

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
WEST ZONE BENCH, PUNE

ORIGINAL APPLICATION NO.53/2020

IN THE MATTER OF:

Jivabhai Ganeshbhai Bada Applicant

VERSUS

State of Gujarat & Ors. Respondents

INDEX

S.No.	PARTICULARS	PAGE NO.
1.	Reply to Original Application on behalf of the Respondent No.5 <i>Electrotherm (India) Ltd.</i>	1-33
2.	<u>ANNEXURE R-1</u> True Copy of list of equipments installed in Electrotherm (India) Ltd. plant at Samkhyali, Taluka Bhachau, Kutch, Gujarat for environment compliance, protection and management	34-56 F
3.	<u>ANNEXURE R-2</u> True Copy of Government of India, Ministry of Environment and Forests (I.A. Division), letter dated 27.01.2010	57-63
4.	<u>ANNEXURE R-3</u> True Copy of Gujarat Pollution Control Board renewal letter dated 11.05.2016	64-72
5.	<u>ANNEXURE R-4 (Colly)</u> True Copy of ' <i>Royal Environment Auditing & Consultancy Service, Rajkot</i> ' air emission report for	73-147

	the period between April, 2019 to July, 2020	
6.	<u>ANNEXURE R-5</u> True Copy of the ' <i>V.V.P. Engineering College, Rajkot</i> ' annual Environment Audit Report for year 2018-19	148-257
7.	<u>ANNEXURE R-6</u> True Copy of ' <i>Atmiya Institute of Technology & Science, Rajkot</i> ' annual Environment Audit Report for year 2019-20	258-364
8.	<u>ANNEXURE R-7</u> True Copy of Purchase Order issued by M/s Sanghi Industries Ltd., Sanghipuram, Kutch, Gujarat.	365-367
9.	<u>ANNEXURE R-8 (Colly)</u> True Copy of photographs of agricultural fields adjacent to the iron and steel plant of Electrotherm (India) Ltd. at Samkhyali Taluka Bhachau, Kutch, Gujarat	368-373
10.	<u>ANNEXURE R-9 (Colly)</u> True Copy of ' <i>Royal Environment Auditing & Consultancy Service, Rajkot</i> ' Water and waste-Water Analysis Reports for the period between April,2019 to July,2020	374-396
11.	<u>ANNEXURE R-10 (Colly)</u> True Copy of ' <i>Royal Environment Auditing & Consultancy Service, Rajkot</i> ' Noise Level Monitoring reports for the period between April, 2019 to July, 2020	397-411
12.	<u>ANNEXURE R-11</u> True Copy Gujarat Pollution Control Board notice dated 27.06.2018	412

13.	<u>ANNEXURE R-12</u> True Copy of Electrotherm (India) Ltd. Compliance Letter dated 02.07.2018	413-420
14.	Vakalatnama & Board Resolution	421-422

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ORIGINAL APPLICATION NO.53/2020

IN THE MATTER OF:

JIVABHAI GANESHBHAI BADA APPLICANT

VERSUS

STATE OF GUJARAT & ORS. RESPONDENTS

REPLY TO ORIGINAL APPLICATION ON BEHALF OF THE
RESPONDENT NO.5 ELECTROTHERM (INDIA) LTD.

PRELIMINARY SUBMISSION:

1. That by its order dated 16.09.2020, the Principal Bench of National Green Tribunal, New Delhi while issuing notice in the aforesaid Original Application was pleased to record as under:

"The issue raised by way of filing this application is air, noise and water pollution created by the respondent no.5-*Electrotherm (India) Ltd.* in the nearby vicinity and also throwing poisonous fuel through chimney and in the nearby area, layer of the dust and the black smoke emitted which affect the nearby agricultural crops, tree and its spur and also affect the water and health of the nearby residents. A substantial question of environment has been raised."

②

2. That the answering Respondent plant do not emit any kind of poisonous fuel, as alleged by the Applicant. It is submitted that during the normal operation, no black/dark smoke is emitted/comes out of the plant of the answering Respondent. It's only when the plants/equipments/machineries installed for the purification/control of the air emission (inside the plant) goes for their periodical maintenance/overhauling that for a very short period, some dark smoke comes out of the chimney. However, this is only a temporary phenomenon and happens only during the maintenance period. The entire maintenance procedure/work takes few hours and then the plant/equipment began its normal operation/functioning, whereupon the dark/black smoke disappears. It is relevant to mention here that the answering Respondent Company has taken/installed all checks and measures, as directed/instructed, by Central Pollution Control Board (hereinafter referred to as the 'CPCB') and Gujarat Pollution Control Board (hereinafter referred to as the 'GPCB'), from time to time, for the control of air, water and noise pollutions.
3. That the steps taken by the answering Respondent for the control of air, water and

③

noise pollution will be narrated/discussed in detail, in the following/ subsequent paras of the present reply. It is pertinent to mention here that the answering Respondent is in no way, involved in spread of pollution, of any kind/nature, whatsoever. This is apparent from the fact that the villagers/farmers, living in the vicinity of answering Respondent plant have never approached any Court/Tribunal either jointly with Applicant or even individually seeking redressal of any issue/grievance concerning air, water or noise pollution emanating from the plant of the answering Respondent.

4. It is respectfully submitted that the Applicant herein has not approached this Hon'ble Tribunal with the clean hands. The Applicant herein is a local strong man, who harbors ill/malicious intention towards the answering Respondent Company, for not having his way, in the matter of grant of local contracts by the company. This is apparent from the fact that but for the Applicant, no other farmers/cultivators/villagers of the nearby areas have chosen to join Applicant as a party, before this Hon'ble Tribunal in the present Original Application.

(4)

5. That the malafide intention of Applicant can be seen from the fact that he, in his present Original Application has sought various reliefs/directions from this Hon'ble Tribunal including a direction '*to direct respondent authority to decide the application of the applicant dated 03.12.19 within stipulated time period*'. The specific mention of aforesaid prayer (F) of the O.A. is relevant, to show to this Hon'ble Tribunal that the Applicant has no concern of environment and as a matter of fact is concerned only about the worker politics of the Company. It is submitted that in his application dated 03.12.2019 (addressed to Collector Bhuj), the Applicant herein has allegedly complained about the workers of the Company being made to work for more than 8 hours etc., which though false, has no connection whatsoever with his so-called concern for protection of environment.
6. That with a view to create problems/trouble for the answering Respondent Company, the Applicant purposefully made the application dated 03.12.2019 (*@Pgs.108-112 of O.A. File*), so as to force, the answering Respondent company to succumb to his illegal demands. The following averment of Applicant's own

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application dated 03.12.2019 would show that the Applicant has no concern for the environment and as a matter of fact has taken shield of environmental provisions to arm twist the answering Respondent to serve his unethical intentions:

“.....The company is also getting work from labourers for more than 12 hours instead of 8 hours and without paying the minimum pay scale. There are instances of injury to the worker because of the furnace and machineries of the company. In spite of this fact, the company is not taking any precautionary measures to prevent the injury to the workers. As per the regulations of the Government, so far employment is concern, the priority to be given to the local residents however the company is employing the workers from out of state.

7. That Applicant has alleged in the present application that the answering Respondent Company iron & steel plant at Bhuj, Gujarat is causing air, water and noise pollutions. In this regard, it is submitted that the said allegations are bereft of any merits; and is false and is hereby denied. It is relevant to mention here that the answering Respondent has taken all necessary measures, by installing state-of-art plants, equipments

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and machineries for the prevention of air and water pollutions.

8. That the air emission at Kutch plant of the answering Respondent has always been well within the limits provided/prescribed by the Central Pollution Control Board (CPCB) and Gujarat Pollution Control Board (GPCB). Further, the answering Respondent plant is a zero-water discharge plant, meaning thereby no water goes out of the plant. The water discharged is internally recycled and reused. The answering Respondent iron & steel plant at Kutch is conforming to all the parameters/requirements/measures put in place by the C.P.C.B. and G.P.C.B. for the environment protection. A list of equipments installed at the answering Respondent iron & steel plant at village Samkhyali, Taluka Bhachau, Kutch, Gujarat for Environment Compliance, Protection and Management is annexed as Annexure R-1. (pg no-34-56F)

MEASURES TAKEN FOR CLEAN AIR:

9. That the Ministry of Environment, Forests (I.A. Division), Government of India vide its letter dated 27.01.2010, while granting permission for expansion of Steel Plant (at Milestone No.310 of NH No.8A, village

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Samkhayali, Taluka Bhachau, Kutch, Gujarat) directed the answering Respondent, as a specific condition, to keep the air emission level below $100\text{mg}/\text{Nm}^3$. Relevant portion of the Ministry of Environment and Forest, G.O.I. letter dated 27.01.2020 reads as under:

"A. SPECIFIC CONDITION:

- i) Efforts shall be made to reduce RSPM levels in the ambient air and a time bound action plan shall be submitted. On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks and sufficient air pollution control devices shall be provided to keep the *emission levels below $100\text{ mg}/\text{Nm}^3$* . Ambient air, stack and fugitive emission reports shall be submitted to the Ministry's Regional Office at Bhopal, GPCB and CPCB."

A copy of the aforesaid Ministry of Environment and Forests (I.A. Division), Government of India letter dated 27.01.2010 is annexed as Annexed R-2. (page-57-63)

10. That the Gujarat Pollution Control Board vide its letter dated 11.05.2016, while renewing its Consolidated Consent and Authorization (CC&A) (*in exercise of its power u/S.21 of the Air (Prevention and Control of Pollution)*

⑧

Act, 1981; and u/Rule 5(4) of the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, as amended from time to time under the Environment (Protection) Act, 1986) to the answering Respondent plant for a further period of 5 years (till 22/03/2021) prescribed/directed for various measures/parameters to be maintained including the parameter of maintaining the 'PM level of 100mg/Nm³, SO₂ level of 100 ppm & NO_x level of 50ppm' in Reheating Furnace, Quantifier, AFBC Boiler (1&2) of Power Plant, D.G. Set, Rotary Kiln No.1 (WHR B), Boiler, Blast Furnace, Annealing Furnace, Sinter Stack, Organ Oxygen Decarbonisation System, AOD etc. A copy of the aforesaid renewal letter dated 11.05.16 is annexed as Annexure R-3. (pg no-64-72)

11. It is respectfully submitted that the air emission level, at the answering Respondent Steel Plant (at Milestone No.310 of NH No.8A, village Samkhayali, Taluka Bhachau, Kutch) has always remained within the permissible limits of *below 100 mg/Nm³*, prescribed by the Regulatory Authorities. It is relevant to mention here that in the answering Respondent iron & steel plant at Kutch, there is a three tier-system for monitoring and checking of

⑨

the air quality. The three tier system consists/provide for daily, monthly & yearly monitoring reports of air quality of the plant, by the separate expert agencies/expert body/units. The three tier system prevailing in the answering Respondent plant is described in detail hereunder, which is as follows:

I. CONTINUOUS EMISSION MONITORING SYSTEM (FOR DAILY) MONITORING OF AIR QUALITY:

12. That the Central Pollution Control Board vide its letter No.B-29016/04/06PCI-1/5401 dated 05.02.2014 issued directions (u/s.18 (1)(b) of the Water and Air Acts) to the State Pollution Control Boards and the Pollution Control Committees, for directing 17 categories of industries including the Iron & Steel industry for installation of online effluent quality and emission monitoring systems, to help tracking the discharges of pollutants from these units. The aforesaid direction required/ envisaged for:

- a) Installation of online emission quality monitoring system in for measurement of the parameters, Particulate Matter, NH₃ (Ammonia), SO₂ (Sulphur Dioxide), NO_x (Oxides of Nitrogen) and other sector specific parameters and transmission of online data so generated simultaneously

(10)

to State Pollution Control Board/
Pollution Control Committee and Central
Pollution Control Board as well.

- b) Installation of surveillance system with industrial grade IP (Internet Protocol) cameras having PAN, Tilt, Zoom (PTZ) with leased line real time connection for data streaming and transmission of the same in case of industries claiming Zero Liquid Discharge (ZLD).

13. That the aforesaid installations were directed to be made for monitoring of the stack of air emissions, by using the Continuous Emission Monitoring system (hereinafter referred to as "CEMS"). In line with the Government of India, Ministry of Environment, Forest and Climate change guidelines, the Regulatory Authority of respective states (i.e. the State Pollution Control Boards and the Pollution Control Committees) have prescribed the standards for emissions/discharges of various pollutants by the industries including the Iron & Steel industry, as notified under the Environment (Protection) Act, 1986. The aforesaid compliance monitoring was devised to ensure that the industries comply with the stipulated norms of emissions/effluent discharges.



14. That the Continuous Emission Monitoring System (hereinafter referred to as the 'CEMS') comprises of total equipment necessary to determine the concentration of gaseous emission and/or particulate matter concentration and/or emission rate using analytical measurements and a computer program to provide results in units of the applicable emission limits or standards. Data recorded/observed is gathered either through analog outputs to a recording system or send directly to a DAS (Data Acquisition System) for storage and onward transmission. The data acquisition system includes special modules for data treatment and its transmission to the Central Data Acquisition and Handling System, which send the regular data to the Continuous Emission Monitoring Systems of the S.P.C.B./C.P.C.B. central office.
15. That in order to regulate compliance by the industries, the industries were made to exercise self-monitoring & compliance; and were directed to transmit the effluent and emission quality data to the Regulatory Authorities (State Pollution Control Boards and Central Pollution Control Board) on continuous basis. For the strengthening of monitoring and compliance through self-

(12)

regulatory mechanism, an online emission and effluent monitoring systems were directed to be installed and operated by all the 17 industries. The industries were made to do the verification, validation and accuracy check of the values indicated by the online devices. For regulatory, and for the purpose of actions to be taken against the non-complying industries/facilities, the existing method of sampling, analysis and related procedures under the existing statutes were continued, until further direction.

16. That accordingly, every 15 minutes data of air emission/discharge of the Iron & Steel plant of answering Respondent, collected on the Central Monitoring Emission System (CEMS) is uploaded on the servers of the Regulatory Authorities (i.e. the Central Pollution Control Board and the Gujarat Pollution Control Board). Thus, round the clock air emission data of the answering Respondent (iron & steel) plant is made available to the Central Pollution Control Board and Gujarat Pollution Control Board.

II. THIRD PARTY ENVIRONMENTAL AGENCY (MONTHLY) MONITORING OF AIR QUALITY:

17. That a third-party Environmental Agency named 'Royal Environment Auditing & Consultancy

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Service' has been entrusted with the work of conducting monthly inspection, sampling and checking of the plant of the answering Respondent, for the collection of air emission/discharge data. Pursuant to collection of air emission data, the third-party agency prepares its monthly air, water and noise emission reports and then submits the same to the answering Respondent. As and when demanded/required, the aforesaid reports are kept ready for the inspection and perusal of the concerned Regulatory Authorities/ Pollution Control Board. A perusal of monthly air emission/discharge report for preceding two years will show that the air emissions at the Kutch (iron & steel) plant has always been within the limits, permitted by the Regulatory Authorities. A copy of the Environmental Report of preceding years (i.e. between April, 2019 to July, 2020) prepared by 'Royal Environment Auditing & Consultancy Service, Rajkot' is annexed as Annexure R-4 (copy). (page no-73-147)

III. ENVIRONMENTAL AUDIT REPORT (ANNUAL):

18. That every year, the Gujarat Pollution Control Board under an environment audit scheme introduced by the Hon'ble High Court

of Gujarat (vide orders dated 20.12.96, 13.3.97 & 16.9.97) appoints an independent expert agency/educational institution, as an Environmental Auditor for conducting the environment audit of answering Respondent plant. The environmental audit report prepared by the auditor is then submitted to the Gujarat Pollution Control Board for its perusal and necessary action.

19. That it is relevant to mention here that every year, the Gujarat Pollution Control Board appoints a new expert educational institution, as its 'Environmental Auditor' to conduct the environmental audit of answering Respondent Iron & Steel Plant. Thus, once an educational institution is appointed as an Environmental Auditor, it will never be repeated/re-appointed again to conduct the environmental audit of the same industry.

20. That for the year 2018-2019, the annual environmental audit came to be conducted by the 'V.V.P. Engineering College, Vajdi-Virda, Rajkot'; whereas the environmental audit for the year 2019-2020 was conducted by 'Atmiya Institute of Technology & Science, Rajkot'. Again, perusal of aforesaid two

(15)

environmental audit reports would show that the air emissions/discharges from the (iron & steel) plant of the answering Respondent have been with the permissible limits set, by the Regulatory Authorities. The relevant portion of 'Adequacy Certificate' (for year 2019-20) issued by the 'Atmiya Institute of Technology & Science, Rajkot' to answering Respondent plant, for the environmental management system, reads as under:

"As per the directions of Hon'ble High Court in Environmental Audit Scheme and based on personal monitoring (Collection of samples, analysis etc.). We certify that the Environmental Management System provided by this industry for the products and capacity as stated above is ***adequate and efficacious to achieve the quality of effluents (Air + Waste Water + Solid Waste)*** as specified/required consent/ Notifications by GPCB, for following quantity of effluents."

A copy of the aforesaid Environmental Audit Reports for the years 2019-19 & 2018-19) are annexed as ^(page no-148-257) Annexure R-5 & ^(page no-258-364) Annexure R-6 respectively.

21. That the fly ash, a residue of coal, used in the power plant (inside the campus) for generating electricity, required for the Iron & Steel plant is stored in the huge container

①6

erected specifically for this purpose, inside the plant. The majority of stored fly ash then is sold to the nearby cement plants such as Sanghi Industries Ltd., Sanghipuram, Kutch, Gujarat. Some of the fly ash is also used in manufacturing of bricks, inside the plant campus. Thus, the fly ash generated inside the campus is taken care of, in the aforesaid manner, to ensure its 100% disposal/utilization. A copy of Purchase Order issued by Sanghi Cements is annexed as Annexure R-7. (pag no- 365-367)

MEASURES TAKEN TO CURB WATER POLLUTION:

22. That the answering Respondent iron & steel plant (at Samkhiyali, Kutch) is a zero-waste water plant. In other words, no water, apart from the occasional rain water goes out of the campus of the answering Respondent. The water used, is recycled and then is reused for industrial as well as domestic uses. Treated waste-water is also used in sprinkling of open areas and for watering of large number of flora, plants and trees standing/planted inside the plant premises. Thus, the answering Respondent (iron & steel) plant at Samkhiyali, Kutch causes no pollution, either to the nearby areas/fields

(17)

or to the underground water system, since no hazardous water goes out of the campus. Photographs of agricultural fields adjacent to the iron & steel plant of the answering Respondent is annexed as Annexure R-8 (colly). (pg no-368-413)

23. That the water is used in the answering Respondent plant primarily for cooling the molten iron. The iron is melted in the furnace at a very high temperature and is then cooled with the help of water, for manufacturing of various iron and steel by-products. The water once used for cooling is then recycled and reused again and again for cooling. The waste water emanating from the domestic use is treated inside the campus and then reused. Thus, the recycling and reuse of water ensures no water pollution either within the campus of the plant or outside of it.
24. Further, the answering Respondent has installed the state of art Sewage Treatment Plant (S.T.P.) and Effluent Treatment Plant (E.T.P.) for sewage and effluent treatment at the (iron & steel) Plant campus of the answering Respondent at Samkhiyali, Kutch. The Gujarat Pollution Control Board from time

(18)

to time conducts test of quality of water and waste-water emanating from the (iron & steel) plant of the answering Respondent. It is relevant to mention here that in all the tests conducted and reports issued by the Gujarat Pollution Control Board (qua answering Respondent Samkhiyali, Kutch plant), the water and waste-water analysis reports have shown results within the prescribed/testing limits set by the G.P.C.B. A copy of Water and waste-Water Analysis Reports for the period between April, 2019 to July, 2020 are annexed as Annexure R-9 (Colly). (page no - 374-396)

25. That the answering Respondent has also installed the water purification and other ancillary plants for recycling and reuse of water inside its plant campus at Samkhiyali, Kutch. It is again reiterated that being a zero-water waste plant, there is no occasion for any water pollution to the nearby fields or to villages, from the answering Respondent plant. A perusal of the monthly and yearly reports compiled and prepared by independent expert agencies/institutions (mentioned and annexed hereinabove) would show that the answering Respondent plant causes no water

(19)

pollution in the areas, falling within the vicinity of its Samkhiyali, Kutch plant.

NOISE IS WITHIN THE PERMISSIBLE LIMITS:

26. That the noise level at the answering Respondent Kutch plant has always been within the permissible limits. The permissible noise level, average limit (in decibels) during day time is 75dB and during the night shift is 70dB. The monthly report of Ambient Noise Level Monitoring conducted by 'Royal Environment Auditing & Consultancy Service, Rajkot' show that the noise level has been within limits. Such as the report of Noise Level Monitoring for the month of August, 2020 is as under:

S.No.	Location Sampling	of	Noise Level Avg. in dB(A)	
	Time Sampling	of	Day Time (6AM-10PM)	Night time (10PM-6AM)
	Permissible Limits		75.0	70.0
1.	DIP Plant		72.1	58.4
2.	SMS		73.2	57.6
3.	Rolling Mill-1		70.4	55.4
4.	CPP Plant (Inside CCR)		69.3	55.3

(20)

Copies of Noise Level Monitoring reports from April, 2019 to July, 2020 are annexed as Annexure R-10 (Colly). (page no-397-411)

PARA-WISE REPLY:

(I)&(II). That the contents of paras (I) and (II) of the Original Application needs no reply.

(III). That the contents of Para (III) of the Original Application are wrong and are denied and the Applicant be put to the strict proof of the same. It is wrong and is denied that the air, noise and water pollution is occurring due to the Electrotherm (India) Ltd. is functioning and manufacturing iron, iron rod and D.I. Pipes etc., by melting the iron and other metals. In this regard, it is respectfully submitted that the Regulatory Authorities (G.O.I., Central Pollution Control Board and Gujarat Pollution Control Board) has framed/set up the guidelines/parameters for the discharge of air emission; permissible noise level; and for water pollutants from a Iron & Steel plant.

