view of seven stacks at Chandrapur Super Thermal Power Station.

Table 5.1: Details of Stacks at CSTPS (MARCH-2025)

Source	Stack height (m)	Stack temp (°C)	Average exit velocity (m/sec)	Stack dia. internal (m)
STACK 3	150	134.5	26.77	3.32
STACK 4	150	137	26.10	3.32
STACK 5	200	136	26.49	14.099
STACK 6	200	137	26.15	14.099
STACK 7	275	132	26.33	18.524
STACK 8	275	129	26.00	6.3
STACK 9	275	S/D	S/D	6.3

Table 5.2: Emissions from each Stack (MARCH-2025)

Source	Emission rates		
	SO ₂ (mg/Nm ³)	NO _x (mg/Nm ³)	SPM (mg/Nm ³)
STACK 3	1297	294	87
STACK 4	1254	291	85
STACK 5	1305	298	89
STACK 6	1279	304	92
STACK 7	1303	286	94
STACK 8	1294	327	39
STACK 9	S/D	S/D	S/D

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Table 5.3: 24-hr Average ground level concentrations of SO₂ predicted at various locations in 10 km radius, units of concentration µg/m³

DIRECTION (DEGREES)	DISTANCE (METERS)						
	500	1000	2000	3000	5000	8000	10000
10	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
20	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
40	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
50	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
60	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
80	0.00000	0.00401	0.0003	0.00000	0.00000	0.00000	0.00000
90	0.00009	0.58329	0.2284	0.00125	0.00003	0.00000	0.00000
100	0.00693	6.67340	0.86362	0.17286	0.2218	0.00329	0.00129
110	0.07727	23.32545	7.48574	2.90306	0.84288	0.28539	0.16566
120	0.25380	40.32941	22.63681	13.08524	6.41059	3.29933	2.39869
130	0.36950	40.71527	31.39892	22.52904	14.29259	9.27907	7.54912
140	1.60279	27.14938	21.72376	16.80215	11.57499	7.95944	6.61741
150	8.10670	22.81536	9.37407	5.96839	3.49011	2.08599	1.61085
160	20.43082	39.97873	14.30262	7.46295	3.21347	1.43518	0.96413
170	29.70543	60.88554	32.16920	21.32108	12.49597	7.57342	5.95374
180	27.40675	60.34226	37.84626	27.75091	18.39855	12.48321	10.36926
190	16.19611	37.83192	22.67219	16.16293	10.22502	6.3806	5.24566
200	5.69076	14.18464	6.37758	3.83684	1.92435	0.96186	0.67622
210	0.99294	2.78276	0.66959	0.27920	0.08630	0.2630	0.01425
220	0.06115	0.21176	0.01611	0.00332	0.00042	0.00005	0.00002
230	0.00069	0.00281	0.00003	0.00000	0.00000	0.00000	0.00000
240	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
250	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
260	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
270	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
280	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
290	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
300	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
310	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
320	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
330	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
340	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
350	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
360	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Ground Level Concentration Study Report

Table 5.4: 24-hr Average ground level concentrations of NO_x predicted at various location in 10 km radius, units of concentration µg/m³

DIRECTION (DEGREES)	DISTANCE(METERS)						
	500	1000	2000	3000	5000	8000	10000
10	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
20	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
40	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
50	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
60	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
80	0.00000	0.00089	0.00001	0.00000	0.00000	0.00000	0.00000
90	0.00002	0.12988	0.00509	0.00028	0.00001	0.00000	0.00000
100	0.00154	1.48694	0.00509	0.03853	0.00495	0.00073	0.00029
110	0.01720	5.19966	0.19915	0.64722	0.19462	0.06364	0.03694
120	0.05653	8.99305	1.66882	2.91788	1.42955	0.73577	0.53493
130	0.08231	9.08152	5.04774	5.02459	3.18760	2.06947	1.68365
140	0.35666	6.05645	7.00301	3.74788	2.58178	1.77529	1.47595
150	1.80481	5.08812	4.84600	1.3339	0.77852	0.46529	0.35931
160	4.55102	8.91507	2.09108	1.66424	0.71663	0.32006	0.21501
170	6.61930	13.57918	3.18943	4.75503	2.78687	1.68905	1.32783
180	6.10812	13.45962	7.17439	6.18952	4.10352	2.78419	2.31269
190	3.60960	8.43920	8.44133	3.60512	2.28062	1.45824	1.16998
200	1.26804	3.16426	5.05715	0.85581	0.42922	0.21453	0.15082
210	0.22115	0.62074	1.42258	0.6227	0.01925	0.00586	0.00318
220	0.01361	0.04723	0.14935	0.00074	0.00009	0.00001	0.00000
230	0.00015	0.00063	0.00359	0.00000	0.00000	0.00000	0.00000
240	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000
250	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
260	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
270	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
280	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
290	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
300	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
310	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
320	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
330	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
340	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
350	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
360	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Ground Level Concentration Study Report

Table 5.5: 24-hr Average ground level concentrations of SPM predicted at various locations in 10 km radius, units of concentration $\mu\text{g}/\text{m}^3$

DIRECTION (DEGREES)	DISTANCE(METERS)						
	500	1000	2000	3000	5000	8000	10000
10	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
20	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
40	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
50	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
60	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
80	0.00000	0.00027	0.00000	0.00000	0.00000	0.00000	0.00000
90	0.00001	0.03925	0.00153	0.00008	0.00000	0.00000	0.00000
100	0.00047	0.44787	0.05992	0.01159	0.00149	0.0022	0.00009
110	0.00520	1.56258	0.50133	0.19438	0.5843	0.1910	0.01108
120	0.01706	2.69820	1.51454	0.84545	0.42883	0.22068	0.16043
130	0.02483	2.72109	2.09906	1.50627	0.95563	0.62042	0.50474
140	0.10813	1.81349	1.45121	1.12272	0.77360	0.53202	0.44233
150	0.54587	1.52580	0.62625	0.39871	0.23318	0.13939	0.10765
160	1.37274	2.67448	0.95679	0.49921	0.21493	0.09598	0.06448
170	1.99308	4.07070	2.15106	1.42569	0.83556	0.50639	0.39809
180	1.83760	4.03244	2.52967	1.85503	1.22993	0.83452	0.69321
190	1.08595	2.52742	1.51508	1.08022	.68344	0.43703	0.35065
200	0.38187	0.94753	0.42616	0.25642	0.12862	0.06429	0.04520
210	0.06675	0.18592	0.04475	0.01866	0.00577	0.00176	0.00095
220	0.00412	0.01416	0.00108	0.00022	0.00003	0.00000	0.00000
230	0.00000	0.00019	0.00000	0.00000	0.00000	0.00000	0.00000
240	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
250	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
260	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
270	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
280	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
290	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
300	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
310	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
320	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
330	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
340	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
350	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
360	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Ground Level Concentration Study Report

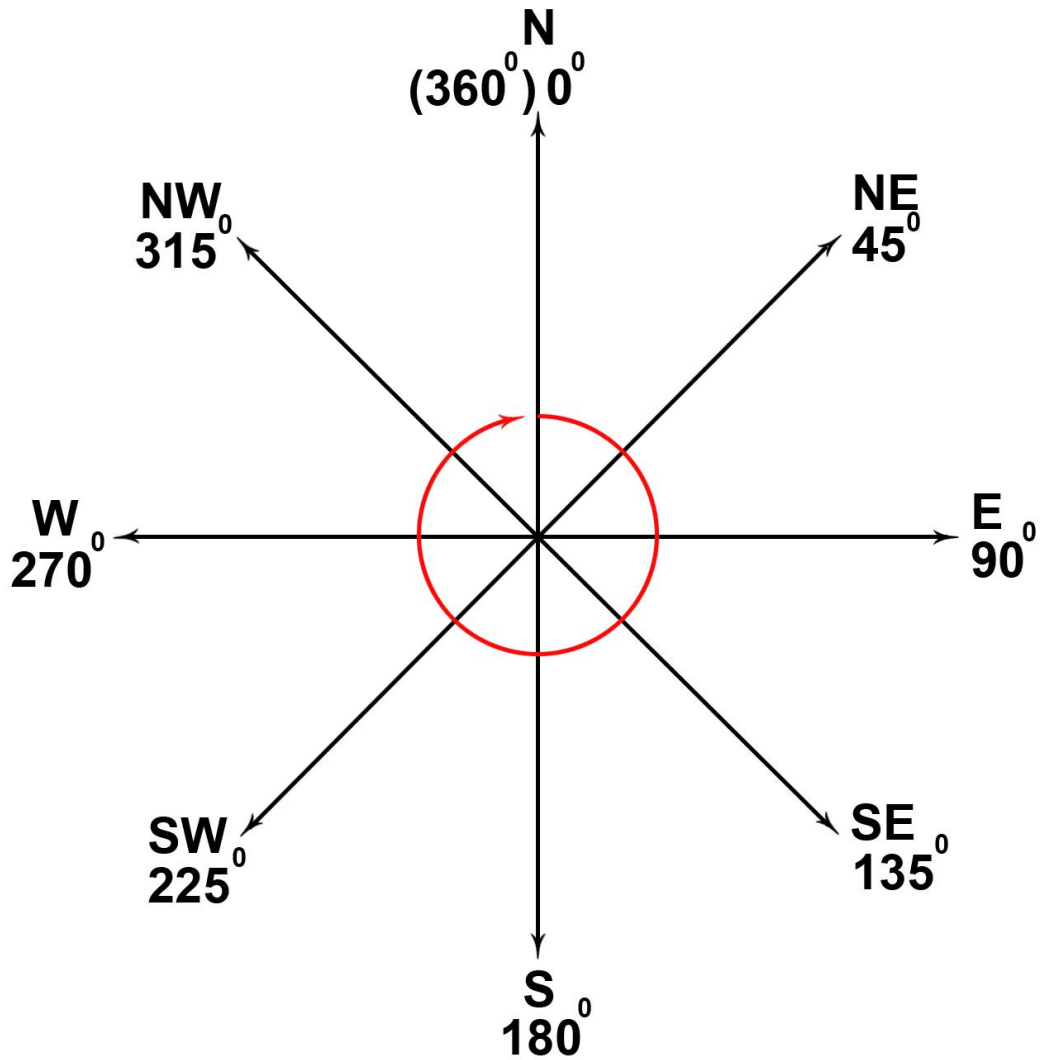
Surface plot of concentration in 10 km radius for SO₂, NO_x and SPM are depicted in **Fig 5.3, 5.4 and 5.5** respectively. Mostly the concentrations of these pollutants are higher in the North direction with prevailing meteorological conditions.

The ground level concentration have been monitored at various places around CSTPS and reported in **Table 5.6**.