A bare perusal of daily air emission/discharge data collected/uploaded on the Continuous Emission Monitoring System

(21)

(uploaded on the server of CPCB and GPCB); as well as monthly and yearly environmental audit report (qua air, water and noise emissions) prepared by the independent expert agencies would show that the emissions level at answering Respondent Samkhiyali, Kutch plant have always within the limits set up/prescribed by the Regulatory Authorities (i.e. G.O.I., C.P.C.B. and G.P.C.B.).

(IV). That the contents of Para (IV) of the Application are wrong and are denied. It is wrong and is denied that the answering Respondent has violated rules or regulations related to the Environment Protection and the Applicant be put to the strict proof of the same. It is submitted that the documents/reports annexed with the present reply; and placed on the record of this Hon'ble Tribunal would show that the answering Respondent has been complying with all the guidelines/conditions put in place by the Environmental Regulatory Authorities. Answering Respondent thus categorically deny allegation of violation of laws concerning environmental protection, much less the acts and laws mentioned in the para under reply.

(V). That no substantial question of law relating to the environment and compensation has been

(22)

raised in the present Application. The present Original Applicant has been filed out of vengeance and with a malicious intention to made answering Respondent succumb to his ill intention and design. Hence, the present Application is liable to be rejected by this Hon'ble Tribunal.

- (1). That the contents of Para 1 of present Application being a matter of record needs no reply.
- (2). With reference to Para (2) of Application, it is submitted that the answering Respondent has not committed violation of any environmental laws, as alleged in the para under reply and the Applicant be put to the strict proof of the same. It is hereby reiterated that the answering Respondent (iron & steel) plant at Samkhyali, Kutch conforms to all the environmental and regulatory guidelines/parameters directed/suggested by the Regulatory Authorities (i.e. GOI, CPCB & GPCB). The answering Respondent herein craves leave of this Hon'ble Tribunal to refer and rely upon the contents of Preliminary Submissions in support of its contention of the para under reply. Rest of the contents of Para under reply are wrong

(23)

and are denied and the Applicant be put to the strict proof of the same.

(3.1). That the content of Para (3.1) is denied for want of knowledge and the Applicant be put to the strict proof of the same.

(3.2). With reference to Para(3.2), it is wrong and is denied that the Respondent No.5 (answering Respondent) company is creating air, noise and water pollution in the nearby areas. It is also wrong and is denied that the answering Respondent plant is throwing poisonous fumes through its chimney in nearby area. It is further wrong and is denied that the layer of dust and black smoke is emitted from the answering Respondent plant affects the nearby agricultural crop, tree and its spur and also affect the water and health of the nearby residents.

In this regard, it is submitted that a bare perusal of daily air emission report of monthly and yearly environmental audit report (qua air, water and noise emissions) prepared by the independent expert agencies would show that the air emissions at answering Respondent Kutch (iron & steel) plant have always been within limits, set up/prescribed

(24)

by the Regulatory Authorities (GOI, CPCB & GPCB).

The answering Respondent plant does not emit any poisonous fuel, as alleged. It is submitted that during normal operation, no black/dark smoke comes out of the plant of the answering Respondent. It's only when the plants/equipments/machineries installed for the purification/control of air emission (inside the plant) goes for their periodical maintenance/overhauling that for a short time, some dark smoke comes out of the chimney. However, this is only a temporary phenomenon and happens only during the maintenance period. The entire maintenance procedure/work takes few hours and then the plant/equipment began its normal operation/functioning, whereupon the dark/black smoke disappears.

The Applicant is trying to make mountain out of a mole hill. The Applicant, with malafide intention has taken pictures of chimney (smoke) while the maintenance/overhauling work of plant was undergoing/underway and has placed on record of this Hon'ble Tribunal to portray, as if, plant throws black smoke all the time, which is incorrect and is hereby categorically denied.

(25)

Further, the answering Respondent plant is a zero-waste water plant. The water used, is recycled and then is reused. Thus, the answering Respondent causes no pollution either to the underground water system or to the nearby areas/fields, since no water goes out of the campus nor dumped within the premises by any means. The use of treated water-water for plantation is also regulated.

It is relevant to mention here that the Applicant herein has not approached this Hon'ble Tribunal with the clean hands. The Applicant is a local strong man, who harbors ill intention towards the answering Respondent company, for not having his way, in the matter of award of local contracts by the company. Rest of the contents of para under reply unless specifically admitted hereinabove are wrong and are denied.

(3.3)to(3.8). That the contents of Paras (3.3) to (3.8) of Application are wrong and are denied. It is wrong and is denied that due to the pollution caused by the company, the Applicant's land became unfertile and non-use for the agricultural purpose. In this regard, it is submitted that the allegation of Applicant of causing pollution and his land

(26)

becoming unfertile and of non-use for agricultural purpose is a figment of his own imagination and hence is his afterthought. This can be seen from the fact that adjoining the answering Respondent (iron & steel) plant, there are several thousand acres of agricultural land of local agriculturist/villagers, however apart from Applicant, no other agriculturist/villagers of nearby areas have complained/filed case(s) before any Court/Tribunal complaining about the alleged infertility or non-use of their agricultural lands; nor have they chosen to join Applicant as a party in the present Original Application. Even the perusal of procured affidavits of two persons (@ Pgs.83-88 of Paper-Book) would reveal that they do not have any issue/complain about infertility or non-use of their lands for the agricultural purposes.

As stated hereinabove, the Applicant has made bald and baseless allegations against the answering Respondent of causing pollution in nearby areas. The allegation is not supported by documentary or material evidence. On the contrary, the answering Respondent has placed on the record of this Hon'ble Tribunal the monthly as well as

27

yearly emission data/records/reports of the independent expert agencies to show that the answering Respondent Company is complying/conforming to all environmental guidelines/directions of the Regulatory Authorities.

Further, the answering Respondent plant is a zero-waste water plant. The water used, is recycled and then is reused for industrial as well as the domestic uses. Thus, the answering Respondent plant causes no pollution either to the underground water system or to the nearby areas/fields. Rest of the contents of Para under reply unless specifically admitted hereinabove are wrong and are denied.

(3.9).With reference to Para (3.9) of the Original Application, it is submitted that the answering Respondent received on-line notice of Gujarat Pollution Control Board dated 27.06.2018, wherein the Board had issued certain directions to the answering Respondent under Section (31)(A) of the Air (Prevention and Control of Pollution) Act, 1991. The directions dated 27.06.2018 (of G.P.C.B.) were duly complied with by the answering Respondent; and a compliance letter dated 02.07.2018 in this regard came to be submitted to the Unit Head of Gujarat

28

Pollution Control Board, Gandhinagar. It is relevant to mention here that in the aforesaid compliance letter, the answering Respondent has brought to the kind attention to the Board that:

“.....we are completely following and abide by to comply all the instructions/recommendations if any issued by GPCB/CPCB Authority from time to time. As an environmentally conscious organization we are always committed for prevention and control of pollution, protection of environment and conservation of natural resources in all spheres of our operations.”

A copy of Gujarat Pollution Control Board notice dated 27.06.2018; and Compliance Letter of Electrotherm (India) Ltd. dated 02.07.2018 is annexed as Annexure R-11 & Annexure R-12 respectively. (page no- 412) (page no- 413 - 420)

(3.10)to(3.16). That the contents of Paras (3.10) to (3.16) of the Original Application are denied for want of knowledge. The Applicant however be put to the strict proof of the same. The Gujarat Pollution Control Board as well as Central Pollution Control Board receives regular emission updates (of every 15 minutes) from the answering Respondent on their servers via Continuous Emission

(29)

Monitoring system. This apart, G.P.C.B. get annual environmental audit of the answering Respondent (iron & steel) plant conducted from an independent expert agency. All reports concerning answering Respondent plant presented/submitted to G.P.C.B./C.P.C.B., unanimously reveals that the answering Respondent plant is complying to all the norms/guidelines/directions issued/ laid down by the Regulatory Authorities (GOI, CPCB, GPCB) from time to time. Thus, the G.P.C.B. being well aware of checks and measures undertaken by the answering Respondent for containment of air, water and noise pollution at its plant, may in its wisdom have found the application(s) of Applicant baseless and frivolous; and hence acted accordingly. Rest of the contents of Para under reply unless specifically admitted hereinabove are wrong and are denied.

4. That the grounds of the present Original Application are nothing but a mere repetition of what has been urged/pleaded/ submitted in Paras (I) to (V) and (3.1) to (3.16) of the present Original Application and hence has no merits and therefore needs no separate reply. The answering Respondent however craves leave of this Hon'ble Tribunal to refer and rely

(30)

upon the contents of Preliminary Submissions as well as the Para-wise reply of O.A., as if the same is reproduced herein.

In view of the aforesaid, the prayers are misconceived in facts as well in law. The present Original Application is devoid of any merits and hence deserves to be dismissed by this Hon'ble Tribunal. The answering Respondent further craves leave of this Hon'ble Tribunal to refer and reply upon the reply and accompanying documents filed hereto, in support of its submission, at the time of hearing.

DRAWN & FILED BY



(SANJEEV KUMAR & ASSO.)

Advocates for Respondent No.5

141, TOWER NO.10, SUPREME ENCLAVE,

MAYUR VIHAR PH-I, New Delhi-91

24321109, 43551006; 9810261109

Filed On: 10.11.20

krsanjeev213@yahoo.co.in

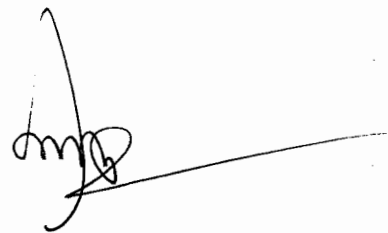
(31)

VERIFICATION

I, RAVINDRA SINGH....., the authorized representative of answering Respondent Electrotherm (India) Ltd., do hereby solemnly affirm and state that the contents of Para Nos.1 to 25 of Preliminary Submission of present reply; and para-wise reply to Paras (I) to (V) and Paras (1) to (4) of the Original Application are true and correct to the best of my knowledge and belief, derived from the official records maintained by the company in its usual course of business. Documents annexed with the reply are true copies of its originals. The last para of reply contains prayer clause.

Solemnly affirm at AHMEDABAD.

This 2ND day of November, 2020



For Respondent No.5

RITA D. GANDHI
NOTARY
GOVT. OF INDIA

2 NOV 2020

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
ZONE BENCH, PUNE

ORIGINAL APPLICATION NO. 53/2020

(32)

IN THE MATTER OF:

Jivabhai Ganeshbhai Bada Applicant

Versus

State of Gujarat & Ors. Respondents

AFFIDAVIT

I, Ravindra singh aged about 48 years son of Sri..Mundrika singh resident of Survey No.325, vill-Samakhayali , Kutch, Gujarat do hereby solemnly affirm and say as follows:

1. That I am Ravindra singh of the Respondent No.5 and am acquainted with the facts giving rise to the present case. I have been duly authorized by the Respondent No.5 Company and hence am competent to swear this affidavit. That I have perused the contents of Reply to the Original Application, which is being filed before this Hon-'ble Tribunal on behalf of the Respondent No.5.
3. I say that the statements of fact contained in said reply are true and correct to the best of my knowledge and belief, derived from the official records of the Respondent No.5. I further say that the documents/Annexures annexed to the Petition are true and correct.



(33)

Solemnly affirmed at AHMEDABAD

This 2ND day of November, 2020

DEPONENT

VERIFICATION:

I the deponent abovenamed do hereby verify that the content of my above affidavit is true and correct to the best of my knowledge and belief derived from the official records of the Respondent No.5, and no part thereof is false.

verified at AHMEDABAD

This 2ND day of November, 2020

DEPONENT

ELECTROTHERM (INDIA) LTD

Authorized Signatory



SOLEMNLY AFFIRMED
BEFORE ME
RITA D. GANDHI
NOTARY
GOVT. OF INDIA
2 NOV 2020



List of Equipment Installed for Environment Management System		
Sr.No	EMS System List	Total No.
1	AAQMS system installed for Ambient Air Quality Monitoring	1
2	Opacity Meter Installed for Stack Emission Monitoring	13
3	Gas Analyzer insatalled for Stack Emission Monitoring	462 0 9
4	Air Pollution Control Measure installed Like ESP	42
5	Air Pollution Control Measure installed Like Bag-Filter	110
6	Air Pollution Control Measure installed Like Cyclone Seperator	64
7	Air Pollution Control Measure installed Like FES 1&2	2
8	Water Sprinkler installed for Dust Emission Controlling	350
9	ETP installed for waste water recycling	1
10	STP Installed for Domestic Waste Water Recycling	2
11	Gas Cleaning Plant installed in BF plant for heavy dust Controlling	2
12	Road Cleaning Machine for ground cleaning	1
13	Digital Display Have installed in Main Gate for Stack Monitoring data displaying as per our Legal Complainece	1
14	Telescopic system installed for the Fly- Ash handling	3
15	Ash Conveying system installed	3
16	Green Belt development as per Complainece	178274 SQM
17	Environmental Monitoring Equipment Respirable Dust Sampler	2
18	Stack Monitoring Kit	2
19	Noise Monitor	1
20	Lux Monitor	1
21	Flue Gas Analyzer	1
22	Web Camera installed for ETP operation observation	1
23	Flow meter installed for ETP	1
24	Online Effluent Quality Monitoring System	1


 J.C.

Index

Sr. No.	Description	
1	List of Installed Air Pollution Control Device	
2	Photographs of Installed Air Pollution Control Device	
3	Online Digital Display Monitoring System	
4	List of Installed Online Monitoring system Details	
5	List of Sprinkler System and Photographs	
6	Green Belt Photographs	
7	Effluent Treatment Plant photographs	
8	Plantation details with Photographs	

Installed Air Pollution Control Equipment



36

- ❑ Installed various pollution control equipment's in plant with an investment of more than Rs. 18 Crores. Electrostatic Precipitators, Bag filters, Cyclones and wet scrubbers are installed as Air Pollution control devices in the Plant.

Sr. No.	Description	Type of Dust/Fly Ash	Focus area
A	SMS		
1	IF 1&2	Bag Filter-1	Fumes & Dust
2	IF 1,2 & 3	Bag Filter-2	Fumes & Dust
3	A.O.D-1	Bag Filter-3	Fumes & Dust
4	A.O.D-2	Bag Filter-4	Fumes & Dust
A	DIP		
1	Magnesium Treatment	Bag Filter-2	Magnesium Dust
2	Zinc Coating	Bag Filter-3	Zinc Dust
3	Magnesium Treatment	Bag Filter-2	Magnesium Dust
4	Zinc Coating	Bag Filter-3	Zinc Dust
5	Bitumins Coating	Bag Filter-4	Boiler Dust

Installed Air Pollution Control Equipment



37

Sr. No.	Description	Equipment Name	Type of Dust/Fly Ash
C	Sponge Iron (Kiln)		
1	Kiln-1	ESP-1	Iron & Coal
2	Klin-2	ESP-2 & Pneumatic Sys.	Iron & Coal
3	Cooler Discharge	Bag Filter-1	Sponge Iron
4	PSB	Bag Filter-2	Sponge Iron
5	PH	Bag Filter-3	Sponge Iron
6	Coal Circuit	Bag Filter-4	Coal
7	Iron Ore Circuit	Bag Filter-5	Iron Ore
8	Stock House	Bag Filter-5	Iron & Coal
9	Cooler Discharge	Bag Filter-1	Sponge & Coal
10	Coal Feeding End	Bag Filter-1	Iron & Coal
11	Cooling Discharge	Bag Filter-1	Sponge Iron

Installed Air Pollution Control Equipment



Sr. No.	Description	Equipment Name	Type of Dust/Fly Ash
D	Captive Power Plant		
1	AFBC Boiler 1&2	ESP-1&2	Fly Ash
2	ESP-1	Pneumatic Sys.& Silo	Fly Ash
3	Coal Crusher & Screen House	Bag Filter-1	Coal
4	Bunker 1&2	Bag Filter-2&3	Coal
5	Transfer House	Bag Filter-4	Coal
E	Blast Furnace		
1	Blast Furnace	GCP With Bag Filter	Fumes & Dust
2	Transfer Tower	Bag Filter-1	Iron & Coal
F	Sinter		
1	Sinter Head	ESP	Iron Fines & Coal
2	Sinter Tail	ESP	Iron Fines & Coal



39

Online Digital Display Data at Main Gate

- Online monitoring systems are installed in all the Flue Gas & Process.
- Results of online stack analyzer monitored are displayed at Company's gate and all CEMS data transmitted with CPCB/SPCB.
- A total of 12 flue gas stacks are installed and PM, SO₂ and NO_x is monitored in all the stacks.



List Of Installed Online Monitoring System Details



40

Sr. No.	Plant	Make for Gases	Make of Opacity Meter
1	Blast Furnace-1	Bhoomi Analyser's	IFI
2	CPP		Vayubodhan
3	Blast Furnace-2		Swann
4	Kiln-1		Vayubodhan
5	Kiln-2		IFI
6	Sinter Tail		Swann
7	Sinter Main		IFI
8	Annealing Furnace		
9	Day-Bin		
10	SMS-1		
11	SMS-2		
12	New SMS-1 Stack1		
14	Product Separation Bin	Bhoomi Analyzers	

Fume Extraction System Connected with Induction Furnace



Fume Extraction System Connected with Induction Furnace



42



Bag-Filter System Connected with FES at SMS



43



Fume Extraction System



Electrostatic Precipitator System at Sponge Iron Plant



45



Electrostatic Precipitator System at Sinter



Electrostatic Precipitator System at Captive Power Plant



47



Pneumatic Silo System for Collection of Fly-ash

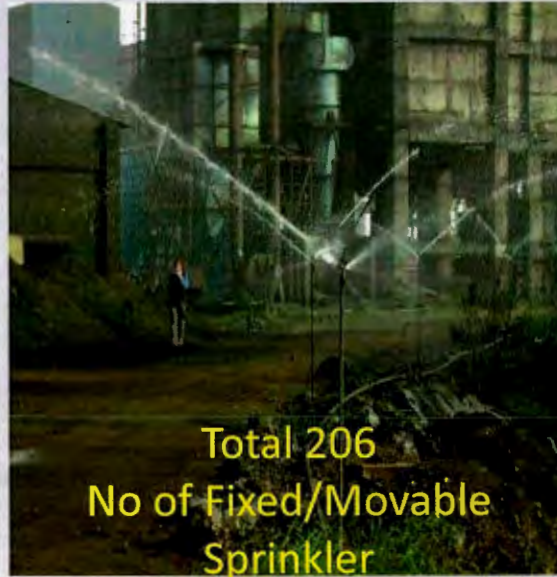


48



Covered Conveyor & Water Sprinkling System^{ET}

49



Sewage & Effluent Treatment Plant



20 KLD



20 KLD



50 KLD



Effluent Treatment Plant at Captive Power Plant



51



Effluent Treatment Plant at Captive Power Plant



52



Plantation Photographs



53







Green Belt Details



56

Year Wise Plantation Details from 2005 to 2020			
Sr. No.	Year	No. of Plants planted	Total Area (in acre.)
1	2005	8,720	91.0
2	2006	5,400	
3	2007	8,230	
4	2008	9,940	
5	2009	5,600	
6	2010	7,250	
7	2011	5,630	
8	2012	9,230	
9	2013	3,781	
10	2014	14,613	
11	2015-16	5,886	
12	2016-17	5,403	
13	2017-18	5,306	
14	2018-19	3,132	
15	2019-20	4,695	

56-A



56-B



166

56-C



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167

56-D

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168

56-E



2020/10/09 09:04

169

56-F



2020/10/09 08:50

T.C. Sub

F. No. J-11011/899/2008- IA II (I)
 Government of India
 Ministry of Environment and Forests
 (I.A. Division)

Paryavaran Bhawan
 CGO Complex, Lodhi Road
 New Delhi - 110 003

E-mail : pb.rastogi@nic.in
 Telefax : 011: 2436 7668

Dated 27th January, 2010

To,

✓
 M/s Electrotherm (India) Ltd.
 St. No. 72, Palodia (via Thaltej)
 Ahmedabad - 382115
 Gujarat

E-mail : electrotherm@vsnl.com / ho@electrotherm.com / skg@electrotherm.com
 Fax No. : 079-26768855. 02717-234616 / 234866

Subject : Expansion of Steel Plant at Milestone No. 310 of NH No. 8A, Village Samkhiyali, Taluka Bhachau, Kutch, Gujarat by M/s Electrotherm India Ltd. - Environment

Ref. : Your letter no. nil dated 8th June, 2009.

Sir,

Kindly refer your letter no. nil dated 8th June, 2009 alongwith project documents including Form I, Pre-feasibility Report and EIA/EMP after incorporating 'Terms of References' as per the EIA Notification, 2006 and related project documents and subsequent clarifications furnished vide communications dated 7th & 18th August, 2009, 7th September, 2009 and 9th November, 2009 regarding above mentioned project.

2.0 The Ministry of Environment and Forests has examined the application. It is noted that proposal is for the expansion of Steel Plant at Milestone No. 310 of NH No. 8A, Village Samkhiyali, Taluka Bhachau, Kutch, Gujarat by M/s Electrotherm India Ltd. Expansion will be carried out in 21.43 ha within the existing industrial premises of 101.46 ha. No national Park/wild life sanctuary/reserve forest is located within 10 km radius of the project site. Total cost of the project is Rs. 274.00 Crores. Sponge Iron, DI Pipes, Steel Rolling Mill, Induction Furnace are existing after getting 'No Objection Certificate' from Gujarat Pollution Control Board (GPCB). 'Consent to Establish' is also obtained from GPCB vide consent no. PC/CCA/KUTCH-294/28080 dated 13th September, 2006 and PC/CCA-KUTCH-294(3)/13208 dated 30th April, 2008. Environmental clearance for the existing plant [Pig Iron Plant and Captive Power Plant (30 MW)] is accorded vide Ministry's letter no. J-11011/503/2006-IA-II(I) dated 20th February, 2008. Following are the details of the existing and proposed facilities: ✓

See
 T.C

58

S. N.	Products	Production Capacity (MTPM)		
		Existing	Proposed	Total
1	Sponge Iron	6,000	18,000	24,000
2	D.I. Pipes	4,000	12,000	16,000
3	Captive Power	30 MW	15 MW	45 MW
	WHRB	6 MW	15 MW	21 MW
	FBC	24 MW		24 MW
4	Pig Iron (Blast furnace)	4,500	18,600	23,100
5	Sinter plant	--	32,400	32,400
6	Steel Rolling Mill	5,833	10,500	16,333
7	MS Billets / Bars	5,833	30,000	35,833
8	Stainless steel billets	25,000	--	25,000
9	Alloy Nickel	416	--	416
10	Induction Furnaces	17 sets / Month	--	17 sets
11	Electric cycle and vehicle	83 sets / Month	--	83 sets

3.0 Sponge Iron will be produced using DRI method. Iron oxide will be chemically reduced to 'hot metal' in blast furnace (BF). Sinter plant will use iron ore fines, mill scales and flue dust. Sinter produced will be used in BF. Pig Iron will be heated in induction furnace (IF) to prepare duct iron pipes. Scrap and sponge iron will be charged to IF and then poured to ladle refining furnace (LRF) and then molten material will be changed to continuous casting machine (CCM) to produce billets, rods and bars. Billets from steel melt shop (SMS) will be put into reheating furnace to manufacture TMT bars. Waste gases from DRI will be used in WHRB. No AFBC is proposed during expansion since it already exists.

4.0 Electrostatic precipitator (ESP), dust settling chamber (DSC), after burning chamber (ABC), gas cleaning system with bag house, bag filters, multi-cyclones, dust collectors, stack of adequate height, dust suppression and extraction system will be provided to control air emissions. Total water requirement from Gujarat Water Infrastructure Ltd. (GWIL) will be 2,165 m³/day and water is allotted vide letter dated 22nd October, 2008. No ground water will be utilized. Air-cooled condenser will be provided to WHRB. No wastewater will be discharged from sponge iron plant, pig iron plant, sinter plant, WHRB power plant, TMT bar plant, DI pipe and induction/arc furnace. The wastewater from power plant will be treated and used for dust suppression and green belt development. Coal char will be used in existing power plant, coal dust in the boiler, iron ore fines, mill scales, flue dust etc. in sinter plant. Fly ash will be used in captive brick manufacturing plant and also provided to cement manufacturing units. Slag will be sold to cement/brick manufacturing units. Bed ash will be disposed off in secured landfills.

5.0 Public hearing for the existing plant was held on 12th June, 2007 and is exempted for the proposed exemption as per Section 7 (ii) of EIA Notification, 2006.

6.0. The Ministry of Environment and Forests hereby accords environmental clearance to the above project under EIA Notification dated 14th September, 2006 subject to strict compliance of the following conditions:

A. SPECIFIC CONDITIONS :

- i) Efforts shall be made to reduce RSPM levels in the ambient air and a time bound action plan shall be submitted. On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks and sufficient air pollution control devices ✓

shall be provided to keep the emission levels below 100 mg/Nm³. Ambient air, stack and fugitive emission reports shall be submitted to the Ministry's Regional Office at Bhopal, GPCB and CPCB.

- ii) Hot gases from DRI kiln shall be passed through Dust Settling Chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely and used in waste heat recovery boiler (WHRB). The gas then shall be cleaned in ESP before leaving out into the atmosphere through ID fan and stack. Electrostatic precipitator (ESP) shall be provided to DRI plant, sinter plant, WHRB and AFBC boilers to control air emissions within 100 mg/Nm³. Gas cleaning system with bag house shall be provided to blast furnace (BF). Multi-cyclone and bag filters shall be provided to re-heating furnace and induction furnace respectively. Bag filters shall be provided to induction furnace.
- iii) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- iv) In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storages, water sprinkling system, covered belt conveyor, bag-house at transfer points and crusher house etc. Bag filters / cyclones shall be provided at product house, stock house, cooler discharge area and coal circuit to arrest the suspended particles in the raw material handling area. Dust suppression system including wet sprinkling system shall be provided to conveyor, transfer points, storage, loading and unloading areas to control dust emissions. Bag house/dust collectors shall be installed at appropriate transfer points like raw material handling area, fuel storage area, crusher house, screening plant and stock bin area to minimize fugitive emissions. Covered conveyor belt system shall be provided for internal transportation. Data on fugitive emissions shall be regularly monitored and records maintained.
- v) Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed. The emission standards issued by the Ministry in May, 2008 for the sponge plants shall be followed.
- vi) Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.
- vii) Total water requirement from Gujarat Water Infrastructure Ltd. (GWIL) shall not exceed 2,165 m³/day as per the permission accorded by the GWIL vide letter dated 22nd October, 2008. As proposed, no ground water or any other surface water shall be used. As proposed, air-cooled condenser shall be provided to WHRB to reduce water consumption. Acidic and Alkaline effluent from demineralization (DM) water plant shall be neutralized and reused in the plant. All the wastewater from process and domestic sources shall be treated and recycled and reused for water sprinkling during dust suppression on internal roads, raw material storage, cooling of the kiln, green belt development and for various activities at the project site. No wastewater shall be discharged outside the premises and 'Zero' effluent discharge shall be

ensured. Domestic wastes shall be treated in septic tank followed by soak pit and used for gardening and plantation.

- viii) The water consumption shall not exceed 16 m³/Ton of Steel as per prescribed standard.
- ix) Ground water monitoring around the solid waste disposal site / secured landfill (SLF) shall be carried out regularly and report submitted to the Ministry's Regional Office at Bhopal, CPCB and GPCB.
- x) Coal char and dust shall be used in existing AFBC power plant. DRI fines, iron ore fines, sinter dust, GCP dust, SMS dust, mill scale, flue dust etc. shall be used in sinter plant. All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization. SMS slag shall be properly utilized. All the other solid wastes including broken refractory mass shall be properly disposed off in environment friendly manner. Oily waste shall be provided to authorized recyclers / reprocessors as per the Hazardous Waste (Management & Handling) Rules, 1989 and subsequent amendments.
- xi) Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and subsequent amendment in 2003. All the fly ash and slag from blast furnace shall be provided to cement and brick manufacturers for further utilization and 'Memorandum of Understanding' shall be submitted to the Ministry's Regional Office at Bhopal. Bed ash shall be disposed off at secured landfills.
- xii) A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.
- xiii) Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste shall be submitted to the Ministry's Regional Office at Bhopal, GPCB and CPCB.
- xiv) As proposed, green belt shall be developed in 34 ha. (33 %) out of total 101.46 ha. area in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO.
- xv) All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Sector shall be implemented and progress report shall be submitted to MOEF/CPCB.
- xvi) Proper care shall be taken in structural design to protect against earthquake since site falls under earthquake zone IV and implemented during construction phase.
- xvii) The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project. ✓

(61)

B. GENERAL CONDITIONS:

- i) The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board and the State Government.
- ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
- iii) The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The Gujarat Pollution Control Board (GPCB) may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.
- iv) In-plant control measures for controlling fugitive emissions from spillage/raw materials handling shall be provided. Further, specific measures like water spraying at all the transfer points, conveyor and hoppers, curtains, suitable enclosures, dust collection system and water sprinkling on road shall be provided to control fugitive emissions. Dust suppression through water sprinkling shall be adopted in raw material handling area, unloading areas and transfer points to control fugitive emissions. Dust extraction system shall be provided at various dust generating points to control fugitive emissions. Data on fugitive emissions shall be regularly monitored and records maintained.
- v) At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO₂ and NO_x are anticipated in consultation with the State Pollution Control Board. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhopal and GPCB / CPCB once in six months.
- vi) Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.
- vii) The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- viii) The company shall undertake rainwater harvesting measures by collecting the rainwater through drains. The water collected shall be connected to raw water pipeline for reuse in the plant. The company shall provide proper drainage system for rainwater to prevent water logging within and in the vicinity of the plant.

- ix) Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.
- x) The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report and during the public hearing meeting. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.
- xi) As proposed, Rs. 5.89 Crores and Rs. 0.40 Crores shall be earmarked towards capital cost and recurring cost/annum for the environmental pollution control to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. An implementation schedule for complying with all the conditions stipulated herein shall be submitted to the Regional Office of this Ministry at Bhopal / CPCB / GPCB. The funds so provided shall not be diverted for any other purposes.
- xii) A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.
- xiii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF at Bhopal, the respective Zonal Office of CPCB and the GPCB. The criteria pollutant levels namely; SPM, RSPM, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- xiv) The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF at Bhopal, the respective Zonal Office of CPCB and the GPCB. The Regional Office of this Ministry at Bhopal / CPCB / GPCB shall monitor the stipulated conditions.
- xv) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company alongwith the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.
- xvi) Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

7.0. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory. ✓

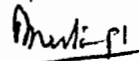
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7

8.0. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.

9.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

10.0. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.



(Dr. P. B. Rastogi)
Director

Copy to :

1. The Secretary, Department of environment and Forests, Govt. of Gujarat, Gandhi Nagar, Gujarat.
2. The Chairman Gujarat Pollution Control Board, Paryavaran Bhawan, Sector 10-A, Gandhi Nagar - 382 010, Gujarat.
3. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (West), Link Road No. 3, E - 5, Arera Colony, Bhopal - 462 016, M. P.
4. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
5. Adviser (IA-II), Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi.
6. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi.
7. Guard File.
8. Monitoring File.
9. Record File.



(Dr. P.B. Rastogi)
Director



GPCB

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY R.P.A.D

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules'2008 & as amended from time to time framed under the Environment (Protection) Act-1986 board has granted the Consent order board has granted the Consent order **AWH-39212** vide letter No. PC/CCA-KUTCH-250/GPCB ID: 29685/62672 dated 03-11-2010 for a validity up to **11-05-2015**

And whereas Board has received application vide Inward I.D.NO.104027 dated 12-02-2016 for the renewal of Consolidated Consent and Authorization (CC & A) of this Board and under the provisions/rules of the aforesaid acts. Consents & Authorization are hereby further amended as under:

CONSENTS AND AUTHORISATION:

(Under the provisions /rules of the aforesaid environmental acts)

To,

M/s Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant),

Plot No: 325,

Village: Samakhiyali,

Taluka: Bhachau,

Dist: Kutch East- 370 140.

1. Consent Order No.: AWH – 77789....Date of decision... 31/03/2016.
2. The consent order shall be valid up to 22/03/2021 for use of outlet for manufacturing of the following items/ products at Plot No: 325, Village: Samakhiyali, Taluka: Bhachau, Dist: Kutch East- 370 140.

NO.	PRODUCT		PRODUCTION CAPACITY(MT/M)
1	Sponge Iron		24,000
2	D.I. Pipes		16,000
3	Captive Power	WHRB	21 MWH
		FBC	24 MWH
4	Pig Iron (Blast furnace)		23,100
5	Sinter Plant		32,400
6	Steel Rolling Mill(TMT Plant)		52166
7	MS Billets/Bars		25000
8	Stainless steel billets		416
9	Alloy Nickel		17 Sets/Month
10	Induction Furnaces		1500 sets/Month
11	Electric cycle & vehicles	All Model (Yo Bike)	650 sets/Month
		E-Rickshaw & E. Winner	

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[Signature]

SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS:

1. Applicant shall strictly comply with all the conditions stipulated by MoEF in the order of Environment Clearance issued vide letter no. F.No.J-11011/503/2006-IA II (I) dtd. 20/02/2008 & vide letter no. F.NO J/11011/899/2008-IA II (I) dtd. 27/01/2010.
2. No ground water shall be used for the project coming under Dark zone without permission of competent authority.
3. All the recommendation made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel Plants should be implemented.

1. CONDITIONS UNDER WATER ACT 1974:

- 1.1 The generation and discharge of industrial effluent from the manufacturing process and other ancillary Industrial operations shall not exceed 284 m³/Day.
- 1.2 The quantity of the domestic waste water (Sewage) shall not exceed 30 m³/Day.
- 1.3 The quality of the industrial effluent shall confirm to the following standards

PARAMETER	PERMISSIBLE LIMIT
pH	6.5 to 8.5
Temperature	40 °C
Colour (pt.co. scale units)	100 units
Suspended Solids	100 mg / l
Oil & Grease	10 mg / l
Phenolic Compound	01 mg / l
Ammonical Nitrogen	50 mg / l
BOD (3Days at 27 °C)	30 mg / l
COD	100 mg / l
Chlorides	600 mg / l
Sulphates	1000 mg / l
Total Dissolved Solids	2100 mg / l
Sodium Absorption Ratio	26
Percent Sodium	60 %
Sulphides	02 mg / l
Total Chromium	02 mg / l
Hexavalent Chromium	0.1 mg / l
Copper	03 mg / l
Lead	0.1 mg / l
Mercury	0.01 mg / l
Nickel	03 mg / l
Zinc	05 mg / l
Cadmium	02 mg / l
Cyanides	0.2 mg / l
Arsenic	0.2 mg / l



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Fluorides	02 mg / l
Insecticides / Pesticides	Absent

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

1.4 No wastewater shall be discharged from sponge iron plant, Sinter plant, WHRB power plant, TMT bar plant, DI pipes and induction/arc furnace. The wastewater generated from power plant will be treated and used for dust suppression and green belt development within premises only.

1.5 The unit shall install meters for measuring category wise (Category as given in Water -Cess Act-1977 schedule II) consumption of water.

1.6 The treated effluent conforming to the above standards shall be utilized for gardening or sprinkled in ash disposal area or used for cooling in sponge iron plant within the premises of the industry.

1.7 The quality of the sewage shall conform to the following standards.(As per GPCB Norms, whichever is applicable).

PARAMETER	PERMISSIBLE LIMIT
BOD (5 days at 20° C)	20 mg/liter
Suspended Solid	30 mg/liter
Residual Chlorine	Minimum 0.5 mg/liter

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

1.8 The unit shall install meters for measuring category wise (Category as given in Water -Cess Act-1977 schedule II) consumption of water.

2. CONDITIONS UNDER AIR ACT 1981:

2.1 The flue gases emission through various stacks/vent of DG sets /boiler / furnace / heater shall conform to the following standards:

Sr. no.	Stack attached to	Stack height in Meter	Air Pollution Control System	Fuel used and its Quantity	Parameter	Permissible limit
1	Reheating furnace	30	Bag filter	Furnace oil:1000 liter/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
2	Quantifier	25	--	--		
3	AFBC Boiler 1 & 2 (Power plant)	90	ESP	Imported coal:25MT/day, Lignite:550MT/day, Char coal:144MT/day, Waste heat:85000m ³ /day		
4	D.G set	12	--	Diesel:1800Liter/day		
5	Rotary Kiln No.1(WHR B)	65	ESP	3.0MT/hr	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
6	Boiler	30	Dust collector	Coal 03 MT/day		

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7.	Blast furnace	30	Bag Filter with Gas Cleaning Plant	Coke		
8.	Annealing furnace 30	30	--	FO:2700 Liter/hour		
9.	D.G Set 1000 KVA	12	--	Diesel:120 Liter/day		
10.	Induction (melting Furnace)1	30	Cyclone separator and bag filter	Electricity	PM	50 mg/NM ³
11.	Induction Furnace 02	30	Cyclone separator and bag filter	Electricity		
12.	Rotary Kiln Attached with WHRB (2 nos. stack)	50	ESP	Coal:720 MT/day, Waste Heat: 64TPH	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
13.	Annealing Furnace (02 Nos)	30	--	Alternative Fuel from CO from Blast Furnace		
14.	Blast furnace (02 Nos)	50	Bag Filters/Wet cleaning system	Coke:95MT/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
15.	Sinter Stack (02 Nos)	30	ESP	Coke Breeze 108 MT/day		
16.	Reheating furnace	30	Multi cyclone	Furnace oil: 1000 Liter/day		
17.	Organ Oxygen Decarbonization System AOD (02 Nos)	30	Fumes Extraction System, Cyclone Separator and Jet pulse bag filter System	Electricity		
18.	Induction furnace (02 Nos)	30	Bag filter	Electricity	PM	50mg/NM ³



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2.2 The Process emission through various stacks/vent of reactors, process vessel shall conform to the following standard:

Sr. no.	Stack attached to	Stack height in meters	Air Pollution Control System	Parameter	Permissible limit
1	Gas exits (Pilot burner stack)	30	--	P M	100
2	Gas exits (Coal crusher)	30	Bag Filter	SO ₂	mg/NM ³
3	Meg Convertor	16	Cyclone separator & Bag filter	NOx	40 mg/NM ³
4	Zinc coating	16	Cyclone separator & Bag Filter		25 mg/NM ³
5	Barrel grinding and De dusting	16	Cyclone separator & Bag Filter		
6	Bilumin drying oven	30	--		
7	Core cleaning section	16	Cyclone separator		
8	Iron ore circuit (Crusher & Screen)	25	Cyclone separator & Bag Filter		
9	Stock house (Day bin)	15	Cyclone separator & Bag Filter		
10	Injection coal (Transfer house)	15	Cyclone separator & Bag Filter		
11	Production Storage bunker (Production house)	15	Cyclone separator & Bag Filter		
12	Intermediate bin & product separation bin	25	Cyclone separator & Bag Filter		
13	Product Storage Bunker (02Nos)	15	Cyclone separator & Bag Filter		
14	Intermediate Bin/Product Separation Bin (02 Nos)	25	Cyclone separator & Bag Filter		
15	Coal Injection (02Nos)	15	Cyclone separator & Bag Filter		
16	Day Bin/Stock House (02 Nos)	15	Cyclone separator & Bag Filter		
17	Iron Ore Circuit (Crusher & screen) (02Nos)	25m Common Stack	Cyclone separator & Bag Filter		
18	Coal Circuit (Crusher & screen) (02Nos)				
19	Magnesium Convertor	16	Cyclone separator & Bag Filter		
20	Zinc Coating	16	Cyclone separator & Bag Filter		
21	Blast furnace (pilot Burner Stack 02 Nos)	20	Cyclone separator & Bag Filter		

5

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22	Crusher/Conveyor Belt transfer Stack (02 Nos)	15	Bag Filter		

- 2.3 Stack monitoring facilities like porthole, platform/ladder etc. shall be provided with stacks/vents chimney in order to facilitate sampling of gases being emitted into the atmosphere.
- 2.4 Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.
- 2.5 All internal roads shall be block topped. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using native species shall be developed along the roads. facilities for parking of trucks carrying raw coal from the linked calamines shall be created within the Unit.
- 2.6 Regular Cleaning & wetting of the Ground within premises.
- 2.7 Covered all storage area for coal handling.
- 2.8 Water sprinkling systems (mechanized & moving) shall be installed in plant area.
- 2.9 Proper arrangement shall be made to control dust emission during loading & unloading of the raw material & finished products.
- 2.10 All measures for the control of environment pollution shall be provided before commencing production.
- 2.11 Continuous Ambient air quality monitoring station shall be set up in Steel Plant area.
- 2.12 Continuous stack monitoring facilities for all the stacks and sufficient air pollution control devices shall be provided to keep the emissions level below 100 mg/NM³.
- 2.13 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder as per national Ambient Air Quality Emission Standards issued by Ministry of Environment and Forest dated 16th November-2009.

Sr. No.	Pollutant	Time Weighted Average	Concentration in Ambient air in µg/M ³
1.	Sulphur Dioxide (SO ₂)	Annual 24 Hours	50 80
2.	Nitrogen Dioxide (NO ₂)	Annual 24 Hours	40 80
3.	Particulate Matter (Size less than 10 µm) OR PM ₁₀	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5 µm) OR PM _{2.5}	Annual 24 Hours	40 60

- 2.14 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.



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2.15 The level of Noise in ambient air within the premises of industrial unit shall not exceed following levels:

Between 6 A.M. and 10 P.M. : 75 dB(A)

Between 10 P.M. and 6 A.M. : 70 dB(A)

4. Authorization under Hazardous Waste [Management, Handling & Transboundary Movement] Rules, 2016.

4.1 Authorization Number: AWH-77789 Valid up to 22.3.2021

M/s. Electrotherm (INDIA) Limited(Sponge Iron & Di Pipe Plant) is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated Plot No - 325, Village: Samakhiyali, Taluka: Bhachau, Dist: Kutch - 370 201.

Sr. No.	Waste	Quantity per Year	Category	Facility
1.	Used Oil/Spent Oil	7.31 KL	5.1	Collection, Storage, Transportation and disposal by utilized for Lubrications of machines & remains & selling out to registered recyclers/ reprocessor
2.	Process Waste	675 MT	7.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
3.	Discarded Container	24 Nos	33.3	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
4.	Zinc Dust	108 MT	6.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
5.	Magnesium Dust	252 MT	6.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch

4.2 The authorization is granted to operate a facility for collection, storage, within factory premises, transportation, and ultimate disposal of Hazardous wastes by selling out to registered recyclers.

4.3 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

4.4 TERMS AND CONDITIONS OF AUTHORISATION:

- The applicant shall comply with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.
- The authorisation shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.

7

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- c) The persons authorized shall not rent, lend, sell, and transfer of otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorisation order by the persons authorized shall constitute a breach of this authorisation.
- e) It is the duty of the authorised person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
- f) An application for the renewal of an authorisation shall be made as laid down in rule 7.
- g) Industry shall submit annual report within 15 days and subsequent by 31st January every year.
- h) Hazardous waste shall be disposed off in accordance with the Haz. Waste (Management, Handling & Transboundary Movement) rules, 2016 and unit shall have to obtain Authorization of this Board for all applicable categories of waste.

5. GENERAL CONDITIONS: -

- 5.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 5.2 Applicant shall also comply with the general conditions given in annexure I.
- 5.3 The waste generator shall be totally responsible for (I.E. Collection, storage, transportation and ultimate disposal) of the wastes generated.
- 5.4 Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form – 4 by 31st January of every year.
- 5.5 In case of any accident, details of the same shall be submitted in Form – 5 to Gujarat Pollution Control Board.
- 5.6 As per "Public liability Insurance Act – 91" company shall get Insurance policy, if applicable.
- 5.7 Empty drums and containers of toxic and hazards material shall be treated as per guideline published for "management & handling of discarded containers". Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.
- 5.8 In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority.
- 5.9 In case of transport of hazardous waste to a facility for (I.E. Treatment, Storage and disposal) existing in a state other than the state where hazardous waste are generated, the occupier shall obtain "No Objection certificate" from the state pollution Control Board, the Committee of the concerned state or Union territory Administration where the facility exists.
- 5.10 Unit shall take all concrete measures to show tangible results in waste generation reduction, avoidance, reuse and recycle. Action taken in this regards shall be submitted within 03 months and also along with Form 4.
- 5.11 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon Supreme Court's order in W.P. No.657 of 1995 dated 14th October 2003.