Table 5.6: GLC monitored at various locations

Sr. No	Date	Time in Hours	Location	Dist. From CSTPS (km)	Direction w.r.t. CSTPS	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
1	06.03.2025	10:00	Kitadi Village	5.5	N	88	31	19.3	22.4
2	06.03.2025	10:45	Padmapur	4.7	NE	84	30	20.1	26.2
3	06.03.2025	12:15	Carmel Academy	4.5	E	95	33	19.9	23.3
4	06.03.2025	11:50	Tukum Masjid	5.6	SE	92	37	25.2	30.3
5	06.03.2025	11:25	Nice Computer	5.9	S	98	40	21.5	27.4
6	06.03.2025	15:00	Gajanan Mandir (Wadgaon)	3.8	SW	85	30	18.5	24.7
7	06.03.2025	15:30	Morwa	7.0	W	87	29	26.5	30.2
8	06.03.2025	16:15	Ash-bund	9.4	NW	80	27	17.1	24.4

Directions with respect to Degrees



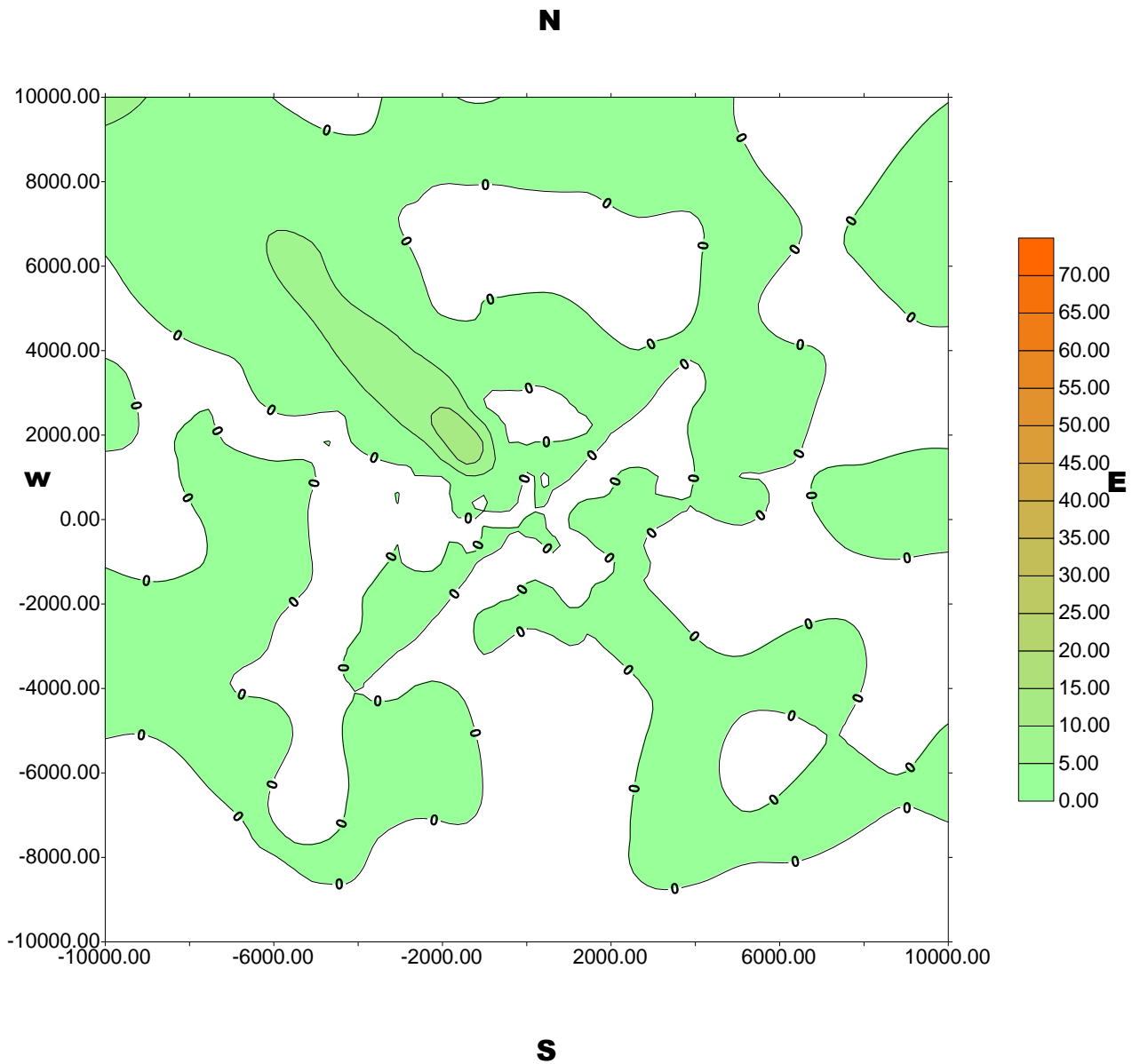


Fig. 5.3: Surface plot showing ground level concentration of SO₂ in 10 km radius

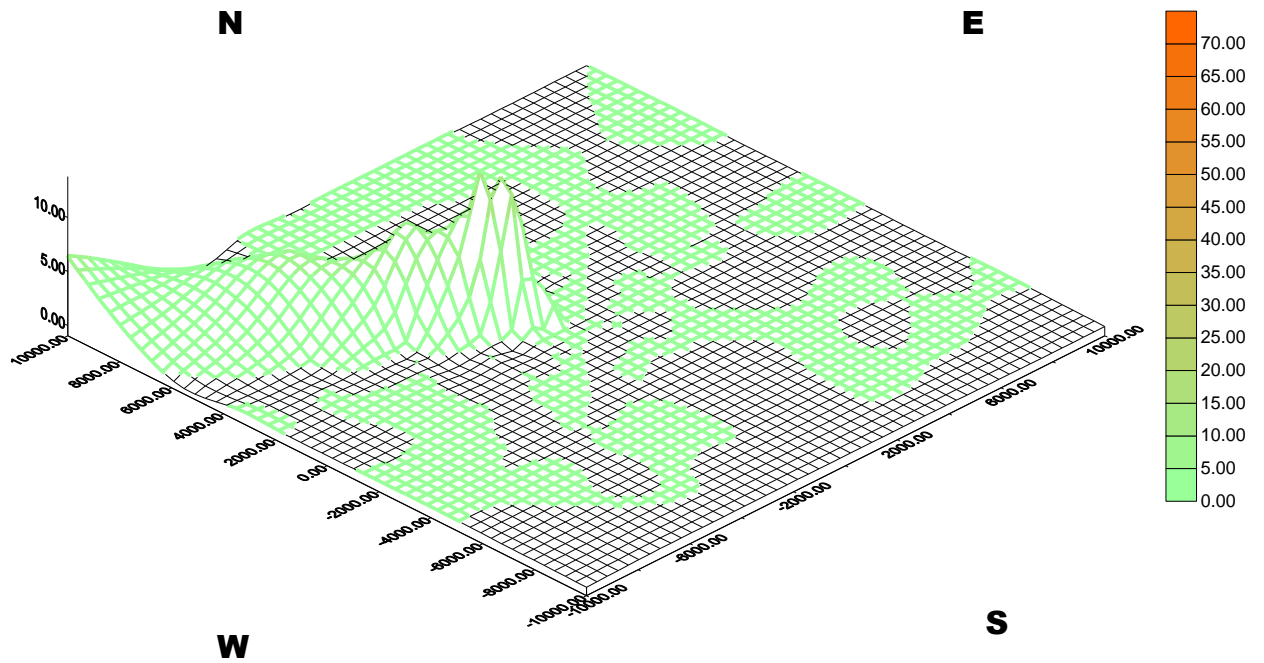


Fig 5.3 Surface Plot Showing Ground Level Concentration of SO₂ in 10Km. radius

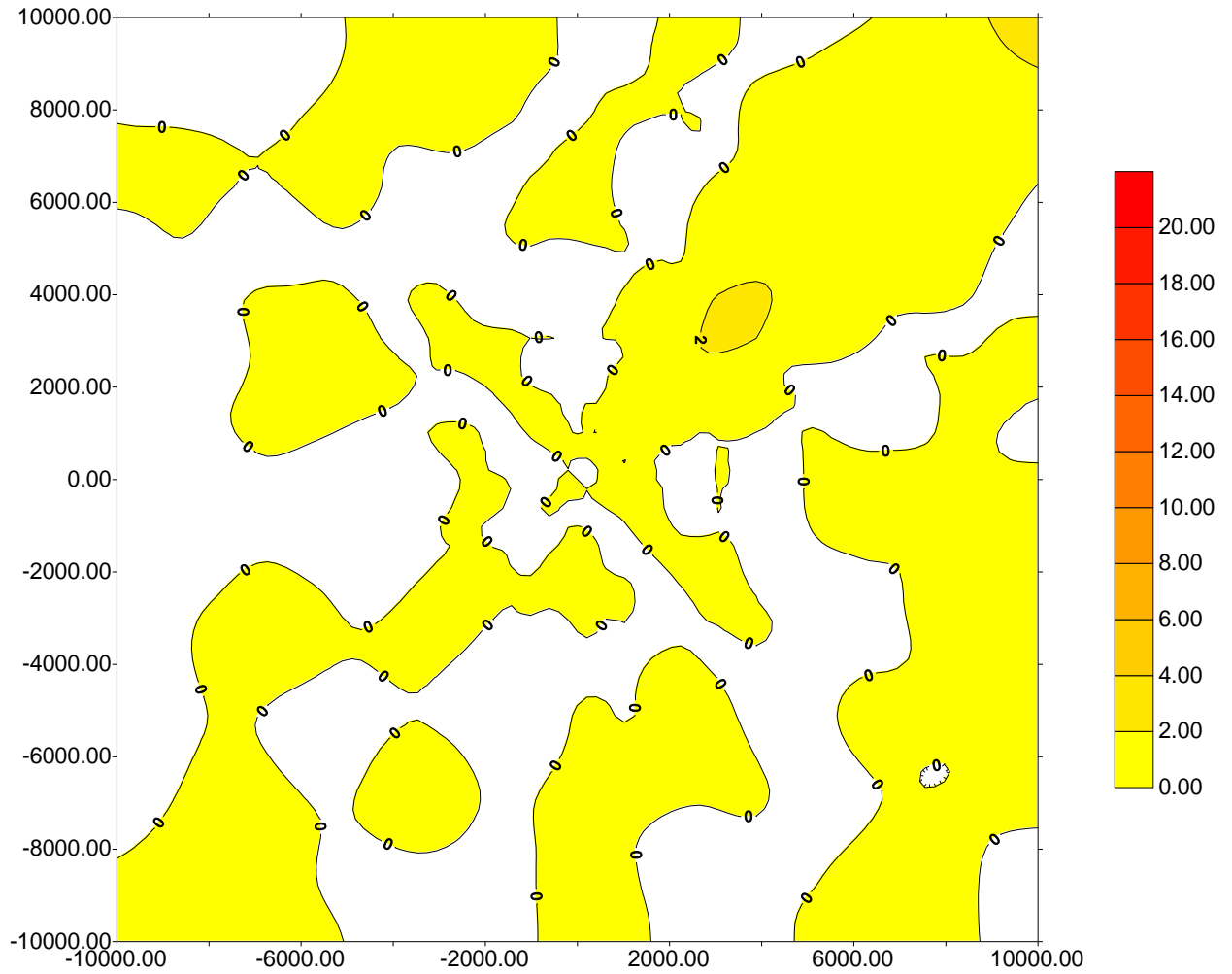


Fig. 5.4: Surface plot showing ground level concentration of NOx in 10 km radius

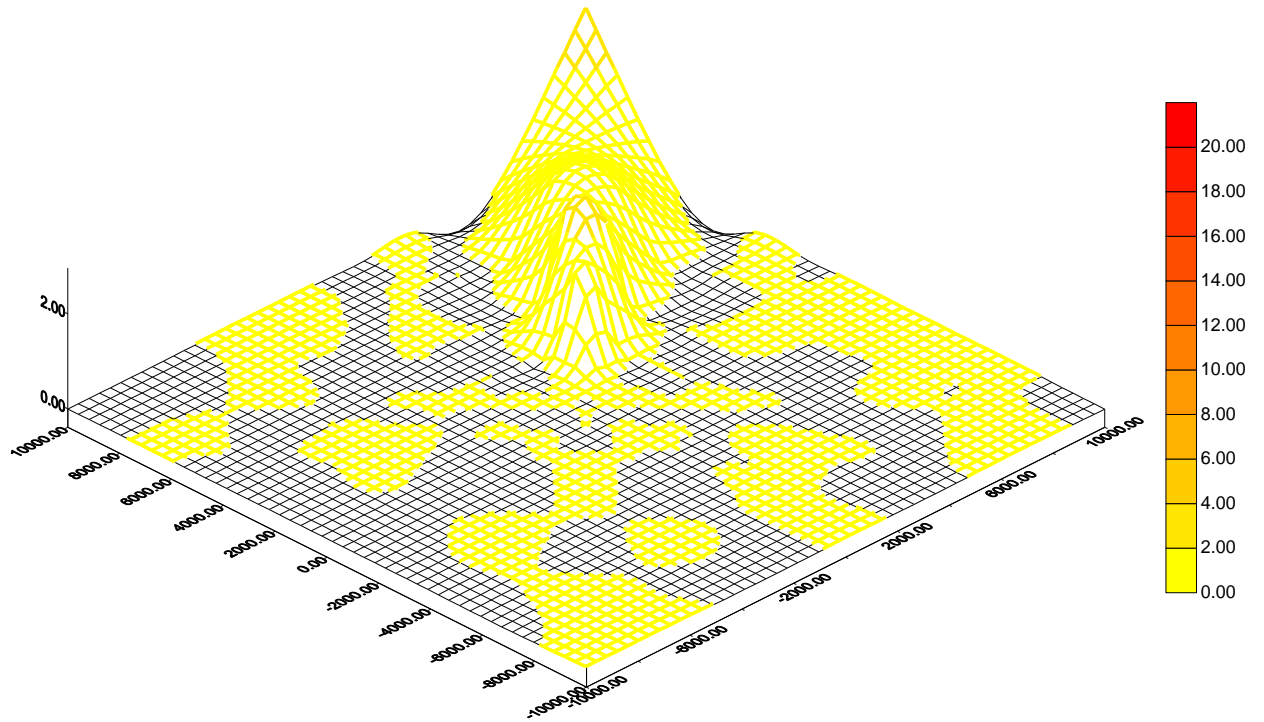


Fig 5.4 Surface Plot Showing Ground Level Concentration of NOx in 10Km. radius

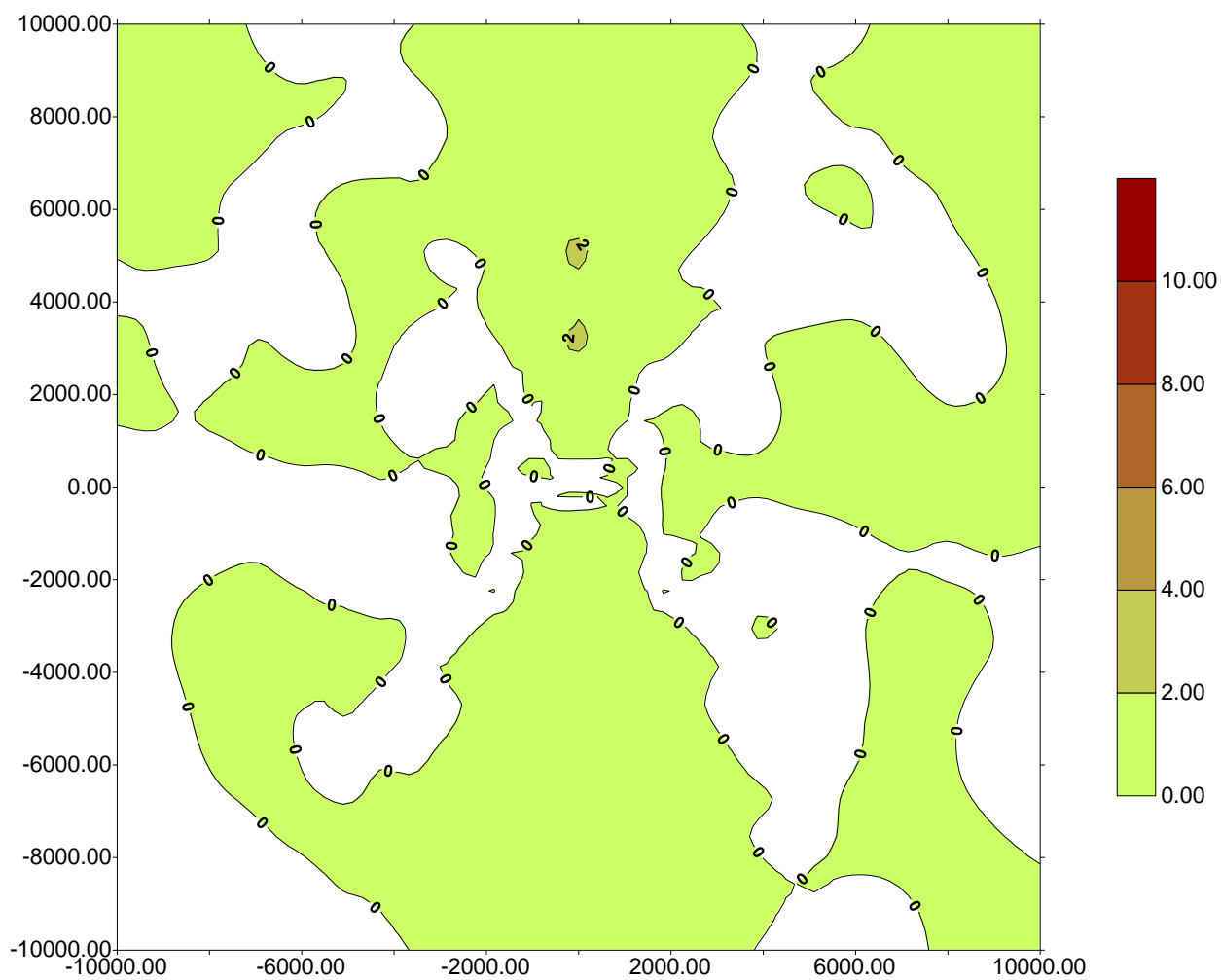


Fig. 5.5: Surface plot showing ground level concentration of PM in 10 km radius

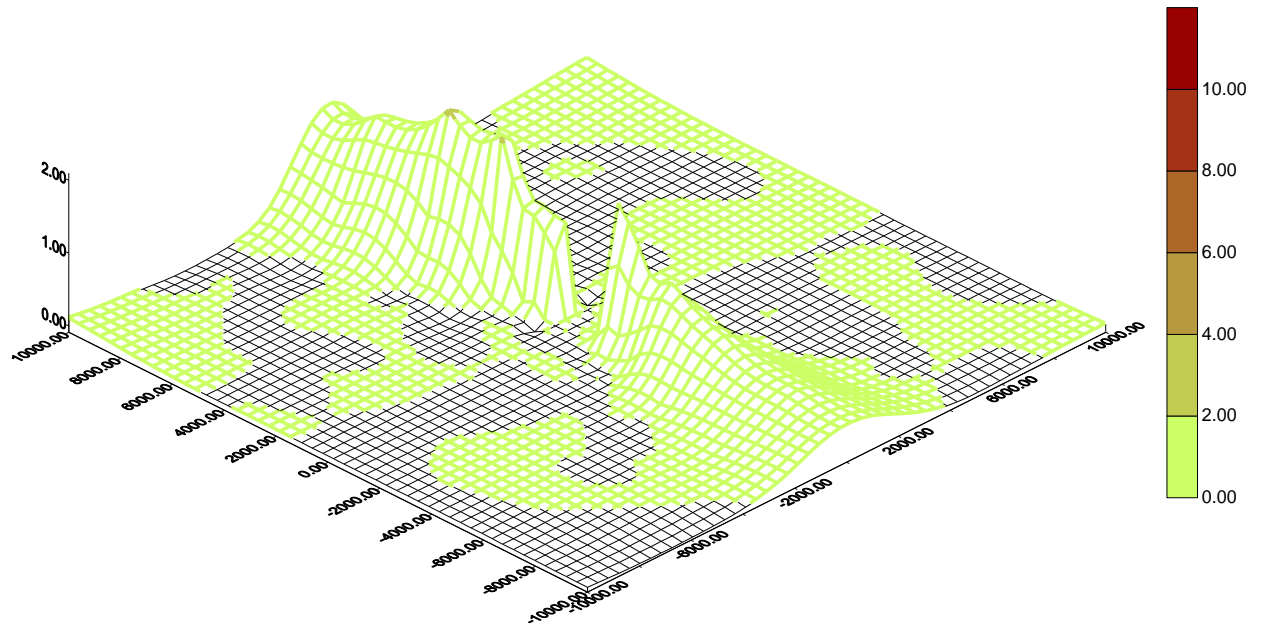


Fig 5.5 Surface Plot Showing Ground Level Concentration of SPM in 10Km. radius

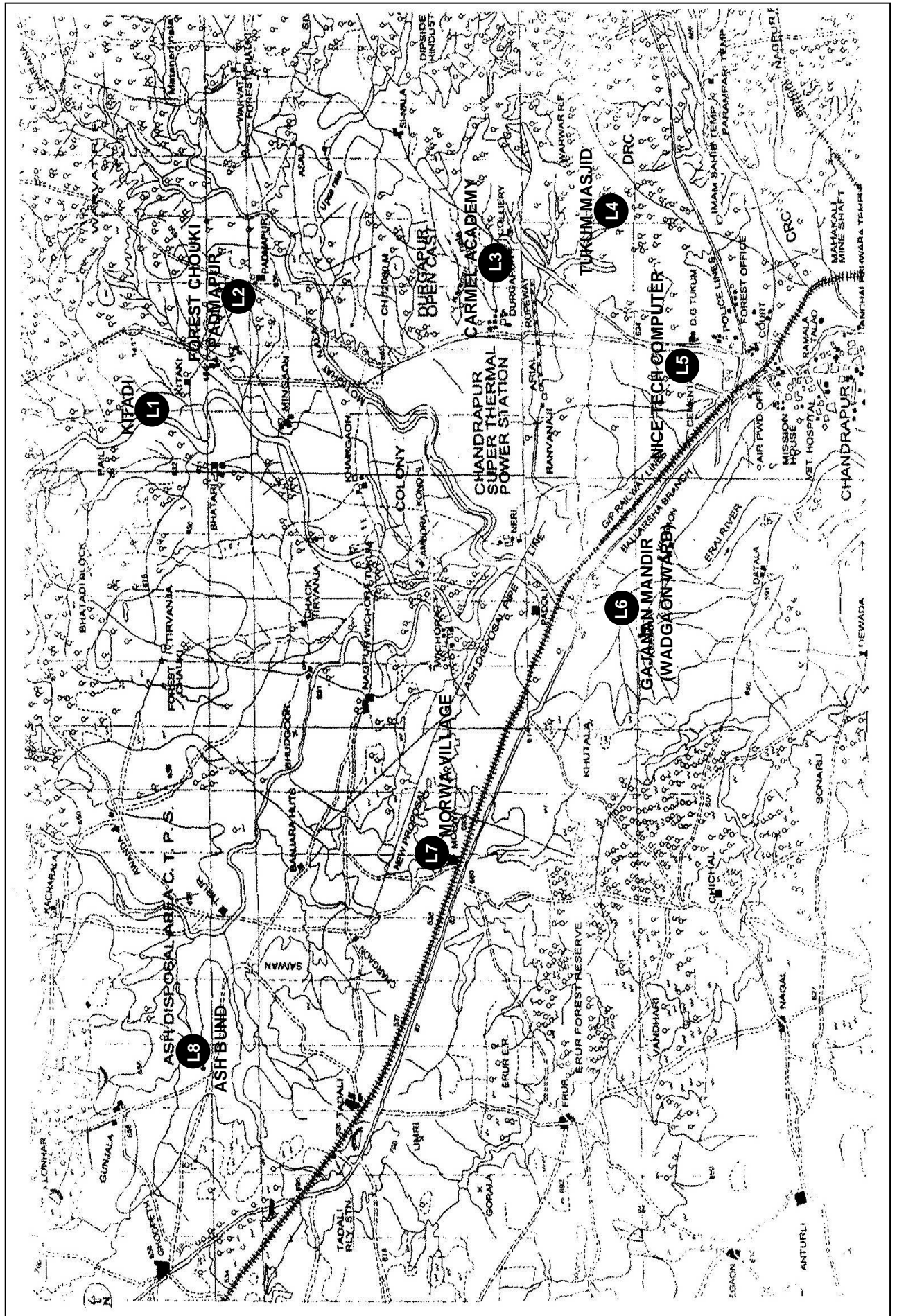
5.7 CONCLUSION