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5.12 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.

For and on behalf of
GUJARAT POLLUTION CONTROL BOARD

(Sushil Vegda)

Senior Environment Engineer

NO: GPCB/CCA-KUTCH-294 (10)/ GPCB ID 17826/ 355742

Date:- 11/05/16

To,

M/s Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant),

Plot No: 325,

Village: Samakhiyali,

Taluka: Bhachau, Dist: Kutch East- 370 140.

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186

Royal**Environment Auditing & Consultancy Service**

303-304, Shivalik-7, B/s Bal Adalat, Gondal Road, RAJKOT - 360 002.

Ph. +91 281 2360695 Email : royalenvironment@live.com admin@royalconsultancy.com

Ref. No. : 601/07/2020-21

Date: 03/08/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

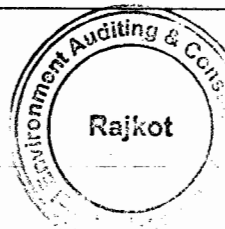
Date of Sampling : 30th July 2020

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 4	S - 17
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Sinter Head	Rotary Kiln - II (SIP)
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	3.2	2.8
04.	Stack Height	Meter	30	30	65	30	50
05.	Stack Temperature	Degree Centi.	101	110	121	125	126
06.	Ambient Temperature	Degree Centi.	30	30	32	30	31
07.	Average Velocity of Flue Gases	M/Sec.	6.5	6.3	7.3	7.8	7.3
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	20	20	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	34	38	64	66	74
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	24.7	19.2	21.3
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	21.4	29.5	25.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100
Calibration Done On. : 15/10/2019

Royal Environment Auditing & Consultancy Service



Jagdish
Analyst

for
T.C



187

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Ph. +91 281 2360695 Email : royalsenvironment@live.com admin@royalconsultancy.com

74

Ref. No. : 602/07/2020-21

Date: 03/08/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 30th to 31st July 2020

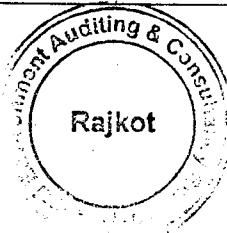
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-4	S-3	S-8	S-9
01.	Stack Attached to	---	Day Bin (SIP)	Product separation bin (SIP)	Mg Converter-1 (DIP)	Bitumin Drying Oven (DIP)
02.	Air Pollution Control Measures	---	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	0.6	0.4	0.5
04.	Stack Height	Meter	15	25	16	16
05.	Stack Temperature	Degree Centi.	67	74	75	78
06.	Ambient Temperature	Degree Centi.	30	32	33	33
07.	Average Velocity of Flue Gases	M/Sec.	7.8	7.8	7.5	7.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	20	21	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	71	74	53	58
12.	Permissible Limit for SO ₂	mg/Nm3	40	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	2.3	2.3	5.1	5.8
14.	Permissible Limit for Nox	mg/Nm3	25	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	13.1	14.3	11.6	13.4

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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Jagdish
Analyst

Ref. No. : 604/07/2020-21

Date: 03/08/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 30th to 31st July 2020

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S-13	S - 8	S - 17
01.	Stack Attached to	---	Blast Furnace - 1	Anneling Furnace - 1 (DIP)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	ESP	ESP	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0	2.0
04.	Stack Height	Meter	30	30	82	30
05.	Stack Temperature	Degree Centi.	113	121	123	125
06.	Ambient Temperature	Degree Centi.	31	29	33	29
07.	Average Velocity of Flue Gases	M/Sec.	7.3	7.5	7.5	7.3
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	21	22	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	63	71	68	65
12.	Permissible Limit for SO ₂	ppm	100	100	100	100
13.	Measured Concentration of SO ₂	ppm	10.3	21.3	15.6	16.7
14.	Permissible Limit for Nox	ppm	50	50	50	50
15.	Measured Concentration of Nox	ppm	13.4	15.6	14.4	16.4

Instrument Used : Stack Monitoring Kit - Ecotech - ESS I00

Calibration Done On. : 15/10/2019

Royal Environment Auditing & Consultancy Service



Jagdish
Analyst



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76

Ref. No. : 606/07/2020-21

Date :03/08/2020

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. DIP Canteen	Nr. Security Gate
01.	Date of sampling	---	30/07/2020	30/07/2020	30/07/2020
02.	Time of sampling	Hr	9.40	9.10	9.30
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SW	SW
05.	Average Wind Speed	Km/Hr	2 to 15	3 to 15	2 to 15
06.	Average flow rate during sampling	m3/Hour	1.10	1.10	1.20
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	31	34	38
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	48	56	58
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	12.3	13.4	14.6
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	17.6	19.4	20.4

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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190

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77

Ref. No. : 605/07/2020-21

Date : 03/08/2020

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : JULY 2020**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Weigh Bridge - 3								
01.	No. of Week	—	01	02	03	04	05	06	07	08	09
02.	Date & Time Starting of Monitoring	—	02/07/20 09.15	06/07/20 08.45	09/07/20 08.45	13/07/20 09.00	16/07/20 08.30	20/07/20 09.00	23/07/20 09.00	27/07/20 08.30	30/07/20 09.00
03.	Date & Time - Ending of Monitoring	—	03/07/20 09.15	07/07/20 08.45	10/07/20 08.45	14/07/20 09.00	17/07/20 08.30	21/07/20 09.00	24/07/20 09.00	28/07/20 08.30	31/07/20 09.00
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	—	SW	SW	SW	SW	SW	SW	SW	SW	SW
06.	Wind Speed Velocity	Km/Hr.	3 to 12	1 to 14	3 to 12	2 to 16	2 to 11	1 to 15	2 to 12	4 to 11	2 to 16
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.10	1.10	1.10	1.15	1.14	1.16	1.14	1.11	1.21
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	31	30	32	33	30	28	27	34	31
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	52	54	55	52	50	53	52	56	50
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	11.2	12.3	11.5	12.6	10.6	11.5	12.1	14.5	14.8
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	13.4	12.4	14.5	16.5	15.3	14.6	16.5	18.2	17.1

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS 119, PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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191

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Date: 30/06/2020

Ref. No. : 501/06/2020-21

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th June 2020

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 4	S - 17
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Sinter Head	Rotary Kiln - II (SIP)
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	3.2	2.8
04.	Stack Height	Meter	30	30	30	50
05.	Stack Temperature	Degree Centi.	105	112	129	120
06.	Ambient Temperature	Degree Centi.	31	31	31	32
07.	Average Velocity of Flue Gases	M/Sec.	6.1	6.8	8.1	7.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	20	22	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	33	37	67	75
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	20.1	22.4
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50
15.	Measured Concentration of NO _x	ppm	---	---	30.4	26.2

Instrument Used : Stack Monitoring Kit - Ecotech - ESS I00

Calibration Done On. : 15/10/2019

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192

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Date : 30/06/2020

Ref. No. : 505/06/2020-21

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : JUNE 2020**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Weigh Bridge - 3								
01.	No. of Week	---	01		02		03		04		05
02.	Date & Time Starting of Monitoring	—	01/06/20 08.15	02/06/20 08.25	08/06/20 08.20	09/06/20 08.25	15/06/20 09.10	16/06/20 09.15	22/06/20 09.10	23/06/20 09.25	29/06/20 09.15
03.	Date & Time - Ending of Monitoring	—	02/06/20 08.15	03/06/20 08.25	09/06/20 08.20	10/06/20 08.25	16/06/20 09.10	17/06/20 09.15	23/06/20 09.10	24/06/20 09.25	30/06/20 09.15
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	—	NE	NE	NE	NE	NE	NE	NE	NE	NE
06.	Wind Speed Velocity	Km/Hr.	2 to 14	2 to 12	1 to 16	3 to 11	2 to 15	1 to 12	3 to 11	1 to 16	1 to 12
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.20	1.13	1.15	1.17	1.13	1.12	1.20	1.15
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	32	34	35	32	34	31	37	33	32
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	56	57	54	52	54	53	57	51	52
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	13.2	12.6	13.6	11.4	12.4	13.6	15.4	16.4	13.6
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	14.3	15.7	17.4	16.4	15.7	17.7	19.1	18.4	16.3

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No. AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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193

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Ref. No. : 506/06/2020-21

Date :30/06/2020

AMBIENT AIR QUALITY MONITORING REPORT

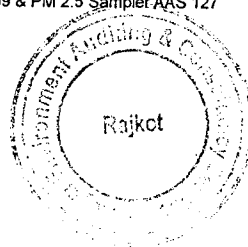
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. DIP Canteen	Nr. Security Gate
01.	Date of sampling	----	27/06/2020	27/06/2020	27/06/2020
02.	Time of sampling	Hr	9.30	9.00	9.20
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	----	NE	NW	NW
05.	Average Wind Speed	Km/Hr	1 to 15	1 to 15	1 to 15
06.	Average flow rate during sampling	m3/Hour	1.20	1.20	1.15
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	34	36	40
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	50	58	60
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	11.1	12.4	13.7
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	18.8	20.3	21.5

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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81

Ref. No. : 401/03/2020-21

Date: 30/03/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 15th to 16th March 2020

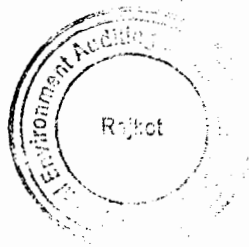
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 4	S - 17
01.	Stack Attached to	—	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Sinter Head	Rotary Kiln - II (SIP)
02.	Air Pollution Control Measures	—	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	3.2	2.8
04.	Stack Height	Meter	30	30	65	30	50
05.	Stack Temperature	Degree Centi.	111	115	135	135	125
06.	Ambient Temperature	Degree Centi.	30	32	33	32	34
07.	Average Velocity of Flue Gases	M/Sec.	6.6	7.2	7.7	8.5	7.4
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	22	22	26	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	35	40	65	70	80
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	25.8	22.2	20.3
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	22.5	32.5	28.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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Date: 30/03/2020

Ref. No. : 402/03/2020-21

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 15th to 16th March 2020

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-2	S-3	S-8	S-9
01.	Stack Attached to	---	Coal Crusher	Product separation bin (SIP)	Mg Converter-1 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	0.6	0.4	0.5
04.	Stack Height	Meter	30	25	16	16
05.	Stack Temperature	Degree Centi.	84	80	74	77
06.	Ambient Temperature	Degree Centi.	32	33	34	34
07.	Average Velocity of Flue Gases	M/Sec.	6.8	7.5	7.8	8.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	20	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	65	75	55	60
12.	Permissible Limit for SO ₂	mg/Nm3	40	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	2.2	3.2	5.5	6.2
14.	Permissible Limit for Nox	mg/Nm3	25	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	14.3	15.1	12.5	14.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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83

Ref. No. : 403/03/2020-21

Date: 30/03/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

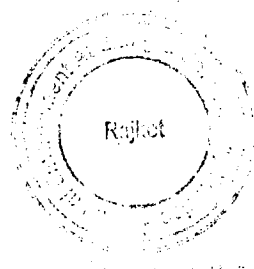
Date of Sampling : 15th March 2020

Test Method : As per IS Standards - 11255 1/2/3/7

Sr. No.	Particulars	Unit	Stack - 2
01.	Stack Attached to	---	D.G.Set SIP Plant
02.	Air Pollution Control Measures	---	---
03.	Stack Height	Meter	12
04.	Stack Temperature	Degree Centi.	121
05.	Ambient Temperature	Degree Centi.	32
06.	Average Velocity of Flue Gases	M/Sec.	7.7
07.	Isokinetic flow rate for P.M. Sampling	LPM	15
08.	Gaseous Sampling Flow Rate	LPM	2.0
09.	Permissible Limit for P.M.	mg/Nm3	100
10.	Measured Concentration of P.M.	mg/Nm3	77
11.	Permissible Limit for SO2	ppm	100
12.	Measured Concentration of SO2	ppm	2.2
13.	Permissible Limit for Nox	ppm	50
14.	Measured Concentration of Nox	ppm	18.3

Instrument Used : Stack Monitoring Kit - Ecotech Make - ESS 100
Calibration Done On. : 15/10/2019

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84

Ref. No. : 404/03/2020-21

Date: 30/03/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 15th to 16th March 2020

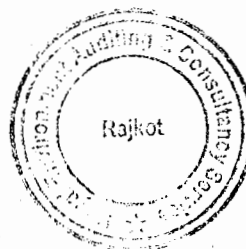
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S - 3	S - 8
01.	Stack Attached to	---	Blast Furnace - 1	Annelling Furnace - 2 (DIP-2)	AFBC Boiler 1 & 2 (Power plant)
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	---	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0
04.	Stack Height	Meter	30	30	82
05.	Stack Temperature	Degree Centi.	111	115	120
06.	Ambient Temperature	Degree Centi.	32	33	34
07.	Average Velocity of Flue Gases	M/Sec.	7.5	7.0	7.7
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	21	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	65	50	70
12.	Permissible Limit for SO ₂	ppm	100	100	100
13.	Measured Concentration of SO ₂	ppm	11.2	5.5	16.5
14.	Permissible Limit for Nox	ppm	50	50	50
15.	Measured Concentration of Nox	ppm	14.3	15.5	16.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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85

Ref. No. : 406/03/2020-21

Date : 30/03/2020

AMBIENT AIR QUALITY MONITORING REPORT

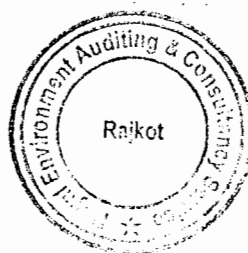
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. DIP Canteen	Nr. Weigh Bridge-3
01.	Date of sampling	---	15/03/2020	15/03/2020	15/03/2020
02.	Time of sampling	Hr	9.00	9.10	9.20
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	NE	NE	NE
05.	Average Wind Speed	Km/Hr	2 to 15	2 to 15	2 to 15
06.	Average flow rate during sampling	m3/Hour	1.20	1.10	1.10
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	µg/m ³	60	60	60
09.	Measured Concentration of PM 2.5	µg/m ³	42	38	48
10.	Permissible Limits of PM 10	µg/m ³	100	100	100
11.	Measured Concentration of PM 10	µg/m ³	68	60	78
12.	Permissible Limits of SO ₂	µg/m ³	80	80	80
13.	Measured Concentration of SO ₂	µg/m ³	10.5	11.3	12.5
14.	Permissible Limits of NO ₂	µg/m ³	80	80	80
15.	Measured Concentration of NO ₂	µg/m ³	25.3	23.3	26.5

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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Date : 03/03/2020

Ref. No. : 405/03/2020-21

DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING MONTH : MARCH 2020

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

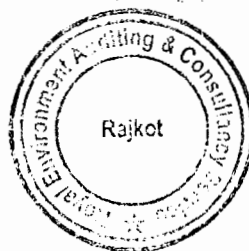
Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Security Gate							
01.	No. of Week	—	01		02		03		04	
02.	Date & Time Starting of Monitoring	—	02/03/20 08.30	03/03/20 08.45	09/03/20 09.00	10/03/20 09.30	16/03/20 09.00	17/03/20 09.15	22/03/20 09.30	23/03/20 09.45
03.	Date & Time - Ending of Monitoring	—	03/03/20 08.30	04/03/20 08.45	10/03/20 09.00	11/03/20 09.30	17/03/20 09.00	18/03/20 09.15	23/03/20 09.30	24/03/20 09.45
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	—	NE	NE	NE	NE	NE	NE	NE	NE
06.	Wind Speed Velocity	Km/Hr.	3 to 12	3 to 16	2 to 11	3 to 15	2 to 12	4 to 11	2 to 16	2 to 12
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /min.	1.10	1.12	1.14	1.18	1.12	1.14	1.18	1.16
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	32	33	30	35	30	38	32	30
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	58	55	50	52	54	58	52	50
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	11.5	12.5	10.3	11.3	12.5	14.3	15.5	12.7
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	16.8	18.3	17.7	16.8	18.8	20.2	19.3	17.2

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127
Calibration Done On : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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200

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Date: 03/03/2020

Ref No : 7101/02/2020-21

87

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th February 2020

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8
04.	Stack Height	Meter	30	30	65	50
05.	Stack Temperature	Degree Centi.	124	118	128	130
06.	Ambient Temperature	Degree Centi.	28	28	28	28
07.	Average Velocity of Flue Gases	M/Sec.	6.5	7.1	7.5	7.8
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	22	24
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	37	46	71	74
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	34.2	27.3
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50
15.	Measured Concentration of NO _x	ppm	---	---	16.8	23.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On : 15/10/2019

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201

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88

Ref. No. : 7102/02/2020-21

Date: 03/03/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th February 2020

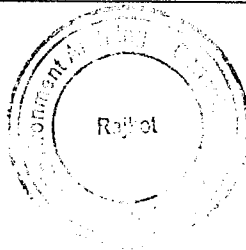
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-4	S-2	S -12	S - 8	S - 9
01.	Stack Attached to	---	Day Bin (SIP)	Coal Crusher	Blast Furnace - 2	Mg Converter-1 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Cyclone Separator & Bag Filter	Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	0.6	3.0	0.4	0.5
04.	Stack Height	Meter	15	30	50	16	16
05.	Stack Temperature	Degree Centi.	69	80	114	82	78
06.	Ambient Temperature	Degree Centi.	28	28	28	28	28
07.	Average Velocity of Flue Gases	M/Sec.	8.1	7.2	7.5	7.3	7.9
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	21	21	21	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	73	68	60	51	58
12.	Permissible Limit for SO2	mg/Nm3	40	40	100	40	40
13.	Measured Concentration of SO2	mg/Nm3	1.5	3.2	8.6	6.7	7.3
14.	Permissible Limit for Nox	mg/Nm3	25	25	50	25	25
15.	Measured Concentration of Nox	mg/Nm3	14.2	13.2	13.5	13.2	15.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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89

Ref. No. : 7103/02/2020-21

Date: 03/03/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th February 2020

Test Method : As per IS Standards - 11255 1/2/3/7

Sr. No.	Particulars	Unit	Stack - 2
01.	Stack Attached to	---	D.G.Set SIP Plant
02.	Air Pollution Control Measures	---	---
03.	Stack Height	Meter	12
04.	Stack Temperature	Degree Centi.	126
05.	Ambient Temperature	Degree Centi.	28
06.	Average Velocity of Flue Gases	M/Sec.	8.2
07.	Isokinetic flow rate for P.M. Sampling	LPM	18
08.	Gaseous Sampling Flow Rate	LPM	2.0
09.	Permissible Limit for P.M.	mg/Nm3	100
10.	Measured Concentration of P.M.	mg/Nm3	78
11.	Permissible Limit for SO2	ppm	100
12.	Measured Concentration of SO2	ppm	2.5
13.	Permissible Limit for Nox	ppm	50
14.	Measured Concentration of Nox	ppm	20.1

Instrument Used : Stack Monitoring Kit - Ecotech Make - ESS 100

Calibration Done On. : 15/10/2019

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90

Ref. No. : 7104/02/2020-21

Date: 03/03/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Flectrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th February 2020

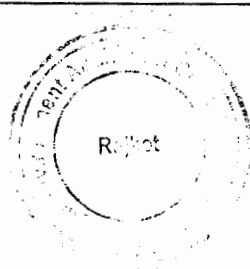
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S - 3	S - 8	S - 17
01.	Stack Attached to	---	Blast Furnace - 1	Anneling Furnace - 1 (DIP-1)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	---	ESP	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0	2.0
04.	Stack Height	Meter	30	30	82	30
05.	Stack Temperature	Degree Centi.	116	114	129	128
06.	Ambient Temperature	Degree Centi.	28	28	28	28
07.	Average Velocity of Flue Gases	M/Sec.	7.3	7.5	8.2	7.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	22	24	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	68	58	76	68
12.	Permissible Limit for SO2	ppm	100	100	100	100
13.	Measured Concentration of SO2	ppm	16.5	3.5	17.2	17.6
14.	Permissible Limit for Nox	ppm	50	50	50	50
15.	Measured Concentration of Nox	ppm	13.2	16.8	14.4	26.5

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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Ref. No. : 7106/02/2020-21

Date : 03/03/2020

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. DIP Canteen	Nr. Security Gate	Nr. Weigh Bridge-3
01.	Date of sampling	---	27/02/2020	27/02/2020	27/02/2020	27/02/2020
02.	Time of sampling	Hr	9.40	9.15	9.30	9.55
03.	Duration of Sampling	Min.	1440	1440	1440	1440
04.	Dominant Wind Direction (From)	---	NE	NE	NE	NE
05.	Average Wind Speed	Km/Hr	2 to 14	2 to 14	2 to 14	2 to 14
06.	Average flow rate during sampling	m3/Hour	1.11	1.24	1.16	1.15
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	44	40	44	46
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	63	56	62	58
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	12.1	15.3	11.8	16.3
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	20.7	24.3	20.2	23.4

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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Date : 03/03/2020

Ref. No. : 7105/02/2020-21

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : FEBRUARY 2020**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Oxygen Plant							
01.	No. of Week	---	01		02		03		04	
02.	Date & Time Starting of Monitoring	---	03/02/20 08.30	07/02/20 08.45	10/02/20 09.00	14/02/20 09.30	17/02/20 09.00	21/02/20 09.15	24/02/20 09.30	28/02/20 09.45
03.	Date & Time - Ending of Monitoring	---	04/02/20 08.30	08/02/20 08.45	11/02/20 09.00	15/02/20 09.30	18/02/20 09.00	22/02/20 09.15	25/02/20 09.30	29/02/20 09.45
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	NE	NE	NE	NE	NE	NE	NE	NE
06.	Wind Speed Velocity	Km/Hr.	3 to 11	3 to 14	2 to 12	3 to 13	2 to 15	4 to 16	2 to 14	4 to 18
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.18	1.21	124.00	1.20	1.15	1.22	1.25	1.23
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	31	35	32	36	31	34	33	31
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	56	58	53	55	52	54	56	53
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	12.4	14.3	12.2	15.1	13.3	12.7	12.1	13.6
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	13.8	12.2	12.7	13.7	14.5	15.5	15.7	12.6

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No.: AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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206