The concentrations of pollutants predicted by ISCST3 model at various locations are well within permissible limits.

During March 2025, predominant wind direction were North West. The highest ground level concentrations are appearing at locations Nice Computer & Carmel Academy from S & E direction respectively and within distance of about 3 to 10 kms.

The locations near the source are vulnerable to pollutants up to 10 km area surrounding the source. Depending upon the wind direction from Meteorological data, surrounding area gets affected. Mostly the concentrations of these pollutants are higher in the South of the plant with prevailing meteorological conditions. However the concentrations are in within permissible limits.

Agricultural fields and tree plantation reduced the severity of concentration of pollutants. Thus concentrations are well within permissible limits.



Health Camp at CSTPS, Chandrapur was held on dated 03.06.2025 in collaboration with & Tata Cancer Care Foundation.





CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period of **January 2025 to June 2025**

MONTHLY AVERAGE STACK MONITORING REPORT

MONTH	PARAMETERS	UNIT # 3 (210 MW)	UNIT # 4 (210 MW)	UNIT # 5 (500 MW)	UNIT # 6 (500 MW)	UNIT # 7 (500 MW)	UNIT # 8 (500 MW)	UNIT # 9 (500 MW)
Jan-25	SPM (mg/NM ³)	85	88	95	SD	94	44	20
	SO ₂ (mg/NM ₃)	1310	1277	1323	SD	1301	1288	1247
	NO _x (mg/NM ³)	302	318	295	SD	307	286	281
	Hg (mg/Nm ₃)	BQL	BQL	BQL	SD	BQL	BQL	BQL
	NH ₃ (PPM)	2.46	2.59	2.66	SD	2.84	NA	NA
Feb-25	SPM (mg/NM ³)	87	89	94	88	93	33	SD
	SO ₂ (mg/NM ₃)	1330	1325	1332	1341	1308	1300	SD
	NO _x (mg/NM ³)	284	305	306	323	302	300	SD
	Hg (mg/Nm ₃)	BQL	BQL	BQL	BQL	BQL	BQL	SD
	NH ₃ (PPM)	2.55	2.48	2.69	ND	2.70	NA	NA
Mar-25	SPM (mg/NM ³)	86	87	93	87	94	33	SD
	SO ₂ (mg/NM ₃)	1301	1286	1315	1331	1285	1276	SD
	NO _x (mg/NM ³)	291	286	317	291	280	259	SD
	Hg (mg/Nm ₃)	BQL	BQL	BQL	BQL	BQL	BQL	SD
	NH ₃ (PPM)	2.48	2.68	2.76	ND	2.82	NA	NA
April-25	SPM (mg/NM ³)	89	89	91	84	94	31	SD
	SO ₂ (mg/NM ₃)	1287	1288	1313	1301	1315	1323	SD
	NO _x (mg/NM ³)	294	303	313	298	285	321	SD
	Hg (mg/Nm ₃)	BQL	BQL	BQL	BQL	BQL	BQL	SD
	NH ₃ (PPM)	2.49	2.57	2.71	2.76	2.85	NA	NA
May-25	SPM (mg/NM ³)	91	86	93	80	91	30	SD
	SO ₂ (mg/NM ₃)	1185	1186	1298	1287	1295	1259	SD
	NO _x (mg/NM ³)	264	279	309	293	316	284	SD
	Hg (mg/Nm ₃)	BQL	BQL	BQL	BQL	BQL	BQL	SD
	NH ₃ (PPM)	2.44	2.64	2.76	2.86	2.99	NA	NA
June-25	SPM (mg/NM ³)	86	84	89	79	85	34	SD
	SO ₂ (mg/NM ₃)	1255	1247	1297	1290	1271	1289	SD
	NO _x (mg/NM ³)	284	281	288	326	311	310	SD
	Hg (mg/Nm ₃)	BQL	BQL	BQL	BQL	BQL	BQL	SD
	NH ₃ (PPM)	2.60	2.65	2.82	2.77	2.86	NA	NA

Note: -1) ND = Not Detectable, BQL = Below Quantification Limit

Analysis carried out by the MOEF&CC recognized laboratory, i.e., M/s. Mahabal Enviro Engineers Pvt Ltd.

As per MPCB Consent NH₃: Not to exceed 50 ppm.

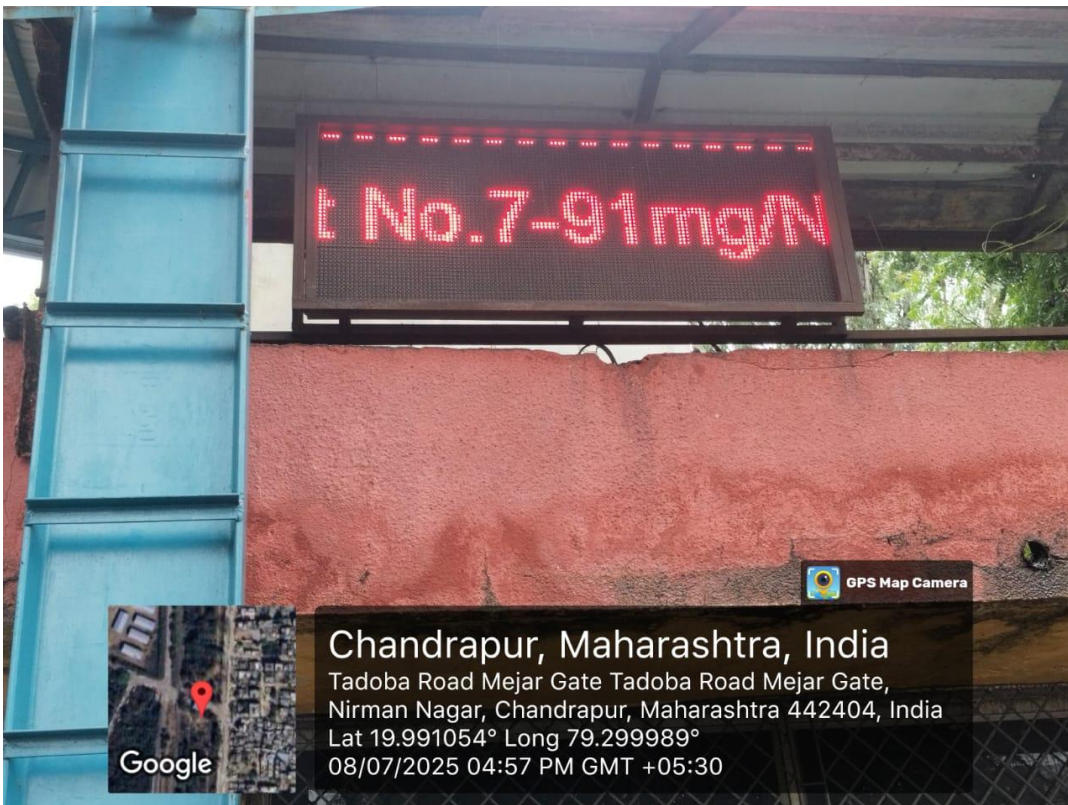
As per the MPCB consent and the MoEF & CC Notification effective from 07/12/2015.