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Date: 03/02/2020

Ref. No. : 6101/01/2020-21

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 09th to 10th January 2020

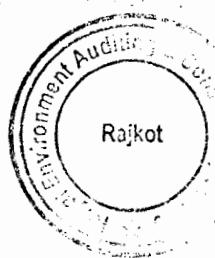
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	120	114	122	124	126
06.	Ambient Temperature	Degree Centi.	25	26	25	26	26
07.	Average Velocity of Flue Gases	M/Sec.	6.1	6.8	6.9	7.2	7.9
08.	Isokinetic flow rate for P.M. Sampling	LPM	18	19	21	21	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	34	41	65	66	68
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	30.4	22.7	21.8
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	14.2	20.7	24.2

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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94

Ref. No. : 6102/01/2020-21

Date: 03/02/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 09th to 10th January 2020

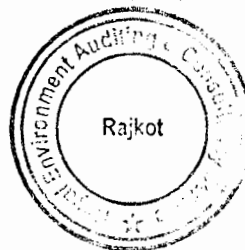
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-2	S - 3	S - 8	S - 9
01.	Stack Attached to	---	Coal Crusher	Product separation bin (SIP)	Mg Converter-1 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	0.6	0.4	0.5
04.	Stack Height	Meter	30	25	16	16
05.	Stack Temperature	Degree Centi.	74	82	77	73
06.	Ambient Temperature	Degree Centi.	25	26	25	25
07.	Average Velocity of Flue Gases	M/Sec.	6.8	7.3	6.8	7.3
08.	Isokinetic flow rate for P.M. Sampling	LPM	19	19	22	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	63	62	44	48
12.	Permissible Limit for SO ₂	mg/Nm3	40	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	2.1	6.8	5.8	6.9
14.	Permissible Limit for Nox	mg/Nm3	25	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	11.4	12.3	11.2	13.4

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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Ref. No. : 6103/01/2020-21

Date: 03/02/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 9th January 2020

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	Stack - 2
01.	Stack Attached to	---	D.G.Set SIP Plant
02.	Air Pollution Control Measures	---	---
03.	Stack Height	Meter	12
04.	Stack Temperature	Degree Centi.	122
05.	Ambient Temperature	Degree Centi.	26
06.	Average Velocity of Flue Gases	M/Sec.	8.8
07.	Isokinetic flow rate for P.M. Sampling	LPM	20
08.	Gaseous Sampling Flow Rate	LPM	2.0
09.	Permissible Limit for P.M.	mg/Nm3	100
10.	Measured Concentration of P.M.	mg/Nm3	82
11.	Permissible Limit for SO2	ppm	100
12.	Measured Concentration of SO2	ppm	3.1
13.	Permissible Limit for Nox	ppm	50
14.	Measured Concentration of Nox	ppm	21.7

Instrument Used : Stack Monitoring Kit - Ecotech Make - ESS 100

Calibration Done On. : 15/10/2019

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96

Ref. No. : 6104/01/2020-21

Date: 03/02/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 09th to 10th January 2020

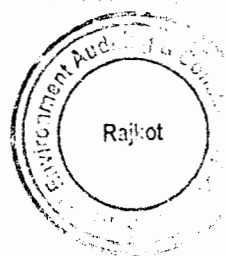
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S-13	S - 8
01.	Stack Attached to	---	Blast Furnace - 1	Anneling Furnace - 2 (DIP)	AFBC Boiler 1 & 2 (Power plant)
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	ESP	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0
04.	Stack Height	Meter	30	30	82
05.	Stack Temperature	Degree Centi.	112	123	124
06.	Ambient Temperature	Degree Centi.	24	26	25
07.	Average Velocity of Flue Gases	M/Sec.	6.8	7.4	6.9
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	22	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	64	68	69
12.	Permissible Limit for SO ₂	ppm	100	100	100
13.	Measured Concentration of SO ₂	ppm	14.5	20.2	15.3
14.	Permissible Limit for Nox	ppm	50	50	50
15.	Measured Concentration of Nox	ppm	11.3	13.8	12.7

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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210

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Ref. No. : 6106/01/2020-21

Date :03/02/2020

AMBIENT AIR QUALITY MONITORING REPORT

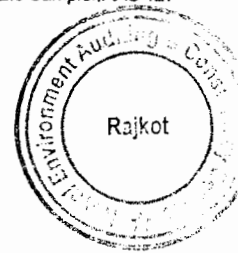
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. DIP Canteen	Nr. Security Gate	Nr. Weigh Bridge-3
01.	Date of sampling	---	09/01/2020	09/01/2020	09/01/2020
02.	Time of sampling	Hr	9.35	10.05	10.30
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	NE	NE	NE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 14	2 to 12
06.	Average flow rate during sampling	m3/Hour	1.21	1.14	1.13
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	42	37	40
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	59	58	54
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	13.2	13.8	14.6
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	22.5	18.2	21.3

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler,AAS 127

Calibrate Done on : 06/05/2019

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211

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Date : 03/02/2020

Ref. No : 6105/01/2020-21

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : JANUARY 2020**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

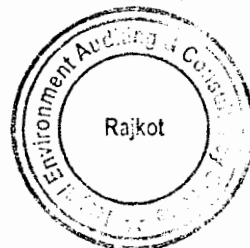
S. No.	Particulars	Unit	Nr. Oxygen Plant								
01.	No. of Week	---	01	02		03		04		05	
02.	Date & Time Starting of Monitoring	---	02/01/20 08.05	06/01/20 08.15	09/01/20 08.30	15/01/20 08.45	17/01/20 09.15	20/01/20 08.40	23/01/20 09.00	27/01/20 09.15	30/01/20 09.30
03.	Date & Time - Ending of Monitoring	---	03/01/20 08.05	07/01/20 08.15	10/01/20 08.30	16/01/20 08.45	18/01/20 09.15	21/01/20 08.40	24/01/20 09.00	28/01/20 09.15	31/01/20 09.30
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	NE	NE	NE	NE	NE	NE	NE	NE	NE
06.	Wind Speed Velocity	Km/Hr.	2 to 12	2 to 12	3 to 12	4 to 13	2 to 14	3 to 10	3 to 14	1 to 14	4 to 14
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.14	1.16	1.20	1.22	1.16	1.19	1.14	1.18
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	30	34	33	36	32	33	36	31	34
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	54	58	53	56	51	59	53	52	51
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	12.3	11.3	13.5	11.8	14.3	12.5	11.8	10.8	12.8
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	14.5	15.3	13.6	14.8	14.9	15.1	16.7	13.7	14.8

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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212

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Date: 03/01/2020

Ref. No. : 5101/12/2019-20

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

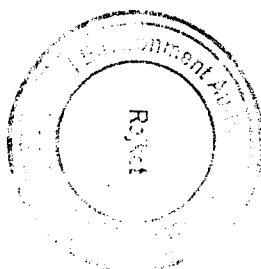
Date of Sampling : 27th to 28th December 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	115	112	125	123	125
06.	Ambient Temperature	Degree Centi.	27	27	28	28	28
07.	Average Velocity of Flue Gases	M/Sec.	6.5	7.1	7.2	7.2	8.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	22	23	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	37	39	62	58	54
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	32.5	21.5	20.4
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	16.8	18.3	23.6

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

Rajadep
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100

Ref. No. : 5102/12/2019-20

Date: 03/01/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th December 2019

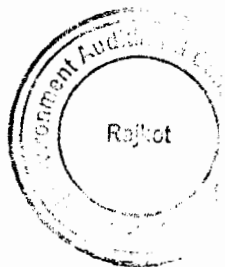
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-4	S-18	S - 3	S - 9
01.	Stack Attached to	---	Day Bin (SIP)	Coal Injection	Product separation bin (SIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	0.6	0.6	0.5
04.	Stack Height	Meter	15	15	25	16
05.	Stack Temperature	Degree Centi.	68	64	86	70
06.	Ambient Temperature	Degree Centi.	29	29	29	29
07.	Average Velocity of Flue Gases	M/Sec.	7.8	7.5	7.1	7.0
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	20	21	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	70	72	67	45
12.	Permissible Limit for SO ₂	mg/Nm3	40	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	1.2	1.4	6.1	6.5
14.	Permissible Limit for Nox	mg/Nm3	25	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	12.1	13.6	13.5	14.1

Instrument Used : Stack Monitoring Kit - Ecotech - ESS I00

Calibration Done On. : 15/10/2019

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101

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Ref. No. : 5104/12/2019-20

Date: 03/01/2020

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th December 2019

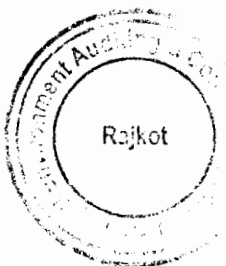
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S-13	S - 8	S - 17
01.	Stack Attached to	---	Blast Furnace - 1	Anneling Furnace - 2 (DIP)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	ESP	ESP	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0	2.0
04.	Stack Height	Meter	30	30	82	30
05.	Stack Temperature	Degree Centi.	109	120	121	125
06.	Ambient Temperature	Degree Centi.	29	28	29	29
07.	Average Velocity of Flue Gases	M/Sec.	7.1	7.2	7.3	7.4
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	21	22	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	68	64	65	63
12.	Permissible Limit for SO2	ppm	100	100	100	100
13.	Measured Concentration of SO2	ppm	12.5	18.2	12.5	16.5
14.	Permissible Limit for Nox	ppm	50	50	50	50
15.	Measured Concentration of Nox	ppm	13.1	15.9	15.2	24.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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Date : 03/01/2020

Ref No 5105/12/2019-20

102

DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING MONTH : DECEMBER- 2019

Name of company : Electrotherm (India) Limited,

Village: Samakhiali, Taluka: Bhachau,

Dist. Kutch.

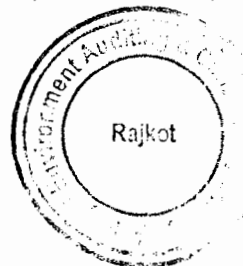
Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. DIP Canteen								
01.	No. of Week	---	01		02		03		04		05
02	Date & Time Starting of Monitoring	---	02/12/19 08.30	06/12/19 08.20	09/12/19 08.40	13/12/19 08.30	16/12/19 08.50	20/12/19 09.15	23/12/19 09.30	27/12/19 09.40	30/12/19 09.10
03	Date & Time - Ending of Monitoring	---	03/12/19 08.30	07/12/19 08.20	10/12/19 08.40	14/12/19 08.30	17/12/19 08.50	21/12/19 09.15	24/12/19 09.30	28/12/19 09.40	31/12/19 09.10
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	NE	NE	NE	NE	NE	NE	NE	NE	NE
06.	Wind Speed Velocity	Km/Hr.	2 to 14	3 to 14	2 to 12	3 to 12	4 to 12	2 to 16	3 to 14	3 to 16	2 to 14
07	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.14	1.13	1.15	1.12	1.10	1.12	1.13	1.15	1.12
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
11	Measured Concentration of PM _{2.5}	µg/m ³	32	34	32	35	32	31	35	32	34
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
13	Measured Concentration of PM ₁₀	µg/m ³	52	54	55	51	53	55	56	51	54
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	11.5	12.1	13.2	11.8	12.1	13.6	14.1	12.5	11.8
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	13.1	15.2	14.5	12.6	13.2	15.3	16.2	15.2	12.7

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009



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Date : 03/01/2020

Ref. No. : 5106/12/2019-20

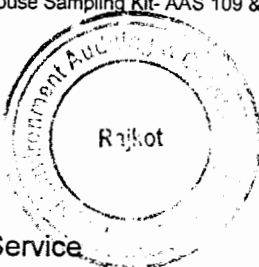
AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Security Gate	Nr. Weigh Bridge-3
01.	Date of sampling	---	27/12/2019	27/12/2019	27/12/2019
02.	Time of sampling	Hr	9.30	10.10	10.45
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	NE	NE	NE
05.	Average Wind Speed	Km/Hr	2 to 16	3 to 14	2 to 12
06.	Average flow rate during sampling	m3/Hour	1.14	1.13	1.11
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	µg/m³	60	60	60
09.	Measured Concentration of PM 2.5	µg/m ³	38	40	43
10.	Permissible Limits of PM 10	µg/m³	100	100	100
11.	Measured Concentration of PM 10	µg/m ³	57	55	51
12.	Permissible Limits of SO₂	µg/m³	80	80	80
13.	Measured Concentration of SO ₂	µg/m ³	11.2	12.1	11.6
14.	Permissible Limits of NO₂	µg/m³	80	80	80
15.	Measured Concentration of NO ₂	µg/m ³	22.3	16.5	17.6

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019



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104

Ref. No. : 4101/11/2019-20

Date: 03/12/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

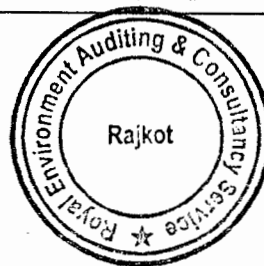
Date of Sampling : 28th to 29th November 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	112	108	122	126	121
06.	Ambient Temperature	Degree Centi.	28	28	29	29	29
07.	Average Velocity of Flue Gases	M/Sec.	6.8	7.3	7.4	7.5	8.4
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	22	23	22	24
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	34	37	68	72	67
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	36.5	25.7	21.3
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	19.7	20.6	25.6

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019



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218

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105

Ref. No. : 4102/11/2019-20

Date: 03/12/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 28th to 29th November 2019

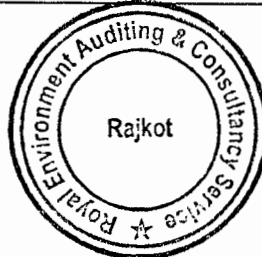
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-4	S-12	S-3	S-8
01.	Stack Attached to	---	Day Bin (SIP)	Blast Furnace - 2	Product separation bin (SIP)	Mg Converter-1 (DIP)
02.	Air Pollution Control Measures	---	Cyclone Separator & Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	3.0	0.6	0.4
04.	Stack Height	Meter	15	50	25	16
05.	Stack Temperature	Degree Centi.	65	115	84	78
06.	Ambient Temperature	Degree Centi.	35	30	30	30
07.	Average Velocity of Flue Gases	M/Sec.	8.1	7.1	7.4	7.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	21	20	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	72	65	63	50
12.	Permissible Limit for SO ₂	mg/Nm3	40	100	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	1.5	8.1	6.2	6.4
14.	Permissible Limit for Nox	mg/Nm3	25	50	25	25
15.	Measured Concentration of Nox	mg/Nm3	14.5	11.5	15.3	9.6

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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219

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Ref. No. : 4104/11/2019-20

Date: 03/12/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

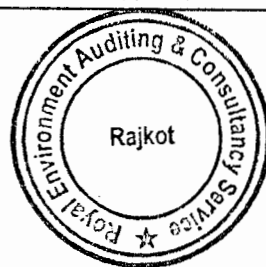
Date of Sampling : 28th to 29th November 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S - 3	S - 8	S - 17
01.	Stack Attached to	---	Blast Furnace - 1	Anneling Furnace - 1 (DIP-1)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	---	ESP	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0	2.0
04.	Stack Height	Meter	30	30	82	30
05.	Stack Temperature	Degree Centi.	106	112	124	121
06.	Ambient Temperature	Degree Centi.	30	30	30	30
07.	Average Velocity of Flue Gases	M/Sec.	7.3	7.1	7.6	7.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	20	23	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	70	54	69	61
12.	Permissible Limit for SO ₂	ppm	100	100	100	100
13.	Measured Concentration of SO ₂	ppm	11.8	2.3	14.8	18.3
14.	Permissible Limit for Nox	ppm	50	50	50	50
15.	Measured Concentration of Nox	ppm	12.5	11.8	13.5	22.1

Instrument Used : Stack Monitoring Kit - Ecotech - ESS I00

Calibration Done On. : 15/10/2019



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220

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Ref. No. : 4106/11/2019-20

Date: 03/12/2019

AMBIENT AIR QUALITY MONITORING REPORT

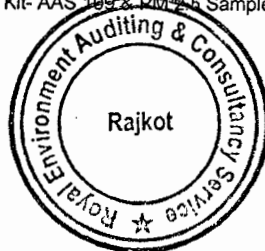
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.



Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Weight Bridge 2	Nr. DIP Canteen
01.	Date of sampling	---	28/11/2019	28/11/2019	28/11/2019
02.	Time of sampling	Hr	9.45	10.20	11.00
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SE	SE
05.	Average Wind Speed	Km/Hr	2 to 14	3 to 15	2 to 16
06.	Average flow rate during sampling	m3/Hour	1.12	1.14	1.13
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	47	44	41
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	55	59	53
12.	Permissible Limits of SO₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	10.8	11.5	12.4
14.	Permissible Limits of NO₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	21.5	18.3	19.6

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 1092, PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019



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221

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108

Ref. No. : 4106/11/2019-20

Date: 03/12/2019

AMBIENT AIR QUALITY MONITORING REPORT

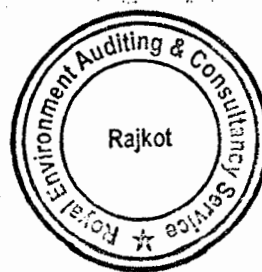
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Security Gate	Nr. DIP Canteen
01.	Date of sampling	----	28/11/2019	28/11/2019	28/11/2019
02.	Time of sampling	Hr	9.45	10.20	11.00
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	----	SE	SE	SE
05.	Average Wind Speed	Km/Hr	2 to 14	3 to 15	2 to 16
06.	Average flow rate during sampling	m3/Hour	1.12	1.14	1.13
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	47	44	41
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	55	59	53
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	10.8	11.5	12.4
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	21.5	18.3	19.6

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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109

Ref. No. : 4105/11/2019-20

Date: 03/12/2019

DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING MONTH : NOVEMBER- 2019

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

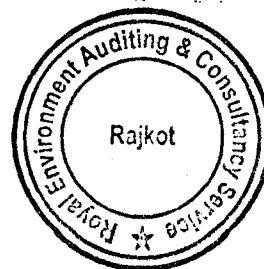
S. No.	Particulars	Unit	Nr. Weigh Bridge-2								
01.	No. of Week	---	01	02		03		04		05	
02.	Date & Time Starting of Monitoring	---	01/11/19 08.35	04/11/19 08.20	08/11/19 08.25	11/11/19 08.40	15/11/19 09.10	18/11/19 09.20	22/11/19 09.30	25/11/19 09.20	29/11/19 09.30
03.	Date & Time - Ending of Monitoring	---	02/11/19 08.35	05/11/19 08.20	09/11/19 08.25	12/11/19 08.40	16/11/19 09.10	19/11/19 09.20	23/11/19 09.30	26/11/19 09.20	30/11/19 09.30
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE	SE
06.	Wind Speed Velocity	Km/Hr.	2 to 16	2 to 12	3 to 12	4 to 12	2 to 16	3 to 14	3 to 16	2 to 14	4 to 14
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.14	1.16	1.12	1.11	1.15	1.12	1.15	1.16
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	29	30	34	31	33	32	30	29	31
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	55	52	54	51	56	52	58	54	56
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	12.1	12.6	11.5	10.8	14.1	13.5	11.6	12.4	13.5
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	14.2	15.4	13.8	14.2	15.1	13.4	12.5	13.4	15.2

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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223

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Ref. No. : 4105/11/2019-20

Date: 03/12/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : NOVEMBER- 2019**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

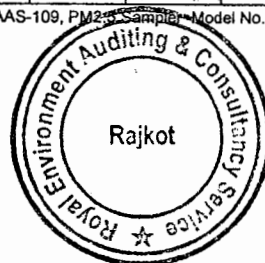
Sample Collected by : Royal Environment

Sample Collected by the Regional Environment											
S. No.	Particulars	Unit	Nr. Security Gate								
01.	No. of Week	---	01	02		03		04		05	
02.	Date & Time Starting of Monitoring	---	01/11/19 08.35	04/11/19 08.20	08/11/19 08.25	11/11/19 08.40	15/11/19 09.10	18/11/19 09.20	22/11/19 09.30	25/11/19 09.20	29/11/19 09.30
03.	Date & Time - Ending of Monitoring	---	02/11/19 08.35	05/11/19 08.20	09/11/19 08.25	12/11/19 08.40	16/11/19 09.10	19/11/19 09.20	23/11/19 09.30	26/11/19 09.20	30/11/19 09.30
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE	SE
06.	Wind Speed Velocity	Km/Hr.	2 to 16	2 to 12	3 to 12	4 to 12	2 to 16	3 to 14	3 to 16	2 to 14	4 to 14
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.14	1.16	1.12	1.11	1.15	1.12	1.15	1.16
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	29	30	34	31	33	32	30	29	31
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	55	52	54	51	56	52	58	54	56
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	12.1	12.6	11.5	10.8	14.1	13.5	11.6	12.4	13.5
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	14.2	15.4	13.8	14.2	15.1	13.4	12.5	13.4	15.2

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM_{2.5} Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009



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224

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Ref. No. : 3101/10/2019-20

Date: 02/11/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

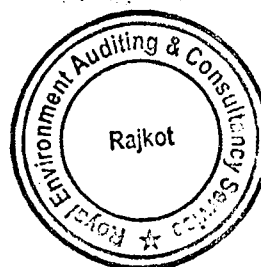
Date of Sampling : 25th to 26th October 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	116	110	125	124	123
06.	Ambient Temperature	Degree Centi.	33	32	32	33	33
07.	Average Velocity of Flue Gases	M/Sec.	6.5	7.1	7.2	7.3	8.6
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	23	22	21	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	38	35	70	68	63
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	39.6	27.3	22.5
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	20.8	21.4	27.2

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019



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225

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112

Ref. No. : 3102/10/2019-20

Date: 02/11/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th October 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 12	S - 3	S - 8	S - 9
01.	Stack Attached to	---	Blast Furnace - 2	Product separation bin (SIP)	Mg Converter-2 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	3.0	0.6	0.4	0.5
04.	Stack Height	Meter	50	25	16	16
05.	Stack Temperature	Degree Centi.	113	87	80	73
06.	Ambient Temperature	Degree Centi.	33	34	33	33
07.	Average Velocity of Flue Gases	M/Sec.	7.2	74	7.3	7.9
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	21	23	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	66	67	52	45
12.	Permissible Limit for SO ₂	mg/Nm3	100	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	8.3	6.4	6.5	5.9
14.	Permissible Limit for Nox	mg/Nm3	50	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	12.8	16.5	9.8	15.5

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019

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226

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113

Ref. No. : 3104/10/2019-20

Date: 02/11/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th October 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-1	S-3	S-8	S-17
01.	Stack Attached to	---	Blast Furnace - 1	Anneling Furnace - 1 (DIP-1)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	Bag Filter with Gas Cleaning Plant	---	ESP	ESP
03.	Stack Diameter	Meter	3.0	3.2	4.0	2.0
04.	Stack Height	Meter	30	30	82	30
05.	Stack Temperature	Degree Centi.	109	114	121	124
06.	Ambient Temperature	Degree Centi.	33	33	33	33
07.	Average Velocity of Flue Gases	M/Sec.	7.5	7.3	7.9	7.4
08.	Isokinetic flow rate for P.M. Sampling	LPM	23	21	22	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	72	58	67	64
12.	Permissible Limit for SO ₂	ppm	100	100	100	100
13.	Measured Concentration of SO ₂	ppm	13.2	2.5	16.3	19.7
14.	Permissible Limit for Nox	ppm	50	50	50	50
15.	Measured Concentration of Nox	ppm	14.8	13.5	15.4	20.4

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 15/10/2019



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227

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114

Ref. No. : 3105/10/2019-20

Date: 02/11/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : OCTOBER- 2019**

Name of company : Electrotherm (India) Limited,

Village: Samakhiali, Taluka: Bhachau,

Dist. Kutch.

Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Security Gate									
01.	No. of Week	---	01		02		03		04		05	
02.	Date & Time Starting of Monitoring	—	01/10/19 8.35	02/10/19 08.40	08/10/19 08.15	09/10/19 08.30	15/10/19 09.00	16/10/19 09.15	23/10/19 08.45	24/10/19 08.55	29/10/19 09.00	30/10/19 09.10
03.	Date & Time - Ending of Monitoring	—	02/10/19 8.35	03/10/19 08.40	09/10/19 08.15	10/10/19 08.30	16/10/19 09.00	17/10/19 09.15	24/10/19 08.45	25/10/19 08.55	30/10/19 09.00	31/10/19 09.10
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	—	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
06.	Wind Speed Velocity	Km/Hr.	2 to 16	3 to 14	2 to 12	3 to 12	4 to 12	2 to 16	3 to 14	3 to 16	2 to 14	4 to 14
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /min.	1.10	1.11	1.15	1.12	1.14	1.10	1.13	1.14	1.12	1.14
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	27	25	26	25	23	24	26	27	24	23
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	54	52	55	53	56	51	54	57	52	55
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	11.8	11.6	12.1	10.1	11.3	13.4	14.1	12.6	11.5	12.3
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	13.2	14.9	15.1	14.6	11.7	14.2	14.9	13.6	12.8	14.8

Instrument Used: Ecotech make. RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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228

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Ref. No. : 3106/10/2019-20

Date: 02/11/2019

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Weight Bridge 3	Nr. DIP Canteen
01.	Date of sampling	----	26/10/2019	26/10/2019	26/10/2019
02.	Time of sampling	Hr	9.45	10.20	11.00
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	----	SE	SE	SE
05.	Average Wind Speed	Km/Hr	2 to 14	3 to 15	2 to 16
06.	Average flow rate during sampling	m3/Hour	1.10	1.13	1.11
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	µg/m³	60	60	60
09.	Measured Concentration of PM 2.5	µg/m ³	44	41	40
10.	Permissible Limits of PM 10	µg/m³	100	100	100
11.	Measured Concentration of PM 10	µg/m ³	53	57	51
12.	Permissible Limits of SO₂	µg/m³	80	80	80
13.	Measured Concentration of SO ₂	µg/m ³	11.2	12.1	12.8
14.	Permissible Limits of NO₂	µg/m³	80	80	80
15.	Measured Concentration of NO ₂	µg/m ³	20.7	17.2	20.4

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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229

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116

Ref. No. : 2021/09/2019-20

Date: 03/10/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 28th to 29th September 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	118	108	123	121	126
06.	Ambient Temperature	Degree Centi.	32	33	33	34	34
07.	Average Velocity of Flue Gases	M/Sec.	6.2	7.3	7.1	7.2	8.8
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	22	21	23	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	36	34	72	70	61
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	41.5	28.9	21.5
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	21.6	20.8	28.5

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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230

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117

Ref. No. : 2024/09/2019-20

Date: 03/10/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : SEPTEMBER- 2019**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Oxygen Plant							
			01		02		03		04	
01.	No. of Week	---								
02.	Date & Time Starting of Monitoring	---	02/09/19 08.45	05/09/19 08.30	09/09/19 08.55	12/09/19 08.30	16/09/19 08.40	19/09/19 09.00	23/09/19 09.15	26/09/19 09.30
03.	Date & Time - Ending of Monitoring	---	03/09/19 08.45	06/09/19 08.30	10/09/19 08.56	13/09/19 08.30	17/09/19 08.40	20/09/19 09.00	24/09/19 09.15	27/09/19 09.30
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE
06.	Wind Speed Velocity	Km/Hr.	3 to 11	3 to 11	5 to 14	3 to 15	4 to 13	2 to 14	3 to 16	4 to 12
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.15	1.13	1.14	1.12	1.11	1.15	1.16
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	28	27	24	25	27	26	28	25
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	52	58	54	50	52	53	57	50
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	12.5	9.2	11.5	13.8	14.6	12.4	11.8	12.5
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	15.2	14.3	11.8	14.3	15.2	13.8	12.6	15.3

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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231

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118

Ref. No. : 2022/09/2019-20

Date: 03/10/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 28th to 29th September 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-4	S -12	S - 3	S - 8	S - 9
01.	Stack Attached to	---	Day Bin (SIP)	Blast Furnace - 1	Product separation bin (SIP)	Mg Converter-1 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Cyclone Separator & Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	3.0	0.6	0.4	0.5
04.	Stack Height	Meter	15	50	25	16	16
05.	Stack Temperature	Degree Centi.	65	115	83	78	75
06.	Ambient Temperature	Degree Centi.	35	35	36	36	35
07.	Average Velocity of Flue Gases	M/Sec.	8.1	7.4	7.3	7.1	8.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	23	21	22	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	72	68	62	50	41
12.	Permissible Limit for SO2	mg/Nm3	40	100	40	40	40
13.	Measured Concentration of SO2	mg/Nm3	1.5	8.2	6.1	6.2	5.3
14.	Permissible Limit for Nox	mg/Nm3	25	50	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	14.5	12.5	16.3	9.4	15.2

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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232

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119

Ref. No. : 2020/09/2019-20

Date: 03/10/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 28th September 2019

Test Method : As per IS Standards - 11255 1/2/3/7

Sr. No.	Particulars	Unit	Stack - 2
01.	Stack Attached to	---	D.G.Set SMS Plant
02.	Air Pollution Control Measures	---	---
03.	Stack Height	Meter	12
04.	Stack Temperature	Degree Centi.	125
05.	Ambient Temperature	Degree Centi.	36
06.	Average Velocity of Flue Gases	M/Sec.	9.8
07.	Isokinetic flow rate for P.M. Sampling	LPM	23
08.	Gaseous Sampling Flow Rate	LPM	2.0
09.	Permissible Limit for P.M.	mg/Nm3	100
10.	Measured Concentration of P.M.	mg/Nm3	84
11.	Permissible Limit for SO2	ppm	100
12.	Measured Concentration of SO2	ppm	2.2
13.	Permissible Limit for Nox	ppm	50
14.	Measured Concentration of Nox	ppm	23.5

Instrument Used : Stack Monitoring Kit - Ecotech Make - ESS 100

Calibration Done On. : 13/09/2018

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233

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120

Ref. No. : 2023/09/2019-20

Date: 03/10/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 28th to 29th September 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 5	S - 8
01.	Stack Attached to	---	Anneling Furnace - 1 (DIP-1)	AFBC Boiler 1 & 2 (Power plant)
02.	Air Pollution Control Measures	---	ESP	ESP
03.	Stack Diameter	Meter	3.2	4.0
04.	Stack Height	Meter	30	82
05.	Stack Temperature	Degree Centi.	118	124
06.	Ambient Temperature	Degree Centi.	35	35
07.	Average Velocity of Flue Gases	M/Sec.	7.1	8.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100
11.	Measured Concentration of P.M.	mg/Nm3	52	70
12.	Permissible Limit for SO2	ppm	100	100
13.	Measured Concentration of SO2	ppm	2.3	16.8
14.	Permissible Limit for Nox	ppm	50	50
15.	Measured Concentration of Nox	ppm	13.8	15.7

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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234

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121

Ref. No. : 2025/09/2019-20

Date: 03/10/2019

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Security Gate	Nr. Weight Bridge 3	Nr. DIP Canteen
01.	Date of sampling	----	28/09/2019	28/09/2019	28/09/2019
02.	Time of sampling	Hr	9.40	9.50	10.00
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	----	SE	SE	SE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 15	3 to 15
06.	Average flow rate during sampling	m3/Hour	1.22	1.14	1.13
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	45	40	42
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	54	52	58
12.	Permissible Limits of SO₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	15.1	12.6	13.8
14.	Permissible Limits of NO₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	24.6	16.3	20.8

Instrument used : 1) Ecotech RDS, Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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235

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Ref. No. : 1021/08/2019-20

Date: 03/09/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 29th to 30th august 2019

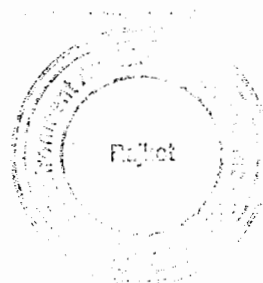
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	115	103	127	125	128
06.	Ambient Temperature	Degree Centi.	34	36	36	35	36
07.	Average Velocity of Flue Gases	M/Sec.	6.4	7.1	7	7.3	9.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	23	21	22	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	34	36	75	73	63
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	45.1	32.7	23.5
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	23.8	22.3	31.6

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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123

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Ref. No. : 1022/08/2019-20

Date: 03/09/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 29th to 30th august 2019

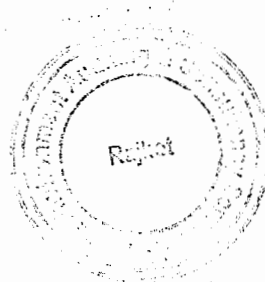
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-2	S -12	S - 3	S - 8	S - 9
01.	Stack Attached to	---	Coal Crusher	Blast Furnace - 2	Product separation bin (SIP)	Mg Converter-2 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Motor	0.6	3.0	0.6	0.4	0.5
04.	Stack Height	Meter	30	50	25	16	16
05.	Stack Temperature	Degree Centi.	75	110	80	75	73
06.	Ambient Temperature	Degree Centi.	34	35	36	36	37
07.	Average Velocity of Flue Gases	M/Sec.	7.2	7.3	7.4	7.2	8.4
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	22	22	23	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	62	71	65	52	43
12.	Permissible Limit for SO ₂	mg/Nm3	40	100	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	1.3	8.4	6.3	6.1	5.1
14.	Permissible Limit for Nox	mg/Nm3	25	50	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	13.1	12.8	17.4	9.6	16.2

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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237

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124

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Ref. No. : 1023/08/2019-20

Date: 03/09/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 29th to 30th August 2019

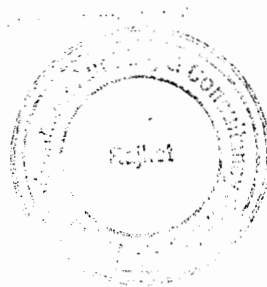
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 3	S - 8	S - 17
01.	Stack Attached to	---	Annoying Furnace - 2 (DIP-2)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	ESP	ESP	ESP
03.	Stack Diameter	Meter	3.2	4.0	2.0
04.	Stack Height	Meter	30	82	30
05.	Stack Temperature	Degree Centi.	115	127	121
06.	Ambient Temperature	Degree Centi.	34	35	36
07.	Average Velocity of Flue Gases	M/Sec.	7.2	8.2	7.3
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	22	23
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	56	72	71
12.	Permissible Limit for SO ₂	ppm	100	100	100
13.	Measured Concentration of SO ₂	ppm	2.5	17.9	21.6
14.	Permissible Limit for Nox	ppm	50	50	50
15.	Measured Concentration of Nox	ppm	14.2	16.5	21.1

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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125

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Ref. No. : 1025/08/2019-20

Date: 03/09/2019

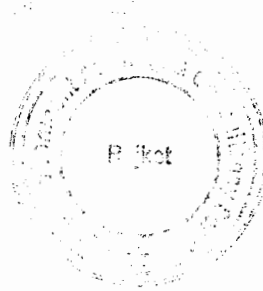
AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Security Gate	Nr. Weight Bridge 3	Nr. DIP Canteen
01.	Date of sampling	---	29/08/2019	29/08/2019	29/08/2019	29/08/2019
02.	Time of sampling	Hr	9.30	9.40	9.50	10.00
03.	Duration of Sampling	Min.	1440	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SE	SE	SE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 15	3 to 15	3 to 15
06.	Average flow rate during sampling	m3/Hour	1.13	1.21	1.13	1.12
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	43	52	42	46
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	63	68	65	75
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	12.5	15.2	15.4	14.7
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	22.3	25.8	17.5	22.1

Instrument used : 1) Ecotech Respirable Dust Sampler Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127
Calibrate Done on : 06/05/2019

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126

Ref. No. : 1024/08/2019-20

Date: 03/09/2019

DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING MONTH : AUGUST- 2019

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

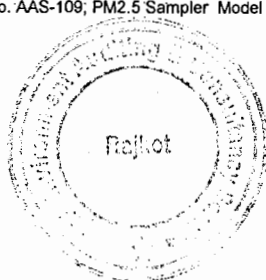
S. No.	Particulars	Unit	Nr. Weigh Bridge - 3									
			01	02	03	04	05	06	07	08	09	10
01.	No. of Week	---	01	02	03	04	05	06	07	08	09	10
02.	Date & Time Starting of Monitoring	---	02/08/19 08.30	05/08/19 08.45	09/08/19 09.00	12/08/19 09.15	16/08/19 09.30	19/08/19 09.30	22/08/19 09.40	26/08/19 09.15	30/08/19 09.30	
03.	Date & Time - Ending of Monitoring	---	03/08/19 08.30	06/08/19 08.45	10/08/19 09.00	13/08/19 09.15	17/08/19 09.30	20/8/19 09.30	23/08/19 09.40	27/08/19 09.15	31/08/19 09.30	
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440	
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE	SE	
06.	Wind Speed Velocity	Km/Hr.	3 to 11	3 to 11	3 to 11	5 to 14	3 to 15	4 to 13	2 to 14	3 to 16	4 to 12	
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.11	1.13	1.12	1.12	1.14	1.13	1.13	1.15	
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60	
11.	Measured Concentration of PM _{2.5}	µg/m ³	36	34	42	36	37	35	43	33	35	
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100	
13.	Measured Concentration of PM ₁₀	µg/m ³	65	55	64	58	53	54	59	64	52	
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
15.	Measured Concentration of SO ₂	µg/m ³	9.5	12.1	9.3	12.5	14.1	15.2	13.4	12.5	13.1	
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
17.	Measured Concentration of NO ₂	µg/m ³	15.2	16.2	15.1	12.6	15.1	16.3	21.8	14.5	16.4	

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109; PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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240

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127

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Ref. No. : 921/07/2019-20

Date: 31/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th July 2019

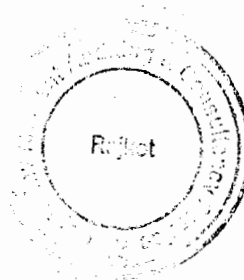
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	110	105	125	123	132
06.	Ambient Temperature	Degree Centi.	34	35	35	36	36
07.	Average Velocity of Flue Gases	M/Sec.	6.2	7.2	7.1	7.2	9.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	22	23	21	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	32	32	72	71	63
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	46.2	34.9	24.5
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	26.5	21.5	32.5

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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241

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128

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Ref. No. : 922/07/2019-20

Date: 31/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th July 2019

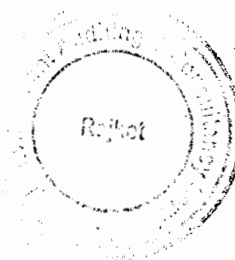
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-2	S -12	S - 3	S - 8	S - 9
01.	Stack Attached to	---	Coal Crusher	Blast Furnace - 1	Day Bin (SIP)	Mg Converter-2 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	3.0	0.6	0.4	0.5
04.	Stack Height	Meter	30	50	25	16	16
05.	Stack Temperature	Degree Centi.	72	112	82	78	70
06.	Ambient Temperature	Degree Centi.	34	36	36	36	37
07.	Average Velocity of Flue Gases	M/Sec.	7.1	7.5	7.6	7.1	8.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	20	23	21	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	100	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	65	73	68	58	45
12.	Permissible Limit for SO ₂	mg/Nm ³	40	100	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm ³	1.2	8.6	6.4	5.8	5.2
14.	Permissible Limit for Nox	mg/Nm ³	25	50	25	25	25
15.	Measured Concentration of Nox	mg/Nm ³	12.5	12.4	17.2	9.1	15.7

Instrument Used : Stack Monitoring Kit - Ecotech - CSS 100

Calibration Done On. : 13/09/2018

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129

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Ref. No. : 923/07/2019-20

Date: 31/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th July 2019

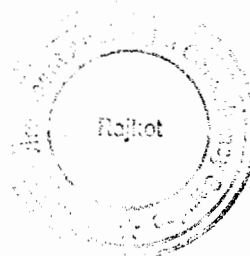
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 3	S - 8	S - 17
01.	Stack Attached to	---	Anneling Furnace - 2 (DIP-2)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	ESP	ESP	ESP
03.	Stack Diameter	Meter	3.2	4.0	2.0
04.	Stack Height	Meter	30	82	30
05.	Stack Temperature	Degree Centi.	112	125	118
06.	Ambient Temperature	Degree Centi.	36	36	37
07.	Average Velocity of Flue Gases	M/Sec.	7.3	8.1	7.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	21	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	58	74	74
12.	Permissible Limit for SO ₂	ppm	100	100	100
13.	Measured Concentration of SO ₂	ppm	12.8	18.8	22.4
14.	Permissible Limit for Nox	ppm	50	50	50
15.	Measured Concentration of Nox	ppm	14.8	16.2	20.8

Instrument Used : Stack Monitoring Kit - Ecotech - ESS I00

Calibration Done On. : 13/09/2018

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243

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130

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Ref. No. : 925/07/2019-20

Date: 31/07/2019

AMBIENT AIR QUALITY MONITORING REPORT

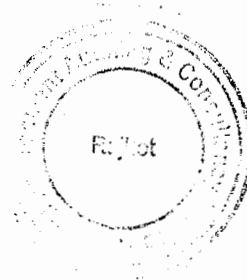
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Security Gate	Nr. Weight Bridge 3	Nr. DIP Canteen
01.	Date of sampling	---	25/07/2019	25/07/2019	25/07/2019	25/07/2019
02.	Time of sampling	Hr	9.30	9.40	9.50	10.00
03.	Duration of Sampling	Min.	1440	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SE	SE	SE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 15	3 to 15	3 to 15
06.	Average flow rate during sampling	m3/Hour	1.12	1.22	1.15	1.11
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	µg/m ³	60	60	60	60
09.	Measured Concentration of PM 2.5	µg/m ³	42	53	40	48
10.	Permissible Limits of PM 10	µg/m ³	100	100	100	100
11.	Measured Concentration of PM 10	µg/m ³	65	71	62	73
12.	Permissible Limits of SO ₂	µg/m ³	80	80	80	80
13.	Measured Concentration of SO ₂	µg/m ³	12.8	15.8	15.2	14.5
14.	Permissible Limits of NO ₂	µg/m ³	80	80	80	80
15.	Measured Concentration of NO ₂	µg/m ³	22.5	26.2	17.6	21.3

Instrument used : 1) Ecotech Respirable Dust Sampler Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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244

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Ref. No. : 924/07/2019-20

Date: 31/07/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : JULY- 2019**

Name of company : Electrotherm (India) Limited,

Village: Samakhiali, Taluka: Bhachau,

Dist. Kutch.