Parameter	U# 3 to 7	U#8&9
SPM (mg/NM ³)	100	50
SO ₂ (mg/NM ³)	U#3&4=600 U#5,6&7=200	200
NO _x (mg/NM ³)	600	450 as per MoEF notification dated 19.10.2020
Hg (mg/NM ³)	U#3&4=N/A, U#5-7=0.03	0.03

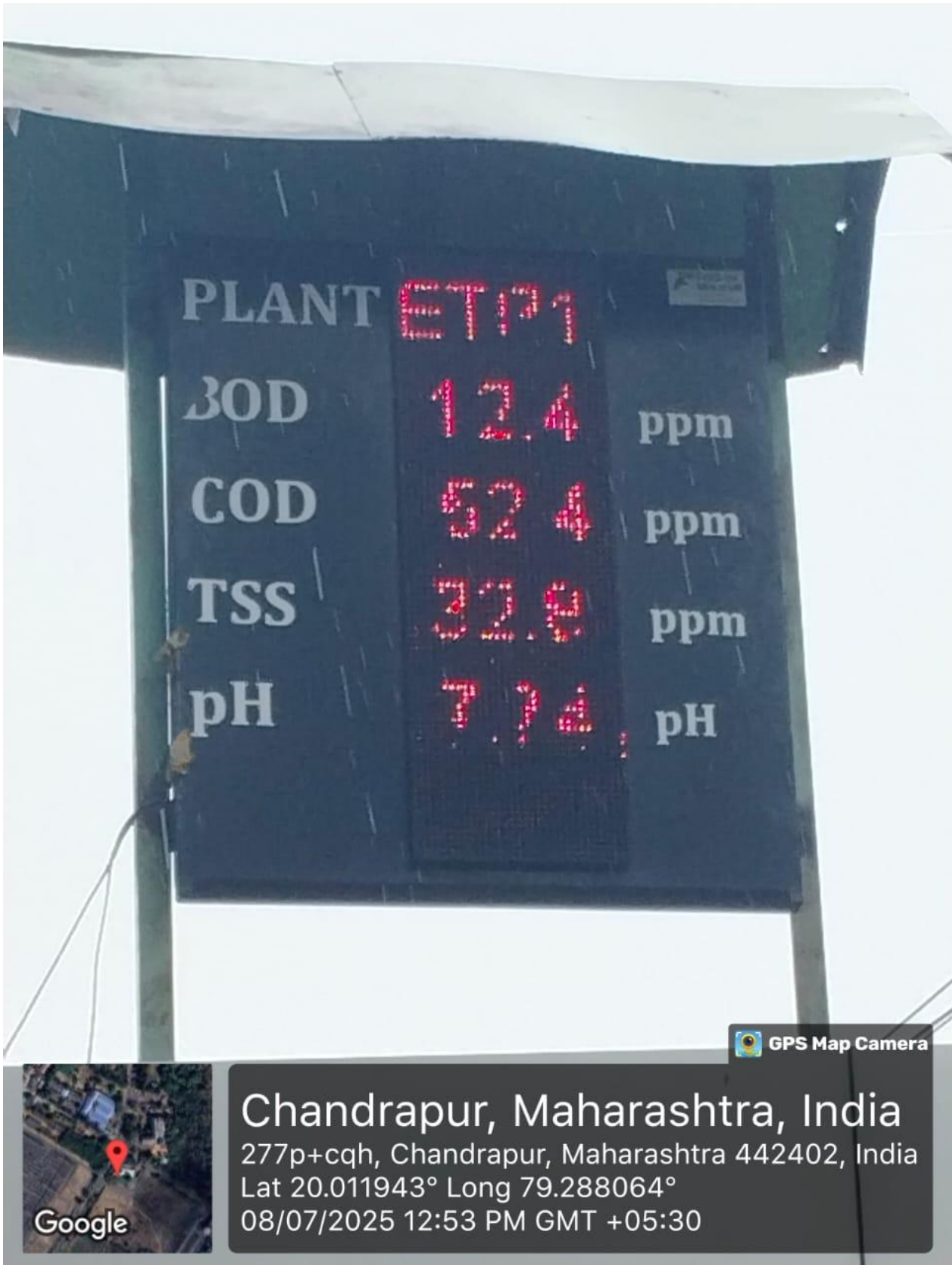
- Display boards showing Environmental Data at the main gate



- Display boards showing Environmental Data at the Major gate

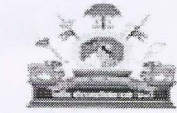


- Display of ETP Parameters at the main gate



- Display of ETP Parameters in Unit 8 & 9 area.





MAHAGENCO
 MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED
 CEN. 1-40700MH2000554C 1536-48

CHANDRAPUR SUPER THERMAL POWER STATION
 MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED
 (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018)
 Office of Chief Engineer, CSTPS, Chandrapur, Maharashtra - 442404
 Phone: 07172 - 220155 to 220159 Fax: 07172 - 220203
 Email: ce@mahagenco.chandrapur@mahagenco.in

(A GOVERNMENT OF MAHARASHTRA UNDERTAKING)

CHN/Env & Coal / ENV.Audit/

0 0 2 6 7 2

Date: 29 JUL 2024

To,
The Member Secretary,
 MPCB, Kalpataru Point
 Sion (East), Mumbai – 400 022

Subject: Submission of **Environmental Statement Report** in 'Form-V' for the year 2023-24.

Ref: 1) MPCB Consent UAN No. 0000163955/CR/2307001126 dated 13.07.2023

2) MPCB Consent UAN No. 0000132095/CR/2207000313 dated 06.07.2022

Dear Sir,

Please find enclosed herewith the "Environmental Statement Report" of Chandrapur Super Thermal Power Station, Chandrapur for the year 2023-24 (year ending 31st March 2024).

The "Environmental Statement Report" is prepared in prescribed Form-V as per provision of rule 14 of the Environment (Protection) (2nd Amendment) Rules 1992.

Thanking you,

Yours sincerely,

[Signature]
Chief Engineer
 CSTPS, Chandrapur

Encl.: - As above.

Copy s.w.rs.to:

1. The Director (Op), MSPGCL, Mumbai.
2. The Joint Director (APC), MPCB, Mumbai.
3. The Executive Director (O&M-II/E&S), MSPGCL, Mumbai.
4. The Regional Officer, MPCB, Chandrapur.
5. The Sub Regional Officer, MPCB, Chandrapur.

[Signature]
 01-08-2024

Maharashtra Pollution Control Board
 Regional office
 Udyog Bhavan 1st Floor Station Road
 Chandrapur-442401



प्रमाणपत्र ट्रैकिंग आईडी/Certificate Tracking ID : 2502319
जारी करने की तिथि/Date of Issue : 28-May-2025
प्रमाणपत्र क्रमांक/Certificate Sr.No.: ULR-TC1170325000000169F



TC-11703



Radioanalytical Laboratory

RADIOACTIVITY TEST CERTIFICATE

Ref : BRIT/RAL/DOM/1745-1784/MISC/1352-1391/24-25

To :
M/S. MSPGCL,
CHANDRAPUR SUPER THERMAL POWER STATION, CSTPS, URJANAGAR CHANDRAPUR,
DIST. CHANDRAPUR - 442 404, MAHARASHTRA.

This is regarding the sample of "COAL & ASH" sent for radioactivity analysis vide your letter ref.: MEEPL/GEN/2025/0037 dated 08.03.2025 which as per above letter is drawn from consignment with the following markings, as shown in italics:

NAME & ADDRESS OF THE CUSTOMER : *MAHABAL ENVIRO ENGINEERS PVT. LTD.,
PLOT NOS. 13, 14, 17, 18, GRAMPANCHAYAT BOKHARA, 8 KM FROM
NAGPUR CITY, OPP. PATEL PETROL PUMP, CHHINDWARA ROAD,
KORADI, DIST. NAGAPUR - 441 111. MAHARASHTRA.*

SAMPLE NAME : *1) BUNKER COAL 2) FLY ASH 3) BOTTOM ASH 4) ASH BUND*

DATE OF RECEIPT OF SAMPLE: 21.03.2025

DATE OF COMPLETION OF TEST: 29.04.2025

The Samples were analysed by HPGe Gamma spectrometry and the values obtained for U-238, Ra-226, Th-232 and K-40 against each sample is shown in the table below :

Sr. No	SAMPLE NAME & LOCATION	QUANTITY	U-238 (Bq/Kg)	Th-232 (Bq/Kg)	Ra-226 (Bq/Kg)	K-40 (Bq/Kg)
1	BUNKER COAL UNIT NO. 3 TO 6	1.5 KG X 1 NO. POLY BAG	26.6 ± 1.6	50.1 ± 2.5	7.8 ± 1.0	143 ± 7.2
2	BUNKER COAL UNIT NO. 7	1.5 KG X 1 NO. POLY BAG	29.2 ± 1.6	56.5 ± 1.6	20.2 ± 2.5	206 ± 11.1
3	BUNKER COAL UNIT NO. 8 TO 9	1.5 KG X 1 NO. POLY BAG	23.5 ± 1.2	37.5 ± 1.3	123 ± 7.4	65 ± 3.6
4	FLY ASH UNIT NO. 3 TO 6	1.5 KG X 1 NO. POLY BAG	118 ± 2.6	198 ± 2.9	105 ± 6.8	618 ± 23.7
5	FLY ASH UNIT NO. 7	1.5 KG X 1 NO. POLY BAG	84.9 ± 2.0	130 ± 3.8	78.7 ± 5.4	317 ± 13.9
6	FLY ASH UNIT NO. 8 TO 9	1.5 KG X 1 NO. POLY BAG	73.4 ± 1.7	115 ± 3.2	66.4 ± 4.5	421 ± 16.1
7	BOTTOM ASH UNIT NO. 3 TO 6	1.5 KG X 1 NO. POLY BAG	52.3 ± 1.9	96.4 ± 1.8	44 ± 3.8	314 ± 13.7
8	BOTTOM ASH UNIT NO. 7	1.5 KG X 1 NO. POLY BAG	57.6 ± 2.1	102 ± 3.2	48.3 ± 3.8	285 ± 12.4
9	BOTTOM ASH UNIT NO. 8 TO 9	1.5 KG X 1 NO. POLY BAG	53.8 ± 2.1	79.2 ± 6.4	43.8 ± 3.8	381 ± 15.9
10	ASH BUND - FLY ASH & BOTTOM ASH	1.5 KG X 1 NO. POLY BAG	56.8 ± 1.8	101 ± 1.6	51.8 ± 3.6	338 ± 13.2

Opinion: The measurement values are below the clearance level for radionuclides of natural origin in bulk solid materials, as per AERB directive 01/2010 (table-3) dated 26/11/2010.

Note: (i) The report pertains to the given sample only. (ii) The sample will be retained in this laboratory for a period of 1 month from certificate date and thereafter it will be disposed off. (iii) This report shall not be reproduced except in full, without written approval of the laboratory. (iv) The sampling is not done by this laboratory.

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प्रमाणपत्र ट्रैकिंग आईडी/Certificate Tracking ID : 2502319
जारी करने की तिथि/Date of Issue : 28-May-2025
प्रमाणपत्र क्रमांक/Certificate Sr.No.: ULR-TC1170325000000169F



TC-11703



Checked by:
GANPAT B NAKTI
Assistant

Authorized Signatory:
AJAY NANA THAMKE
OIC, RAL

***** End of Report *****

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प्रमाणपत्र ट्रैकिंग आईडी/Certificate Tracking ID : 2502296
जारी करने की तिथि/Date of Issue : 27-May-2025
प्रमाणपत्र क्रमांक/Certificate Sr.No.: ULR-TC1170325000000152F



Radioanalytical Laboratory

RADIOACTIVITY TEST CERTIFICATE

Ref : BRIT/RAL/DOM/161-188/MISC/106-133/25-26

To :
MSPGCL,
CHANDRAPUR SUPER THERMAL POWER STATION,
CSTPS, URJANAGAR CHANDRAPUR, DIST. CHANDRAPUR, MAHARASHTRA - 442 404

This is regarding the sample of "COAL & ASH" sent for radioactivity analysis vide your letter ref.: MEEPL/GEN/2025/0065 dated 16.04.2025 which as per above letter is drawn from consignment with the following markings, as shown in italics:

NAME & ADDRESS OF THE CUSTOMER : *MAHABAL ENVIRO ENGINEERS PVT. LTD.,
PLOT NOS. 13, 14, 17, 18, GRAMPANCHAYAT, BOKHARA, 8 KM FROM
NAGPUR CITY, OPP. PATEL PETROL PUMP, CHHINDWARA ROAD,
KORADI, DIST. NAGAPUR - 441 111.*

SAMPLE NAME : *1. COAL SAMPLE - BUNKER COAL
2. ASH BUND (FLY ASH & BOTTOM ASH)*

DATE OF RECEIPT OF SAMPLE: 29.04.2025

DATE OF COMPLETION OF TEST: 20.05.2025

The Samples were analysed by HPGe Gamma spectrometry and the values obtained for U-238, Ra-226, Th-232 and K-40 against each sample is shown in the table below :

Sr. No	SAMPLE NAME & LOCATION	QUANTITY	U-238 (Bq/Kg)	Th-232 (Bq/Kg)	Ra-226 (Bq/Kg)	K-40 (Bq/Kg)
1	BUNKER COAL UNIT NO.3 TO 4 (COMPOSITE)	1.5 KG X 1 NO. POLY BAG	25.2 ± 2.3	55.5 ± 2.2	11.5 ± 2.0	89 ± 6.8
2	BUNKER COAL UNIT NO.5	1.5 KG X 1 NO. POLY BAG	25.5 ± 1.9	53 ± 3.8	25.2 ± 3.8	233 15.8
3	BUNKER COAL UNIT NO.6	1.5 KG X 1 NO. POLY BAG	27 ± 2.3	62.2 ± 2.3	8.6 ± 1.6	119 ± 8.8
4	BUNKER COAL UNIT NO.7 COMPOSITE	1.5 KG X 1 NO. POLY BAG	27 ± 1.64	51.7 ± 2.6	22.6 ± 2.4	149 ± 7.6
5	BUNKER COAL UNIT NO.8	1.5 KG X 1 NO. POLY BAG	23.4 ± 1.3	44.1 ± 1.3	21.4 ± 2.3	223 ± 10.7
6	REJECT COAL	1.5 KG X 1 NO. POLY BAG	15.3 ± 0.6	25.7 ± 1.3	10.6 ± 1.2	121 ± 5.7
7	ASH BUND - FLY ASH & BOTTOM ASH	1.5 KG X 1 NO. POLY BAG	74.1 ± 2.3	124 ± 3.8	58.1 ± 4.6	358 ± 15.4

Opinion: The measurement values are below the clearance level for radionuclides of natural origin in bulk solid materials, as per AERB directive 01/2010 (table-3) dated 26/11/2010.

Note: (i) The report pertains to the given sample only. (ii) The sample will be retained in this laboratory for a period of 1 month from certificate date and thereafter it will be disposed off. (iii) This report shall not be reproduced except in full, without written approval of the laboratory. (iv) The sampling is not done by this laboratory.

Checked by:
GANPAT B NAKTI
Assistant

Authorized Signatory:
AJAY NANA THAMKE
OIC, RAL

***** End of Report *****

1/1

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Mahabal Enviro Engineers Pvt. Ltd.

PLOT NOS. 13,14,17,18, GRAMPANCHAYAT BOKHARA, CHHINDWARA ROAD, KORADI, NAGPUR, MAHARASHTRA, INDIA
Phone: **0712-2612162/2612212** email: **nagpur@mahabal.com**

TEST REPORT



CO-0189250304

Report No.:	ME-0189250304	Date:	29.03.2025
ULR No.:	TC748725000004381F		

Name and Address of Customer	CHANDRAPUR SUPER THERMAL POWER STATION Urjanagar, Chandrapur Dist: Chandrapur – 442 404.		WO No.: CSTPS/4500132583/ 000346 WO Date: 27.04.2024
Sample Description / Type	Coal	Sampling Done by	Customer
Sampling Location	BOC UTS	Sample Quantity / Packing	1 kg X 1 No. Polythene Bag
Date of Sampling	03.03.2025	Date of Receipt of Sample	04.03.2025
Sampling Procedure	Sample Tested as received		
Date of Start of Analysis	08.03.2025	Date of Completion of Analysis	12.03.2025

Sr. No.	Parameter	Unit	Result	Method Reference
	Discipline: Chemical Testing; Product Group: Solid Fuel (Coal)			
1.	Mercury (as Hg)	mg/kg	0.12	IS 16721 (Part I): 2018

END OF REPORT

- Note:**
1. BQL: Below Quantification Limit.
 2. LOQ: Limit of Quantification.
 3. ADB: Air Dry Basis.
 4. Mercury expressed on % by weight of coal (on ADB).
 5. The result listed refers only to the tested sample(s) and applicable parameter(s).
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Amd 03 Date
18.07.2023

Reviewed and
authorised by

Harish Mendhi
Technical Manager
Chemical Testing



TC-7487



Mahabal Enviro Engineers Pvt. Ltd.

PLOT NOS. 13,14,17,18, GRAMPANCHAYAT BOKHARA, CHHINDWARA ROAD, KORADI, NAGPUR, MAHARASHTRA, INDIA
Phone: **0712-2612162/2612212** email: **nagpur@mahabal.com**

TEST REPORT



CO-0189250304

Report No.:	ME-0189250304N	Date:	29.03.2025
ULR No.:	-		

Name and Address of Customer	CHANDRAPUR SUPER THERMAL POWER STATION Urjanagar, Chandrapur Dist: Chandrapur – 442 404.		WO No.: CSTPS/4500132583/ 000346 WO Date: 27.04.2024
Sample Description / Type	Coal	Sampling Done by	Customer
Sampling Location	BOC UTS	Sample Quantity / Packing	1 kg X 1 No. Polythene Bag
Date of Sampling	03.03.2025	Date of Receipt of Sample	04.03.2025
Sampling Procedure	Sample Tested as received		
Date of Start of Analysis	08.03.2025	Date of Completion of Analysis	12.03.2025

Sr. No.	Parameter	Unit	Result	Method Reference
	Discipline: Chemical Testing; Product Group: Solid Fuel (Coal)			
1.	Chromium (as Cr)	mg/kg	90.73	ASTM-D 3683
2.	Lead (as Pb)	mg/kg	21.70	ASTM-D 3683
3.	Arsenic (as As)	mg/kg	2.20	ASTM-D 4606-03
4.	Cadmium (as Cd)	mg/kg	2.76	ASTM-D 3683
5.	Nickel (as Ni)	mg/kg	46.75	ASTM-D 3683

END OF REPORT

- Note:**
1. BQL: Below Quantification Limit.
 2. LOQ: Limit of Quantification.
 3. All results expressed as % by weight of Ash (on DB).
 4. DB: Dry Basis
 5. The result listed refers only to the tested sample(s) and applicable parameter(s).
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authorised by

Harish Mendhi
Technical Manager
Chemical Testing





Mahabal Enviro Engineers Pvt. Ltd.

PLOT NOS. 13,14,17,18, GRAMPANCHAYAT BOKHARA, CHHINDWARA ROAD, KORADI, NAGPUR, MAHARASHTRA, INDIA

Phone: **0712-2612162/2612212** email: **nagpur@mahabal.com**

TEST REPORT



CO-0190250304

Report No.:	ME-0190250304	Date:	29.03.2025
ULR No.:	TC748725000004382F		

Name and Address of Customer	CHANDRAPUR SUPER THERMAL POWER STATION Urjanagar, Chandrapur Dist: Chandrapur – 442 404.	WO No.:	CSTPS/4500132583/ 000346
		WO Date:	27.04.2024
Sample Description / Type	Coal	Sampling Done by	Customer
Sampling Location	Rake No. 138	Sample Quantity / Packing	1 kg X 1 No. Polythene Bag
Date of Sampling	03.03.2025	Date of Receipt of Sample	04.03.2025
Sampling Procedure	Sample Tested as received		
Date of Start of Analysis	08.03.2025	Date of Completion of Analysis	12.03.2025

Sr. No.	Parameter	Unit	Result	Method Reference
	<u>Discipline: Chemical Testing;</u> <u>Product Group: Solid Fuel (Coal)</u>			
1.	Mercury (as Hg)	mg/kg	0.18	IS 16721 (Part I): 2018

END OF REPORT

- Note:**
1. BQL: Below Quantification Limit.
 2. LOQ: Limit of Quantification.
 3. ADB: Air Dry Basis.
 4. Mercury expressed on % by weight of coal (on ADB).
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Technical Manager
Chemical Testing



TC-7487



Mahabal Enviro Engineers Pvt. Ltd.