Sample Collected by : Royal Environment

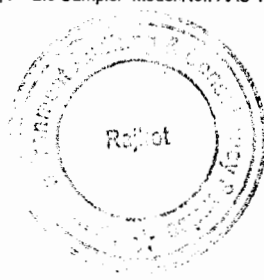
S. No.	Particulars	Unit	Nr. Weigh Bridge - 3									
			01	02	03	04	05	06	07	08	09	10
01.	No. of Week	---	01	02	03	04	05	06	07	08	09	10
02.	Date & Time Starting of Monitoring	---	01/07/19 08.15	05/07/19 08.30	08/07/19 08.45	12/07/19 08.45	15/07/19 09.00	19/07/19 09.15	22/07/19 09.45	26/07/19 08.50	29/07/19 08.50	
03.	Date & Time - Ending of Monitoring	---	02/07/19 08.15	06/07/19 08.30	09/07/19 08.45	13/07/19 08.45	16/07/19 09.00	20/07/19 09.15	23/07/19 09.45	27/07/19 08.50	30/07/19 08.50	
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440	
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE	SE	
06.	Wind Speed Velocity	Km/Hr.	3 to 11	3 to 11	3 to 11	5 to 14	3 to 15	4 to 13	2 to 14	3 to 16	4 to 12	
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.13	1.10	1.11	1.12	1.13	1.18	1.15	1.11	1.15	
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60	
11.	Measured Concentration of PM _{2.5}	µg/m ³	38	32	41	35	36	34	42	32	33	
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100	
13.	Measured Concentration of PM ₁₀	µg/m ³	62	53	63	56	51	52	57	61	54	
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
15.	Measured Concentration of SO ₂	µg/m ³	9.2	11.5	9.1	12.8	13.9	15.4	12.5	12.1	12.5	
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
17.	Measured Concentration of NO ₂	µg/m ³	14.8	16.4	15.2	12.3	14.9	16.2	22.1	14.3	16.3	

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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245

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132

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Ref. No. : 821/06/2019-20

Date: 03/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th June 2019

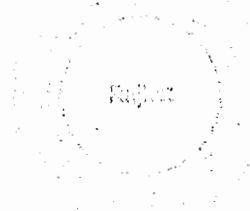
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	105	103	124	121	138
06.	Ambient Temperature	Degree Centi.	34	35	35	37	38
07.	Average Velocity of Flue Gases	M/Sec.	6.4	7.3	7.2	7.3	9.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	19	21	20	21	19
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	34	30	77	73	61
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	45.6	35.1	23.4
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	27.6	20.6	31.8

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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133

Ref. No. : 822/06/2019-20

Date: 03/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th June 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-2	S -12	S - 3	S - 8
01.	Stack Attached to	---	Coal Crusher	Blast Furnace - 2	Product Separation Bin (SIP)	Mg Converter-1 (DIP)
02.	Air Pollution Control Measures	---	Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	3.0	0.6	0.4
04.	Stack Height	Meter	30	50	25	16
05.	Stack Temperature	Degree Centi.	70	110	85	76
06.	Ambient Temperature	Degree Centi.	34	36	37	37
07.	Average Velocity of Flue Gases	M/Sec.	7.2	7.4	7.7	7.3
08.	Isokinetic flow rate for P.M. Sampling	LPM	21	20	21	22
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	67	71	70	60
12.	Permissible Limit for SO2	mg/Nm3	40	100	40	40
13.	Measured Concentration of SO2	mg/Nm3	1.4	8.8	6.5	5.9
14.	Permissible Limit for Nox	mg/Nm3	25	50	25	25
15.	Measured Concentration of Nox	mg/Nm3	11.3	11.6	16.6	9.3

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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247

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134

Ref. No. : 809/06/2019-20

Date: 03/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th June 2019

Test Method : As per IS Standards - 11255 1/2/3/7

Sr. No.	Particulars	Unit	Stack - 2
01.	Stack Attached to	---	D.G.Set SIP Plant
02.	Air Pollution Control Measures	---	---
03.	Stack Height	Meter	12
04.	Stack Temperature	Degree Centi.	116
05.	Ambient Temperature	Degree Centi.	33
06.	Average Velocity of Flue Gases	M/Sec.	8.8
07.	Isokinetic flow rate for P.M. Sampling	LPM	21
08.	Gaseous Sampling Flow Rate	LPM	2.0
09.	Permissible Limit for P.M.	mg/Nm3	100
10.	Measured Concentration of P.M.	mg/Nm3	70
11.	Permissible Limit for SO2	ppm	100
12.	Measured Concentration of SO2	ppm	3.5
13.	Permissible Limit for Nox	ppm	50
14.	Measured Concentration of Nox	ppm	24.8

Instrument Used : Stack Monitoring Kit - Ecotech Make - ESS 100

Calibration Done On. : 13/09/2018

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248

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135

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Ref. No. : 823/06/2019-20

Date: 03/07/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th June 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-13	S - 3	S - 8
01.	Stack Attached to	---	Anneling Furnace - 1 (DIP-1)	Anneling Furnace - 2 (DIP-2)	AFBC Boiler 1 & 2 (Power plant)
02.	Air Pollution Control Measures	---	ESP	ESP	ESP
03.	Stack Diameter	Meter	3.2	3.2	4.0
04.	Stack Height	Meter	30	30	82
05.	Stack Temperature	Degree Centi.	117	117	122
06.	Ambient Temperature	Degree Centi.	37	38	39
07.	Average Velocity of Flue Gases	M/Sec.	7.1	7.2	8.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	62	60	76
12.	Permissible Limit for SO ₂	ppm	100	100	100
13.	Measured Concentration of SO ₂	ppm	12.4	13.2	19.1
14.	Permissible Limit for Nox	ppm	50	50	50
15.	Measured Concentration of Nox	ppm	14.3	15.1	15.9

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Done On. : 13/09/2018

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249

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136

Ref. No. : 825/06/2019-20

Date: 03/07/2019

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Security Gate	Nr. DIP Canteen
01.	Date of sampling	---	27/06/2019	27/06/2019	27/06/2019
02.	Time of sampling	Hr	9.30	9.40	9.55
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SE	SE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 15	3 to 15
06.	Average flow rate during sampling	m3/Hour	1.11	1.21	1.13
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	µg/m ³	60	60	60
09.	Measured Concentration of PM 2.5	µg/m ³	44	51	49
10.	Permissible Limits of PM 10	µg/m ³	100	100	100
11.	Measured Concentration of PM 10	µg/m ³	68	74	71
12.	Permissible Limits of SO ₂	µg/m ³	80	80	80
13.	Measured Concentration of SO ₂	µg/m ³	13.2	16.1	14.1
14.	Permissible Limits of NO ₂	µg/m ³	80	80	80
15.	Measured Concentration of NO ₂	µg/m ³	21.3	25.2	20.4

Instrument used : 1) Ecotech Respirable Dust Sampler Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

Calibrate Done on : 06/05/2019

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250

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137

Ref. No. : 824/06/2019-20

Date: 03/07/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : JUNE- 2019**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

S. No.	Particulars	Unit	Nr. Weigh Bridge - 3							
			01	02	03	04	05	06	07	08
01.	No. of Week	---	01	02	03	04	05	06	07	08
02.	Date & Time Starting of Monitoring	---	03/06/19 09.30	07/06/19 09.00	10/06/19 08.35	13/06/19 08.45	17/06/19 09.15	21/06/19 09.40	24/06/19 08.50	27/06/19 09.00
03.	Date & Time - Ending of Monitoring	---	04/06/19 09.30	08/06/19 09.00	11/06/19 08.35	14/06/19 08.45	18/06/19 09.15	22/06/19 09.40	25/06/19 08.50	28/06/19 09.00
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE
06.	Wind Speed Velocity	Km/Hr.	3 to 11	5 to 14	3 to 15	4 to 13	2 to 14	3 to 16	4 to 12	7 to 11
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.10	1.11	1.19	1.14	1.12	1.17	1.15
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	40	36	37	38	43	30	35	33
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	64	58	50	54	55	63	56	52
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	9.4	13.4	14.2	15.1	12.8	11.9	13.5	7.2
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	15.1	11.9	15.2	16.1	21.2	15.6	16.3	14.2

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Done On. : 06/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009



251

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138

Ref. No. : 721/05/2019-20

Date: 05/06/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 30th to 31st May 2019

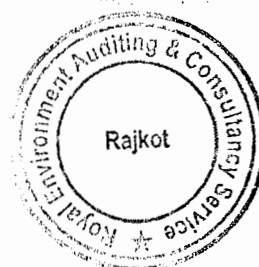
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	—	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	—	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	107	102	126	122	140
06.	Ambient Temperature	Degree Centi.	35	36	37	39	39
07.	Average Velocity of Flue Gases	M/Sec.	6.6	7.2	7.4	7.1	9.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	18	20	21	20	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	36	31	76	76	58
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	46.9	34.2	24.7
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	28.5	21.9	32.6

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Due On. : 12/09/2019

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252

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Ref. No. : 722/05/2019-20

Date: 05/06/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 30th to 31st May 2019

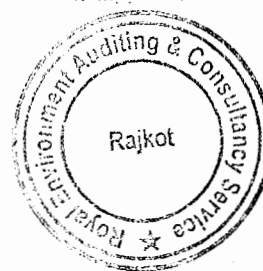
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-2	S -12	S - 3	S - 8	S - 9
01.	Stack Attached to	---	Coal Crusher	Blast Furnace - 1	Product Separation Bin (SIP)	Mg Converter-2 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	3.0	0.6	0.4	0.5
04.	Stack Height	Meter	30	50	25	16	16
05.	Stack Temperature	Degree Centi.	72	109	86	74	75
06.	Ambient Temperature	Degree Centi.	35	35	36	36	37
07.	Average Velocity of Flue Gases	M/Sec.	7.4	7.2	7.5	7.4	8.2
08.	Isokinetic flow rate for P.M. Sampling	LPM	22	21	22	21	19
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	69	73	72	63	42
12.	Permissible Limit for SO ₂	mg/Nm3	40	100	40	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	1.2	9.6	6.3	5.7	5.2
14.	Permissible Limit for Nox	mg/Nm3	25	50	25	25	25
15.	Measured Concentration of Nox	mg/Nm3	10.8	10.5	15.4	9.6	15.7

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Due On. : 12/09/2019

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253

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140

Ref. No. : 723/05/2019-20

Date: 05/06/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 30th to 31th May 2019

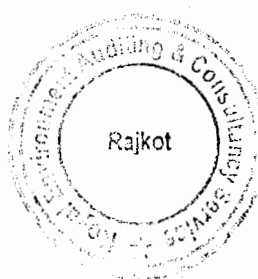
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 3	S - 8	S - 17
01.	Stack Attached to	---	Anneling Furnace - 2 (DIP-2)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	ESP	ESP	ESP
03.	Stack Diameter	Meter	3.2	4.0	2.0
04.	Stack Height	Meter	30	82	30
05.	Stack Temperature	Degree Centi.	119	124	121
06.	Ambient Temperature	Degree Centi.	37	39	40
07.	Average Velocity of Flue Gases	M/Sec.	7.1	8	7.4
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	62	75	79
12.	Permissible Limit for SO ₂	ppm	100	100	100
13.	Measured Concentration of SO ₂	ppm	12.4	19.6	22.1
14.	Permissible Limit for Nox	ppm	50	50	50
15.	Measured Concentration of Nox	ppm	14.3	15.2	20.5

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Due On. : 12/09/2019

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254

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141

Ref. No. : 725/05/2019-20

Date: 05/06/2019

AMBIENT AIR QUALITY MONITORING REPORT

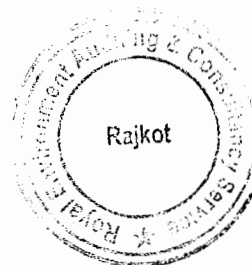
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Weigh Bridge - 3	Nr. DIP Canteen
01.	Date of sampling	---	30/05/2019	30/05/2019	30/05/2019
02.	Time of sampling	Hr	9.20	9.30	9.45
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SE	SE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 15	3 to 15
06.	Average flow rate during sampling	m3/Hour	1.10	1.23	1.11
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	46	45	47
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	63	66	69
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	12.7	15.4	13.7
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	20.6	24.9	21.6

Instrument used : 1) Ecotech Respirable Dust Sampler Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

All instrument's Calibrate due on : 05/05/2019

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255

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142

Ref. No. : 724/05/2019-20

Date: 05/06/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : MAY - 2019**Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

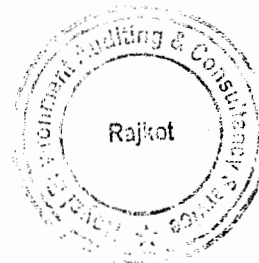
S. No.	Particulars	Unit	Nr. Security Gate									
01.	No. of Week	---	01	02	03	04	05					
02.	Date & Time Starting of Monitoring	---	02/05/19 09.10	06/05/19 08.40	10/05/19 08.40	13/05/19 08.20	17/05/19 08.55	20/05/19 09.15	24/05/19 08.35	27/05/19 08.45	30/05/19 08.30	
03.	Date & Time - Ending of Monitoring	---	03/05/19 09.10	07/05/19 08.40	11/05/19 08.40	14/05/19 08.20	18/05/19 08.55	21/05/19 09.15	25/05/19 08.35	28/05/19 08.45	31/05/19 08.30	
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440	1440	
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE	SE	
06.	Wind Speed Velocity	Km/Hr.	3 to 11	5 to 14	3 to 15	4 to 13	2 to 14	3 to 16	4 to 12	7 to 11	7 to 12	
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.10	1.11	1.10	1.20	1.13	1.10	1.20	1.14	1.10	
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60	
11.	Measured Concentration of PM _{2.5}	µg/m ³	42	38	36	39	45	32	36	31	30	
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100	
13.	Measured Concentration of PM ₁₀	µg/m ³	62	57	51	59	53	62	57	50	59	
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
15.	Measured Concentration of SO ₂	µg/m ³	9.1	12.5	13.7	14.7	13.6	12.5	12.9	7.5	10.2	
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
17.	Measured Concentration of NO ₂	µg/m ³	14.6	12.8	15.7	16.9	20.2	14.3	15.5	13.4	15.9	

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM2.5 Sampler Model No.: AAS 127

Calibration Due On. : 05/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

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256

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143

Ref. No. : 715/04/2019-20

Date: 01/05/2019

AMBIENT AIR QUALITY MONITORING REPORT

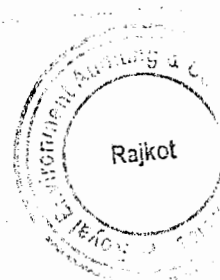
Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sr. No.	Particulars	Unit	Nr. Oxygen Plant	Nr. Weigh Bridge - 3	Nr. DIP Canteen
01.	Date of sampling	---	24/04/2019	24/04/2019	24/04/2019
02.	Time of sampling	Hr	9.10	9.20	9.35
03.	Duration of Sampling	Min.	1440	1440	1440
04.	Dominant Wind Direction (From)	---	SE	SE	SE
05.	Average Wind Speed	Km/Hr	3 to 15	3 to 15	3 to 15
06.	Average flow rate during sampling	m3/Hour	1.20	1.10	1.12
07.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
08.	Permissible Limits of PM 2.5	$\mu\text{g}/\text{m}^3$	60	60	60
09.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	48	43	42
10.	Permissible Limits of PM 10	$\mu\text{g}/\text{m}^3$	100	100	100
11.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	61	64	68
12.	Permissible Limits of SO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
13.	Measured Concentration of SO ₂	$\mu\text{g}/\text{m}^3$	13.7	14.6	15.8
14.	Permissible Limits of NO ₂	$\mu\text{g}/\text{m}^3$	80	80	80
15.	Measured Concentration of NO ₂	$\mu\text{g}/\text{m}^3$	21.3	25.6	20.7

Instrument used : 1) Ecotech Respirable Dust Sampler Model No. AAS - 217BL, Gaseouse Sampling Kit- AAS 109 & PM 2.5 Sampler AAS 127

All instrument's Calibrate Done on : 05/05/2019

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257

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Date: 01/05/2019

Ref. No. : 711/04/2019-20

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 24th to 25th April 2019

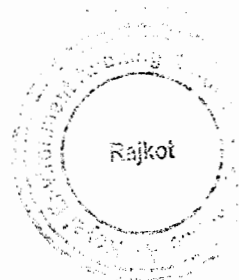
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 16	S - 17	S - 4
01.	Stack Attached to	---	Induction Furnace - I & II (SMS-1)	Induction Furnace - III & IV (SMS-2)	Rotary Kiln - I (SIP)	Rotary Kiln - II (SIP)	Sinter Head
02.	Air Pollution Control Measures	---	Bag Filter & Cyclone	Bag Filter & Cyclone	ESP	ESP	ESP
03.	Stack Diameter	Meter	1.2	1.2	2.8	2.8	3.2
04.	Stack Height	Meter	30	30	65	50	30
05.	Stack Temperature	Degree Centi.	105	98	129	132	144
06.	Ambient Temperature	Degree Centi.	34	35	36	38	39
07.	Average Velocity of Flue Gases	M/Sec.	6.5	7.4	7.5	7.4	9.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	20	21	22	21	19
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm ³	50	50	100	100	100
11.	Measured Concentration of P.M.	mg/Nm ³	39	37	78	73	56
12.	Permissible Limit for SO ₂	ppm	N.A.	N.A.	100	100	100
13.	Measured Concentration of SO ₂	ppm	---	---	48.6	36.5	26.7
14.	Permissible Limit for NO _x	ppm	N.A.	N.A.	50	50	50
15.	Measured Concentration of NO _x	ppm	---	---	31.5	26.7	30.8

Instrument Used : Stack Monitoring Kit - Ecotech - ESS I00

Calibration Due On. : 12/09/2019

Royal Environment Auditing & Consultancy Service



[Signature]
Analyst



258

Royal**Environment Auditing & Consultancy Service**

303-304, Shivalik-7, B/s Bal Adalat, Gondal Road, RAJKOT - 360 002.

Ph. +91 281 2360695 Email : royaleenvironment@live.com admin@royalconsultancy.com

145

Ref. No. : 712/04/2019-20

Date: 01/05/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 24th to 25th April 2019

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-4	S -12	S - 8	S - 9
01.	Stack Attached to	---	Day Bin (SIP)	Blast Furnace - 2	Mg Converter-2 (DIP)	Zn Coating (DIP)
02.	Air Pollution Control Measures	---	Cyclone Separator & Bag Filter	Bag Filter with Gas Cleaning Plant	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
03.	Stack Diameter	Meter	0.6	3.0	0.4	0.5
04.	Stack Height	Meter	15	50	16	16
05.	Stack Temperature	Degree Centi.	68	116	76	79
06.	Ambient Temperature	Degree Centi.	36	37	40	40
07.	Average Velocity of Flue Gases	M/Sec.	7.8	7.7	7.3	8.1
08.	Isokinetic flow rate for P.M. Sampling	LPM	19	20	22	20
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	100	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	63	71	61	48
12.	Permissible Limit for SO ₂	mg/Nm3	40	100	40	40
13.	Measured Concentration of SO ₂	mg/Nm3	1.6	10.5	5.2	5.3
14.	Permissible Limit for Nox	mg/Nm3	25	50	25	25
15.	Measured Concentration of Nox	mg/Nm3	13.9	11.6	10.8	16.7

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Due On. : 12/09/2019

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst



259

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146

Ref. No. : 713/04/2019-20

Date: 01/05/2019

REPORT OF STACK EMISSION ANALYSIS

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 24th to 25th April 2019

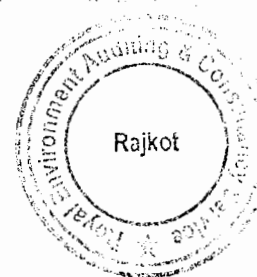
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S-19	S - 3	S - 8	S - 17
01.	Stack Attached to	---	Epoxy Plant	Anneling Furnace - 2 (DIP-2)	AFBC Boiler 1 & 2 (Power plant)	Sinter Tail
02.	Air Pollution Control Measures	---	Cyclone & Bag House	ESP	ESP	ESP
03.	Stack Diameter	Meter	16	3.2	4.0	2.0
04.	Stack Height	Meter	---	30	82	30
05.	Stack Temperature	Degree Centi.	46	120	120	119
06.	Ambient Temperature	Degree Centi.	35	38	38	39
07.	Average Velocity of Flue Gases	M/Sec.	7.3	7.0	8.1	7.5
08.	Isokinetic flow rate for P.M. Sampling	LPM	19	21	20	21
09.	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
10.	Permissible Limit for P.M.	mg/Nm3	150	100	100	100
11.	Measured Concentration of P.M.	mg/Nm3	48	64	72	82
12.	Permissible Limit for SO2	ppm	100	100	100	100
13.	Measured Concentration of SO2	ppm	2.1	15.7	22.5	26.4
14.	Permissible Limit for Nox	ppm	50	50	50	50
15.	Measured Concentration of Nox	ppm	12.7	14.9	16.4	21.7

Instrument Used : Stack Monitoring Kit - Ecotech - ESS 100

Calibration Due On. : 12/09/2019

Royal Environment Auditing & Consultancy Service



[Signature]
Analyst



260

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142

Ref. No. : 714/04/2019-20

Date: 01/05/2019

**DETAILED RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING
MONTH : APRIL - 2019**

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Sample Collected by : Royal Environment

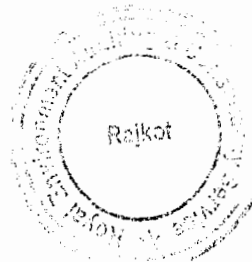
S. No.	Particulars	Unit	Nr. Security Gate							
01.	No. of Week	---	01		02		03		04	
02.	Date & Time Starting of Monitoring	---	02/04/19 08.00	05/04/19 08.20	09/04/19 08.05	12/04/19 08.00	16/04/19 08.15	19/04/19 08.05	23/04/19 08.25	26/04/19 08.35
03.	Date & Time - Ending of Monitoring	---	03/04/19 08.00	06/04/19 08.20	10/04/19 08.05	13/04/19 08.00	17/04/19 08.15	20/04/19 08.05	24/04/19 08.25	27/04/19 08.35
04.	Duration of Sampling	Min.	1440	1440	1440	1440	1440	1440	1440	1440
05.	Dominant Wind Direction (From)	---	SE	SE	SE	SE	SE	SE	SE	SE
06.	Wind Speed Velocity	Km/Hr.	3 to 10	3 to 11	5 to 17	3 to 14	4 to 12	2 to 15	3 to 15	4 to 13
07.	Average Flow Rate For Dust Monitoring PM _{2.5}	m ³ /Hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average Flow Rate For Dust Monitoring PM ₁₀	m ³ /Min.	1.12	1.10	1.14	1.13	1.21	1.20	1.11	1.10
09.	Average Flow Rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible Limits of PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60
11.	Measured Concentration of PM _{2.5}	µg/m ³	39	32	36	34	38	42	36	33
12.	Permissible Limits of PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100
13.	Measured Concentration of PM ₁₀	µg/m ³	61	53	55	58	61	50	63	59
14.	Permissible Limits of SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	9.2	11.5	10.4	12.5	11.6	12.3	11.8	10.1
16.	Permissible Limits of NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	15.7	16.4	13.7	16.9	17.2	21.5	15.9	16.7

Instrument Used: Ecotech make RDS, Model No.: APM - 217BL, Gaseous Sampler Model No. AAS-109, PM_{2.5} Sampler Model No.: AAS 127

Calibration Due On. : 05/05/2019

*Permissible limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service, Rajkot



Analyst

ENVIRONMENTAL AUDIT REPORT

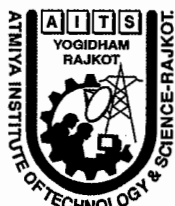
PERIOD

01-04-2019 to 31-03-2020
[April'19 to March'20]

CLIENT

M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali,
Ta: Bhachau, Dist.: Kutch

AUDITOR



ATMIYA INSTITUTE OF TECHNOLOGY & SCIENCE

“YOGIDHAM GURUKUL”, Kalawad Road, Rajkot-360005

Tel.: 0281-2563445, Tele Fax: 0281-2563766,

E-mail: rstank@vsc.edu.in | Website: www.ait.edu.in

Su
T.C

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

INDEX

Sr. No.	CONTENTS	Page No.
01.	Foreword	02
02.	Format for the Environmental Audit	03-11
03.	Declaration & Signatories	11
04.	Certificate for Sampling and Analysis	12
05.	Adequacy Certificate of Environmental Management System	13
06.	Annexure:	
	1 Electrical Consumption Details	15
	2 List of Directors / Partners	16
	3 Number of Shifts & Timings and No. of Production Days	17
	4 Production Details	18
	5 Raw Material Consumption	20
	6 Manufacturing Process	24
	7 Water Consumption & Waste Water Generation and ETP Details	34
	8 Quality of Effluent	38
	9 Details of ETP Operators	39
	10 Details of Flue Gas Stacks	40
	11 Stack Monitoring Analysis Reports by AITS	42
	12 Quality Analysis of the Ambient Air by AITS	45
	13 Air Pollution Control Measures (APCM)	46
	14 Details on hazardous and solid waste	48
	15 Details of Accidents	54
	16 Details of Disaster Management Plan & On-Site / Off-Site Emergency Plan	55
	17 Analysis report of the Noise level during day time by AITS	77
	18 Compliance Report of CC&A	78
	19 Observations and Recommendations	86
07.	Appendix:	
	1 Certificate of ISO	88
	2 Copy of current CC&A with all amendment	92
	3 Membership Certificate of TSDF Site	103
	4 Site Plan and Factory Layout	104
	5 Copy of insurance Policy Under PLI	105
	TOTAL	110

FOREWORD

As per the order of H'ble High court of Gujarat, Gujarat Pollution control Board implemented the Environment Audit Scheme in the month of April '97.