PLOT NOS. 13,14,17,18, GRAMPANCHAYAT BOKHARA, CHHINDWARA ROAD, KORADI, NAGPUR, MAHARASHTRA, INDIA
Phone: **0712-2612162/2612212** email: **nagpur@mahabal.com**

TEST REPORT



CO-0190250304

Report No.:	ME-0190250304N	Date:	29.03.2025
ULR No.:	-		

Name and Address of Customer	CHANDRAPUR SUPER THERMAL POWER STATION Urjanagar, Chandrapur Dist: Chandrapur – 442 404.		WO No.: CSTPS/4500132583/ 000346 WO Date: 27.04.2024
Sample Description / Type	Coal	Sampling Done by	Customer
Sampling Location	Rake No. 138	Sample Quantity / Packing	1 kg X 1 No. Polythene Bag
Date of Sampling	03.03.2025	Date of Receipt of Sample	04.03.2025
Sampling Procedure	Sample Tested as received		
Date of Start of Analysis	08.03.2025	Date of Completion of Analysis	12.03.2025

Sr. No.	Parameter	Unit	Result	Method Reference
	<u>Discipline: Chemical Testing;</u> <u>Product Group: Solid Fuel (Coal)</u>			
1.	Chromium (as Cr)	mg/kg	83.63	ASTM-D 3683
2.	Lead (as Pb)	mg/kg	13.02	ASTM-D 3683
3.	Arsenic (as As)	mg/kg	2.09	ASTM-D 4606-03
4.	Cadmium (as Cd)	mg/kg	2.37	ASTM-D 3683
5.	Nickel (as Ni)	mg/kg	38.66	ASTM-D 3683

END OF REPORT

- Note:**
1. BQL: Below Quantification Limit.
 2. LOQ: Limit of Quantification.
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 4. DB: Dry Basis
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Harish Mendhi
Technical Manager
Chemical Testing





Mahabal Enviro Engineers Pvt. Ltd.

PLOT NOS. 13,14,17,18, GRAMPANCHAYAT BOKHARA, CHHINDWARA ROAD, KORADI, NAGPUR, MAHARASHTRA, INDIA
Phone: **0712-2612162/2612212** email: **nagpur@mahabal.com**

TEST REPORT



CO-0191250304

Report No.:	ME-0191250304	Date:	29.03.2025
ULR No.:	TC748725000004383F		

Name and Address of Customer	CHANDRAPUR SUPER THERMAL POWER STATION Urjanagar, Chandrapur Dist: Chandrapur – 442 404.	WO No.:	CSTPS/4500132583/ 000346	WO Date:	27.04.2024
Sample Description / Type	Coal	Sampling Done by	Customer		
Sampling Location	Rake No. 153	Sample Quantity / Packing	1 kg X 1 No. Polythene Bag		
Date of Sampling	03.03.2025	Date of Receipt of Sample	04.03.2025		
Sampling Procedure	Sample Tested as received				
Date of Start of Analysis	08.03.2025	Date of Completion of Analysis	12.03.2025		

Sr. No.	Parameter	Unit	Result	Method Reference
	<u>Discipline: Chemical Testing;</u> <u>Product Group: Solid Fuel (Coal)</u>			
1.	Mercury (as Hg)	mg/kg	0.14	IS 16721 (Part I): 2018

END OF REPORT

- Note:**
1. BQL: Below Quantification Limit.
 2. LOQ: Limit of Quantification.
 3. ADB: Air Dry Basis.
 4. Mercury expressed on % by weight of coal (on ADB).
 5. The result listed refers only to the tested sample(s) and applicable parameter(s).
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TC-7487



Mahabal Enviro Engineers Pvt. Ltd.

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Phone: **0712-2612162/2612212** email: **nagpur@mahabal.com**

TEST REPORT



CO-0191250304

Report No.:	ME-0191250304N	Date:	29.03.2025
ULR No.:	-		

Name and Address of Customer	CHANDRAPUR SUPER THERMAL POWER STATION Urjanagar, Chandrapur Dist: Chandrapur – 442 404.		WO No.: CSTPS/4500132583/ 000346 WO Date: 27.04.2024
Sample Description / Type	Coal	Sampling Done by	Customer
Sampling Location	Rake No. 153	Sample Quantity / Packing	1 kg X 1 No. Polythene Bag
Date of Sampling	03.03.2025	Date of Receipt of Sample	04.03.2025
Sampling Procedure	Sample Tested as received		
Date of Start of Analysis	08.03.2025	Date of Completion of Analysis	12.03.2025

Sr. No.	Parameter	Unit	Result	Method Reference
	<u>Discipline: Chemical Testing;</u> <u>Product Group: Solid Fuel (Coal)</u>			
1.	Chromium (as Cr)	mg/kg	107	ASTM-D 3683
2.	Lead (as Pb)	mg/kg	21.74	ASTM-D 3683
3.	Arsenic (as As)	mg/kg	2.30	ASTM-D 4606-03
4.	Cadmium (as Cd)	mg/kg	3.16	ASTM-D 3683
5.	Nickel (as Ni)	mg/kg	49.60	ASTM-D 3683

END OF REPORT

- Note:**
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Technical Manager
Chemical Testing



CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR
CONTROL MEASURE TO PREVENT FUGITIVE DUST EMISSION



- Dust Suppression using water canon fogger at LT Bunker Area for 24 hrs.



- Dust Suppression at Reject Coal yard using water canon fogger.



CHANDRAPUR SUPER THERMAL POWER STATION, CHANDRAPUR.

For the period of January 2025 to July 2025

SURFACE WATER ANALYSIS REPORT

Month	Location	pH	Colour	Total Dissolved solids	Oil and Grease	Chloride (as Cl)	Dissolved Oxygen	COD	BOD	Sulphate (as SO ₄)
Jan-25	1	7.54	1	470	ND	46	5.6	18	4.5	50.5
	2	7.34	1	475	ND	49	5.5	18	4.5	47.3
	3	7.47	1	489	ND	46	5.5	17	4.4	47.5
	4	7.51	1	474	ND	50	5.5	17	4.6	49.2
	5	7.66	1	476	ND	51	5.6	17	4.5	49.1
	6	7.63	1	478	ND	48	5.5	18	4.5	48.5
	7	7.49	1	468	ND	48	5.4	16	4.5	49.8
	8	7.39	1	474	ND	49	5.5	16	4.4	49.0
	9	7.49	1	460	ND	49	5.5	17	4.5	49.8
	10	7.54	1	477	ND	47	5.5	17	4.4	49.1
	11	7.52	1	472	ND	50	5.5	18	4.4	49.0
	12	7.44	1	469	ND	50	5.5	16	4.5	47.4
	13	7.47	1	476	ND	46	5.7	17	4.4	47.4
	14	7.55	1	460	ND	48	5.4	17	4.5	48.9
	15	7.53	1	468	ND	48	5.4	18	4.5	49.4
Feb-25	1	7.58	1	474	ND	48	5.5	18	4.5	50.2
	2	7.48	1	472	ND	48	5.5	17	4.4	49.6
	3	7.33	1	473	ND	48	5.5	16	4.4	48.9
	4	7.38	1	478	ND	47	5.4	17	4.5	47.1
	5	7.54	1	474	ND	51	5.5	17	4.5	48.0
	6	7.51	1	484	ND	48	5.6	17	4.5	49.3
	7	7.53	1	480	ND	49	5.5	17	4.5	49.2
	8	7.56	1	470	ND	45	5.5	16	4.5	49.8
	9	7.59	1	473	ND	48	5.5	17	4.5	49.2
	10	7.48	1	467	ND	49	5.6	18	4.5	49.1
	11	7.43	1	488	ND	46	5.5	18	4.5	48.3
	12	7.43	1	476	ND	47	5.5	17	4.5	50.2
	13	7.53	1	481	ND	47	5.5	17	4.6	49.2
	14	7.50	1	472	ND	50	5.4	17	4.5	48.6
	15	7.45	1	481	ND	50	5.5	17	4.4	49.0
Mar-25	1	7.70	1	471	ND	49	5.6	19	4.3	49.9
	2	7.40	1	479	ND	48	5.4	17	4.5	48.8
	3	7.41	1	491	ND	49	5.4	17	4.4	48.6
	4	7.40	1	475	ND	48	5.4	17	4.5	47.3
	5	7.48	1	473	ND	50	5.5	18	4.5	47.2
	6	7.58	1	478	ND	49	5.5	17	4.6	45.4
	7	7.50	1	469	ND	48	5.4	16	4.5	48.1
	8	7.44	1	469	ND	46	5.4	17	4.4	50.4
	9	7.65	1	478	ND	45	5.5	16	4.5	50.5
	10	7.57	1	467	ND	48	5.4	16	4.3	50.0
	11	7.46	1	494	ND	47	5.4	17	4.4	48.7
	12	7.40	1	489	ND	45	5.5	17	4.6	48.6
	13	7.56	1	477	ND	46	5.5	18	4.5	48.3
	14	7.52	1	476	ND	46	5.4	16	4.4	49.3
	15	7.39	1	476	ND	47	5.5	17	4.4	48.8
Apr-25	1	7.72	1	485	ND	42	5.6	18	4.5	48.8
	2	7.43	1	475	ND	45	5.5	17	4.4	48.7
	3	7.52	1	471	ND	46	5.5	17	4.5	48.3
	4	7.48	1	464	ND	51	5.5	17	4.5	48.5

	5	7.52	1	471	ND	49	5.5	18	4.5	47.7
	6	7.53	1	472	ND	50	5.5	17	4.5	47.5
	7	7.55	1	477	ND	45	5.6	17	4.6	45.6
	8	7.54	1	479	ND	46	5.6	18	4.4	46.0
	9	7.53	1	476	ND	44	5.5	17	4.4	46.9
	10	7.41	1	479	ND	48	5.5	17	4.5	46.5
	11	7.46	1	476	ND	49	5.6	16	4.5	48.1
	12	7.53	1	485	ND	51	5.4	18	4.4	48.2
	13	7.53	1	469	ND	51	5.5	17	4.4	48.2
	14	7.58	1	487	ND	50	5.4	17	4.5	47.1
	15	7.60	1	488	ND	51	5.5	17	4.5	48.6
May-25	1	7.57	1	450	ND	45	5.6	17	4.5	47.6
	2	7.61	1	466	ND	47	5.6	17	4.4	47.7
	3	7.60	1	453	ND	45	5.6	16	4.4	46.5
	4	7.59	1	450	ND	47	5.6	17	4.4	44.2
	5	7.59	1	476	ND	44	5.6	17	4.3	47.1
	6	7.53	1	471	ND	45	5.6	16	4.5	48.3
	7	7.63	1	455	ND	46	5.6	18	4.4	46.4
	8	7.53	1	484	ND	52	5.6	16	4.4	49.3
	9	7.66	1	452	ND	48	5.6	17	4.5	45.9
	10	7.58	1	421	ND	47	5.6	17	4.3	45.8
	11	7.59	1	447	ND	46	5.6	17	4.5	45.0
	12	7.62	1	474	ND	45	5.6	17	4.5	49.2
	13	7.61	1	463	ND	44	5.6	17	4.4	45.4
	14	7.53	1	436	ND	46	5.6	17	4.5	50.3
	15	7.59	1	465	ND	47	5.6	18	4.5	48.9
Jun-25	1	7.60	1	436	ND	44	6	18	4.5	44.4
	2	7.66	1	445	ND	44	5.6	16	4.5	44.9
	3	7.61	1	441	ND	43	5.6	17	4.5	46.0
	4	7.64	1	461	ND	43	5.6	18	4.4	45.0
	5	7.58	1	444	ND	46	5.6	17	4.4	50.2
	6	7.64	1	443	ND	44	6	17	4.4	44.3
	7	7.62	1	444	ND	43	5.6	17	4.5	44.2
	8	7.64	1	447	ND	43	5.6	17	4.5	48.5
	9	7.57	1	463	ND	45	5.6	17	4.3	46.5
	10	7.64	1	445	ND	46	5.6	17	4.5	47.9
	11	7.55	1	466	ND	44	5.6	18	4.4	46.5
	12	7.62	1	455	ND	46	5.7	16	4.5	45.9
	13	7.57	1	448	ND	44	5.6	18	4.4	47.5
	14	7.60	1	439	ND	46	6	17	4	50.4
	15	7.66	1	464	ND	49	5.6	18	4.5	44.1

Note: - Analysis carried out by NABL recognized laboratory i.e. M/s. JP Associates & Laboratories.

Locations: 1- Ravendli Nallah before Reject Coal Area (CSTPS, Chandrapur)

2- Ravendli Nallah at Reject Coal Area (CSTPS, Chandrapur)

3- After Grit filter on Ranvedli Nallah

4- Ravendli Nallah before Erai river at Nagpur Road

5- Motghat Nallah near GAD office

6- Motghat Nallah before Erai river at Ash Bund Road

7- Storm water drain coming from unit 8 and 9 before security gate Nagpur Road

8- Storm water drain coming unit from 8 and 9 at security gate Nagpur Road

9- Storm water drain coming from unit 8 and 9 before meeting to river

10- Storm water drain coming from unit 3 to 7 CHP Site

11- confluence point of Ranvendli Nallah to Erai river

12- Erai River near Datala bridge pumping station

13- Nallah at Chhota Nagpur

14- Nallah at Vichoda

15- Nallaha at Ash Bund Chowki



CHANDRAPUR SUPER THERMAL POWER STATION CHANDRAPUR

“IMS: Quality, Environment, Occupational Health & Safety Policy”

ISS/REV.NO.: 02/00

Chandrapur Super Thermal Power Station of MAHAGENCO is committed to generate Economical, Reliable and Sustainable Power and continual improvement of the Integrated Management System through -

- providing environment friendly, safe & healthy working conditions for the prevention of adverse impact on quality, environment and work-related injury and ill health;
- adopting best organizational practices specific to the strategic directions through risks and opportunities analysis for all our processes;
- fulfilling legal and other requirements;
- eliminating quality issues, environmental aspects, occupational health & safety hazards to reduce risks;
- ensuring up gradation of skill, knowledge & competence of our staff and adoption of new technology;
- ensuring consultation and participation of workers/workers' representatives.

Date: 09.04.2021

Chief Engineer
CSTPS; Chandrapur



Certificate of Registration

GCPL hereby certifies that

Reg. No.: IMS110XX32022616

MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED

Chandrapur Super Thermal Power Station Urjanagar, Chandrapur,
Dist. – Chandrapur, Maharashtra, 442 404, India

has been independently assessed and is compliant with the requirement of

Integrated Management System

(ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001:2018)

This certificate is applicable to the following product or service ranges:

Generation of Electricity From Coal Based Thermal Power Plant.

Initial Issue Date : 20. Nov. 2023
Expiry Date : 19. Nov. 2024

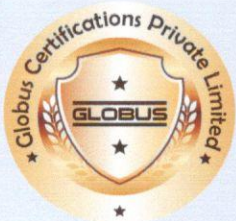
Current Issue Date : 20. Nov. 2023
Valid Period : 20. Nov. 2023 ~ 19. Nov. 2026

(Certificate validity is subject to clearing successful surveillance audit)

IMS Integrated
Management
Systems

Signed for and on behalf of GCPL

Globus Certificate of Registration Globus Certificate of Registration



To verify the validity of this certificate please visit www.gcert.co

Surveillance audits shall be conducted at least once a calendar year, except in re-certification years. This is to certify that the Management Systems of this company has been found to conform to the above. If the certified client does not allow surveillance, re-certification audits, certificate should be returned to GCPL. This certificate remains the property of GCPL and this certificate is recognized by GCPL.

Globus Certifications Private Limited- www.gcert.co || info@gcert.co



Gd01 V2



CERTIFICATE

This is to Certify that the Management System of
**MAHARASHTRA STATE POWER GENERATION
 COMPANY LIMITED**

**CHANDRAPUR SUPER THERMAL POWER STATION URJANAGAR,
 CHANDRAPUR, DIST. – CHANDRAPUR-442404, MAHARASHTRA (INDIA)**

has been audited and found to comply with the requirements of:

**ISO 9001:2015
 Quality Management System**

For the scope of activities described below:

**GENERATION OF ELECTRICITY FROM COAL BASED
 THERMAL POWER PLANT.**

IAF Code: 25

Certificate No: EGQ/2311MT/1450

<u>Date of initial registration</u>	<u>Date of this Certificate</u>	<u>Surv. audit on or before/Certificate expiry</u>	<u>Re-certification Due</u>
22.11.2023	22.11.2023	21.10.2024	21.11.2026

Validity of this certificate is subject to successful completion of surveillance audit on or before due date,
 in case surveillance audit not conducted this certificate shall be suspended/cancelled.

Director

For verification and updated information concerning the present certificate visit to www.thehawk-eye.com

This Certificate is the property of Hawk Eye Certifications Pvt. Ltd. and shall be returned immediately when demanded.





CERTIFICATE

This is to Certify that the Management System of
**MAHARASHTRA STATE POWER GENERATION
 COMPANY LIMITED**

**CHANDRAPUR SUPER THERMAL POWER STATION URJANAGAR,
 CHANDRAPUR, DIST. – CHANDRAPUR-442404, MAHARASHTRA (INDIA)**

has been audited and found to comply with the requirements of:

**ISO 45001:2018
 Occupational Health & Safety Management System**

For the scope of activities described below:

**GENERATION OF ELECTRICITY FROM COAL BASED
 THERMAL POWER PLANT.**

IAF Code: 25

Certificate No: EGO/2311MT/1452

<u>Date of initial registration</u>	<u>Date of this Certificate</u>	<u>Surv. audit on or before/Certificate expiry</u>	<u>Re-certification Due</u>
22.11.2023	22.11.2023	21.10.2024	21.11.2026

Validity of this certificate is subject to successful completion of surveillance audit on or before due date, in case surveillance audit not conducted this certificate shall be suspended/cancelled.

Director

For verification and updated information concerning the present certificate visit to www.thehawk-eye.com

This Certificate is the property of Hawk Eye Certifications Pvt. Ltd. and shall be returned immediately when demanded.

Hawk Eye Certifications Private Limited
 A-27/H, Sector-16, Noida-201301, U.P., (India)
www.thehawk-eye.com
 email: admin@thehawk-eye.com





CERTIFICATE

This is to Certify that the Management System of
**MAHARASHTRA STATE POWER GENERATION
 COMPANY LIMITED**

**CHANDRAPUR SUPER THERMAL POWER STATION URJANAGAR,
 CHANDRAPUR, DIST. – CHANDRAPUR-442404, MAHARASHTRA (INDIA)**

has been audited and found to comply with the requirements of:

**ISO 14001:2015
 Environment Management System**

For the scope of activities described below:

**GENERATION OF ELECTRICITY FROM COAL BASED
 THERMAL POWER PLANT.**

IAF Code: 25

Certificate No: EGE/2311MT/1451

<u>Date of initial registration</u>	<u>Date of this Certificate</u>	<u>Surv. audit on or before/Certificate expiry</u>	<u>Re-certification Due</u>
22.11.2023	22.11.2023	21.10.2024	21.11.2026

Validity of this certificate is subject to successful completion of surveillance audit on or before due date,
 in case surveillance audit not conducted this certificate shall be suspended/cancelled.

Director

For verification and upated information concerning the present certificate visit to www.thehawk-eye.com

This Certificate is the property of Hawk Eye Certifications Pvt. Ltd. and shall be returned immediately when demanded.





National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

**MWFETL, CHANDRAPUR SUPER THERMAL POWER
STATION, MSPGCL**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

CSTPS, URJANAGAR, CHANDRAPUR, MAHARASHTRA, INDIA

in the field of

TESTING

Certificate Number: TC-6526

Issue Date: 28/02/2024

Valid Until: 27/02/2026

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: MAHARASHTRA STATE POWER GENERATION COMPANY LIMITED

Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer

Cladding at Junction house – JH01



Cladding at DST-02



Cladding at PC tail end, BC-04, BC-02 & WLS



Cladding at Surge Hopper at Bhatadi



DSS sprinklers at BC-01 Head end



DSS sprinklers at BC-01 Tail end



DSS sprinklers at PC-01 Tail end



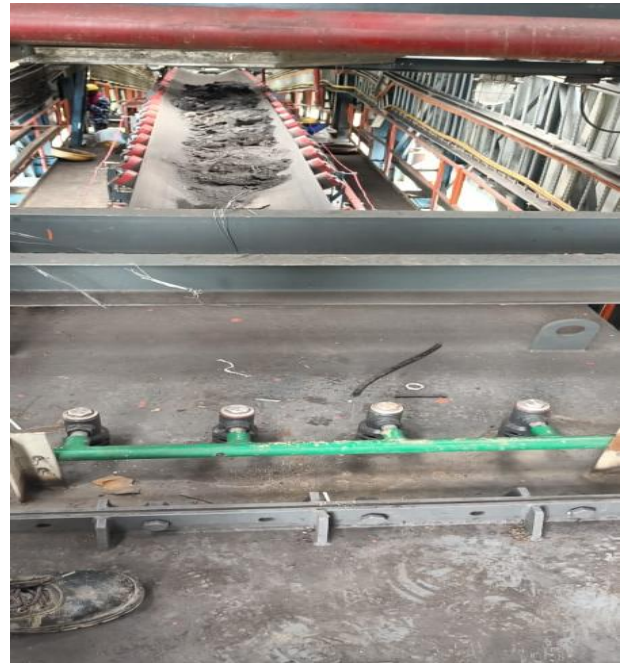
DSS sprinklers at Apron Feeder



DSS sprinklers at BC-04 Tail end



DSS sprinklers at BC-02 Head end



DSS sprinklers at BC-02 Tail end



DSS sprinklers at PC Head end



DSS sprinklers at Reversible belt Feeder BC-03 at WLS



DSS sprinklers at WLS / Clam shell gate