We are thankful to the Management of **M/s. Electrotherm (India) Ltd.** appointing us as an Environment Auditor for their Plant located at Survey No 325, Vil: Samakhiyali Ta: Bhachau, Dist: Kutch for the period from **April 2019 to March 2020**.

The objective of the Environment Audit was to evaluate the existing facilities provided to control and prevent Environment Pollution. In order to carry out the Environmental Audit the job was divided into two parts:

DATA COLLECTION:

As per the environmental Audit format prescribed by the Gujarat Pollution Control Board various information and data were collected, to evaluate the existing facilities which includes:

- Details of products manufactured, raw materials.
- Details of manufacturing process.
- Mass balance and water balance.
- Details of electricity and water consumption.
- Details of E.T.P and treatment process.
- Details of Air Pollution control measures.
- Details of hazardous/solid waste management.
- Details of emergency handling measures etc.
- Details of compliance under various acts and rules etc.

FIELD WORK AND LABORATORY STUDIES:

In order to evaluate the performance of Air pollution Control Measures, the Ambient Air Quality, Waste water quality and to monitor the Noise Level at: various location Samples were collected and analyzed at our Department i.e. Department of Environment and Pollution Control.

We extend our sincere thanks to the Managing Director and all the members of **M/s. Electrotherm (India) Ltd.** for their co-operation and help extended to us in data collection and fieldwork to complete the Environmental audit.

We are pleased to submit this environmental audit report for further necessary action.

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

151

:: FORMAT FOR THE ENVIRONMENTAL AUDIT ::
(PERIOD FROM 01.04.2019 TO 31.03.2020)

[A]	GENERAL	
1	Name of Industry	M/s. Electrotherm (India) Limited (Sponge Iron & Di Pipe Plant) (17826)
2	Location	Plot No.:325, Village: Samakhiyali - 370140 Taluka : Bhachau , District : Kutch
3	Registered Office Address	Survey No. 72, Palodia Via. Thaltej, Ahmedabad.
4	Month and year of Establishment	29/10/2004
5	a) No. of Workers employed b) Male / Female	Total- 2967 Male- 2959 Female- 08
6	a) No. of electrical connections with Service Number. b) Total connected load. c) Electric consumption per ton of product manufactured.	01 No. Service number. 31423 Annexure-1.
7	Number of DG sets and their capacity.	04 - 1250 KVA, 650 KVA, 650 KVA, 250 KVA
8	Name and Residential Address of all Directors.	Annexure-2.
9	Telephone Nos.: Residential & Industrial, Fax Nos. & Email of industry.	
10	Nos. of Shifts and Timings:	3 shifts + 1 general shift 8 hrs. each details of shift enclosed as Annexure-3.
11	Name and Address of the In-charge of Environment / Safety: Division / Cell / Unit.	Mr. R.P Singh (AVP HR & HSE) Electrotherm India Limited Guest House Block-B, Samakhiyali, Bhachau-270140
12	No. of Days during which Production Activities were in Operation during the period covered for it (For Audit).	No. of working Days: 352 Days Annexure-3 again.
13	Has the industry obtained ISO - 9000, ISO - 14000, OSHAS - 18000, or any other Environment Management accreditations / Certification or recognition?	Appendix-1.
14	Whether the Industry has adopted cleaner Production, Clean Technology or Clean Development Mechanism?	Plant is achieving zero discharge unit, and the treated water is used for Gardening and plantation.

[B]	PRODUCT DETAILS	
1	Name of Products and capacity with yield / purity per day	Annexure-4.
2	Name of all By - Products and its quantity per day.	Annexure-4 again.
3	Date of Commencement of production for each product.	11/04/2005.
4	All Raw Materials required for one kg of the products.	Raw Material data sheet is attached an Annexure-5.
5	Whether the Manufacturing Process is Continuous or Batch wise. Indicate the batch size. If the process is batch wise, No. of batches/ month along with the duration of the completion of each batch.	Manufacturing Process sheet is attached an Annexure-6.
6	Detailed Manufacturing Process with Flow Diagram, list of operations and processes with all chemical reactions, along with the time required (in hrs) for completion of each unit operation/ process and the total time for completion the entire batch, mass balance in respect of the quantity of water, input of raw materials and waste water generation.	Manufacturing Process flow diagram data is attached an Annexure-6 again.
[C]	WATER	
1	The Quantity of Water Consumed per day as well as per ton of product manufactured. (Please enclose the water balance diagram)	Water is used for Industrial Cooling, Process & Domestic Purpose only. And Water balance Diagram is also enclosed an Annexure-7.
2	The Quantity of Waste Water (trade waste) Generated per ton of each product per day, as well as per batch	Waste water generation is in term of cooling tower blow down and boiler blow down is used within plant premises after neutralization and same will be utilized for dust suppression and water sprinkling. Refer Annexure-7 again.
3	Effluent Treatment plant details: ▪ Name of size of the each unit. ▪ Capacity of the ETP. ▪ Flow diagram & Hydraulic diagram. ▪ Whether lighting arrangement around ETP is provided.	Annexure-7 again. 20 KL/Day. Yes

	- Whether the separate energy meter for Effluent Treatment Plant area is installed. If provided reading of the meter for consumption every month. - Whether flow meter is provided at the inlet & outlet of ETP. Please indicate the type of the flow meter.	Yes Yes, Magnetic flow meter is provided. Magnetic flow meter provided
4	The Method of Disposal of Effluent and final point of disposal of effluent	Please refer Annexure-7 again for ETP flow diagram enclosed. The plant is Zero Liquid Effluent plant, in which water is only used for cooling, road sprinkling purpose. Hence, the effluent is 100% recycled.
5	The Quality of Trade Effluent before and after treatment as well as at the end of each stage of treatment	Annexure-8.
6	The quantity and quality of sewage and its method of treatment & disposal a. As per Norms b. Total pollution load	We have STP unit with capacity of 50 KL/Day (MBBR Technology) and final disposal in Gardening.
7	The Open Area Available for disposal of the effluent	Zero Discharge plant, waste water generated is recycled back in the process and reused in Dust Suppression & Gardening.
8	Whether the Quality of Treated Effluent meets the specified norms. If no: the extent of deviation and Reason Thereof.	Yes
9	Improvement in effluent quality and quantity since previous environmental audit based on performance evaluation of effluent management system. If yes provide Details	On-going
10	Retrofitting undertaking to improve performance of E.T.P. If yes provide Details	"Membrane Type" Aeration system is planned for improving performance of ETP
11	Major Problems encountered during operation of effluent treatment facilities. If any and reason thereof.	No
12	The details about the Operator / Chemist responsible for operation & maintenance of Effluent Treatment Plant:	Annexure-9

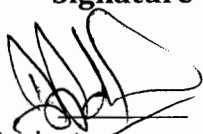
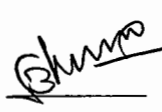
	i) Name of the Operators / Employee. ii) Qualification & Experience of each Operator / Employee. iii) Salary of Operators / Employees.	
13	The Current Status of Consent under Water Act - 1974.	Consent order No issued Vid_AWH-77789 Letter No 35574 GPCB ID-17826 dated 31/03/2016, valid up to Date 22/03/2021. Please refer Appendix-2.
[D] AIR		
1	No. of Flue Gas Stacks, their height (from Ground Level), nature and consumption of fuel.	Annexure-10.
2	Details pertaining to the Stack Monitoring Facilities	All the stacks are provided with ladder, monitoring platform & sampling port.
3	Number of Process Stacks, their height (from Ground Level), source, expected pollutants & details pertaining to provision of Stack Monitoring Facilities	Annexure-10 again.
4	The Quality of Emission from each flue gas stack and process stack and the extent of deviation from them	Annexure-11.
5	The Ambient Air Quality within the factory premises, along with the number of ambient air quality monitoring stations outside the industry	Annexure-12.
6	The Status of Consent under the Air Act - 1981	Consent order No issued Vid_AWH-77789 Letter No 35574 GPCB ID-17826 dated 31/03/2016, valid up to Date 22/03/2021. Appendix-2 again.
7	The details of Air Pollution Control measures for all process and flue gas stacks	Annexure-13.
8	Improvement in emission quality since previous environmental audit based on performance evaluation of air pollution management system. If yes provide details.	None
9	Retrofitting undertaken to improve emission quality. If yes provide details.	The concentration of pollutants in flue gas stack is well within the specified limits of GPCB. Hence no need of retrofitting.

10	Major problems encountered during operation of control device, if any and reason there of	No major problem encounter during operation of control devices. Not applicable.
[E] HAZARDOUS (SOLID) WASTE		
1	The Quantity, Sources & Composition of Hazardous / Solid Waste from each process. Sources over the last three years. (The total Sludge generation per ton of product) - Whether it is as per the Consented quantity.	Used oil-0.658 KL/Year Reused-0.648 Present stock-7.523 Hazardous Waste manifest is Attached as Annexure-14 . Total Solid Waste Generation in Year 2019-20 (Current)= 132.0 MT. Total Solid Waste Generation in Year 2018-19= 248.02 MT. Total Solid Waste Generation in Year 2017-18 = 262.96 MT
2	a. The Method of Storage, Treatment and Disposal of Hazardous / Solid Waste. The details should include area of storage and disposal and whether storage and disposal system is covered, made impervious (pucca). The quantity of hazardous waste sent to T. S. D. F. Please also indicate how the quantity of hazardous / solid waste shall be reduced in next three months. b. The data / information about leachates generation, quantity and characteristics and treatment facility.	The used / waste lubrication oil is being reused, as lubricant, in maintenance and if excess then it will be sold to the registered recycler(s). The process waste (Dust/Slag): At present we are storing the dust / slag for the future use of the same in manufacturing of bricks or it will be disposed of for: filling of the low level (Sanitary land) area, as approved by the local authority. For Membership Certificate, refer Appendix-3.
3	The Status of Authorization under the EPA - 1986 for Solid Waste.	Consent order No issued Vid_AWH-77789 Letter No 35574 GPCB ID-17826 dated 31/03/2016, valid up to Date 22/03/2021. Appendix-2 again.
4	Plan, if any to reduce hazardous waste generation or its recycling.	No.
[F] SITE PLAN		
1	The Site Plan showing the location of Effluent Treatment Plant, final point of disposal of effluent, sampling point, drainage line, stacks, solid waste storage, disposal area & green belt (its width)	Site Plan given as Appendix-4 .

[G]	RESOURCE RECOVERY	
1	(i) The details regarding Resource Recovery including treated effluent for recycle / reuse from environmental pollution control system including Effluent Treatment Plant. (ii) The details regarding Resource Recovery / Bye - Product Recovery from manufacturing process, by using cleaner production technology.	Waste Water generated from all the plants 100% recycled back into the process for cooling purpose after treatment by ETP. Domestic Waste Water treatment by STP after treatment of water will be used in Green belt development and irrigation. Charcoal: - Charcoal is being using in the (4927 MT) CPP & SIP as a raw material. Slag: Mill Scale/slag is being used in the Sinter Plant area as a raw material. Not applicable
[H]	HEALTH	
1	Whether any Hazard is involved in the manufacturing or from the work environment. If yes, the details thereof	No
2	Whether industry has Pre - employment & periodical medical examination facilities. Yes / No. If yes provide Details thereof.	Yes we have maintained Form No. 32 & 33 as per Factory Act.
3	Whether Health Records are maintained regarding adverse effect on the health of workers. If yes, the details thereof.	Yes: As per company, no adverse effect on the
4	Whether industry has appointed Factory Medical Officer. If yes, Full Time or Part Time. Please also include the details about the Name, Address and Qualification of the Factory Medical Officer.	Yes Full Time Dr. Bindheswari Singh MBBS, CIH, FMO
5	Details of Medical Facilities available. Please tick (✓) the correct column.	We have OHC facility and First Aid Box with first aid medicine is provided

6	Whether Sanitary Facilities like latrine, urinals, bathroom are provided and satisfactory.	Yes, All sanitary facilities have provided and are satisfactory												
[I] ACCIDENT DETAILS														
1	The details of Accidents in the factory and remedial measures taken	One Fatal accident reported. during the audit period. The Details of Fatal which have submitted to Board in FORM V Accident Reporting format as per Consent Condition. Victim is Ashish Kumar Joshi-Cause of Accident-Due to inhaled of CO gas. For Details please refer Annexure-15.												
[II] SAFETY MEASURES														
1	General Environment of the factory. Please tick (√) the appropriate column:: a) House Keeping : b) Dustiness : c) Lighting : d) Ventilation :	<table border="1"> <tr> <td>√Good</td><td>Fair</td><td>Poor</td></tr> <tr> <td>High</td><td>√Medium</td><td>Low</td></tr> <tr> <td>√Good</td><td>Fair</td><td>Poor</td></tr> <tr> <td>√Good</td><td>Fair</td><td>Poor</td></tr> </table>	√Good	Fair	Poor	High	√Medium	Low	√Good	Fair	Poor	√Good	Fair	Poor
√Good	Fair	Poor												
High	√Medium	Low												
√Good	Fair	Poor												
√Good	Fair	Poor												
2	Whether the following Protective Appliances are provided to all persons: a) Goggles : b) Gloves : c) Gumboot : d) Helmet : e) Skin cream : f) Soap : g) Ear Plugs : h) Face Masks : i) Clothing :	Yes/No If Yes How Many Yes All Protective appliances are provided as per requirement.												
3	The details of facilities for Disaster Management / Gas Leakage	Disaster management plan of the company at a glance is enclosed as per Annexure-16 .												
4	Whether On - site / off - site Emergency Plans are prepared and are being implemented / upgraded regularly. Please give details	Plans are being prepared & updated. Annexure-16 again.												
5	Whether records of occupational hazardous are maintained.	Yes												

6	Preventive measures adopted to minimize occupational hazard.	Yes Regular medical checkup of employee.
[K] REMEDIAL MEASURES		
1	The details of sources, monitoring and measures taken for control of Noise pollution in & around industrial premises	Monitoring Reports of noise refer Annexure-17.
2	The measures taken for prevention, treatment and control of Odor nuisance in and around the industrial premises	No odour nuisance observed.
3	The details in respect of Cases / Complaints, under Water Act-'74, Air Act-'81 and EPA - '86	As informed by the company, no cases/complaints under Water Act, Air Act & EPA Act are reported by GPCB. However GPCB officers have done "Five Inspection Visits" on 06/07/2019, 13/09/2019, 13/01/2020, 21/01/2020 & 20/02/2020. All the queries raised by GPCB officers have been answered / replied by the company most appropriately. All the relevant details are available with the company.
4	The Compliance Report with respect to all the conditions of NOC / Consent (under all the Acts)	Annexure-18.
5	Incidents of spillages, leakages etc. and remedial measures.	No.
6	Whether Insurance Policy is obtained under PLI Act? If yes, give details.	Appendix-5.
[L] WATER CESS		
1	The details regarding payment of Water Cess for the previous & current year	NA
[M] ENVIRONMENT CONSULTANT		
1	The name and address of Consultant engaged by the Company / Industry	M/s. Royal Environment Auditing & Consultancy Service 303, 304 Shivalik-7, Near Bal Adalat, Gondal Road, Rajkot-360004

[N]	DECLARATION & SIGNATORIES		
	It is hereby declared that all the information submitted in & with respect to this format by us is correct and for any lapse regarding incorrect or not giving complete information we are responsible for that.		
	(A)		(B)
	Name and signature of the recognized person of the industry / organization / Institute with the Stamp.		Name and signatures of all the members of the Audit team.
	Name	Signature	Name Signature
	1. Mr. Ashok Pundir VP SMS Operation & Projects		Dr. S. A. Puranik Director & Environmental Auditor (Schedule-I)
	2. Mr. Ravindra Singh AVP HR & HSE		Director, Env. Cell Atmiya Institute of Tech. & Science Rajkot
	3. Mr. Bhagwat S. Sharma AGM HSE		Prof. Hemant Sonkusre HOD, Civil Engg. Dept.
	4. Mr. Kuldeep Maurya Dy. Manager HSE		Ms. Sonal J. Shah HOD, Biochemistry & Microbiology Dept.
	5. Mr. Ankit Dwivedi Sr. Officer HSE		Dr. Anil Kumar S. Patel Chemistry Dept.

Certificate for Sampling and Analysis

This is to certify that the following samples of emissions (air, water, waste water, solid and hazardous wastes) have been collected and analyzed as per the following details:

Monitoring	Sample Details	Sampling Location	Collected By	Date of Sample Collection
Monitoring I	1. Water & Waste Water 2. Stack Emissions 3. Ambient Air Monitoring 4. Solid / Hazardous Waste	Details as mentioned in relevant monitoring Report	AITs Rajkot Env. Audit Team Member	24 th & 25 th Sept-2019.
Monitoring II	1. Water & Waste Water 2. Stack Emissions 3. Ambient Air Monitoring 4. Solid / Hazardous Waste	Details as mentioned in relevant monitoring Report	AITs Rajkot Env. Audit Team Member	14 th & 15 th Nov-2019.
Monitoring III	1. Water & Waste Water 2. Stack Emissions 3. Ambient Air Monitoring 4. Solid / Hazardous Waste	Details as mentioned in relevant monitoring Report	AITs Rajkot Env. Audit Team Member	22 nd & 23 rd Jan-2020.

- Parameters analyzed on site : Ambient air (SPM, RSPM, PM₁₀, PM_{2.5}), flue stack (SPM) and noise level.
- Parameters analyzed off site : Ambient air, flue stack & process stack samples for SO_x, NO_x, NH₃ etc. and waste water, solid / hazardous waste samples as per parameters mentioned in monitoring reports.
- Whether samples were preserved as per standard procedure for offsite analysis : **YES / NO**
- Parameters analyzed by third party : **None**
 - Name & Address of the laboratory : ---
 - Whether the laboratory is classified under : ---
- Method followed for analysis
 - Air emission : As per guidelines mentioned in GPCB Scientific Manual
 - Water / Waste Water : Section-I, Section-II & Section-III prepared by
 - Solid Waste : C. L. Meena, IAS, Chairman. These methods were
 - Hazardous Waste : followed for analysis of different samples as applicable.

Name and address of the Environmental Auditor

DATE: 10-06-2020

PLACE: Rajkot

for Dr. S. A. Puranik

Dr. S. A. Puranik
Director and Environmental Auditor-Schedule-I
Atmiya Institute of Technology & Science

Director, Env. Cell
Atmiya Institute of Tech. & Science
Rajkot.



AITs Environmental Audit Cell.
Atmiya Institute of Technology & Science, Rajkot

ADEQUACY CERTIFICATE OF ENVIRONMENTAL MANAGEMENT SYSTEM

Atmiya Institute of Technology & Science, Rajkot is recognized by the GPCB, Gandhinagar under the Environmental Audit Scheme introduced by the Hon'ble High Court of Gujarat, vide its Orders dated 20/12/1996 & 13/03/1997 and modified vide Order dated 16/09/1999 and Environmental Auditor for the purpose of the auditing, having carried out Environmental Audit of:

- a) **Name of company : M/s. Electrotherm (India) Ltd.**
(Sponge Iron & DI Pipe Plant),
- b) **Located at:** Plot No: 325 Village: Samakhiyali, Taluka: Bhachau,
Dist: Kutch East-370 140.
- c) **Manufacturing products as under:**

Sr. No.	Products		Capacity
1.	Sponge Iron		24,000
2.	D.I. Pipes		16,000
3.	Captive Power	WHRB	21 MWH
		FBC	24 MWH
4.	Pig Iron (Blast Furnace)		23,100
5.	Sinter Plant		32,400
6.	Steel Rolling Mill (TMT Plant)		52,166
7.	MS Billets/Bars		
8.	Stainless Steel billets		25,000
9.	Alloy Nickel		416
10.	Induction Furnace		17 Sets/Month
11.	Electric Cycle & Vehicles	All Model (Yo Bike)	1500 Sets/Month
		E-Rickshaw & E-Winner	650 Sets/Month

As per the directions of Hon'ble High Court in Environmental Audit Scheme and based on personal monitoring (collection of samples, analysis etc). We certify that the Environmental Management System provided by this industry for the products and capacity as stated above is adequate and efficacious to achieve the quality of effluents (Air + Waste Water + Solid Waste) as specified/required Consent/Notifications by GPCB, Gandhinagar for following quantity of effluents.

- d) Liquid Effluent : 284 m³/Day
e) Domestic (Sewage) : 30 m³/Day
f) Hazardous/Solid Waste :

Sr. No.	Type of Waste	Consent Quantity MT/Year
1.	Used Oil/Spent Oil (5.1)	7.31 KL
2.	Process Waste (7.2)	675 MT
3.	Drums/Barrels/Discarded Container (33.3)	2000 Nos.
4.	Zinc Dust (6.2)	208 MT
5.	Magnesium Dust (6.2)	252 MT
6.	Tar Containing Waste (11.3)	4.8 MT
7.	Epoxy Coating (11.3)	8.0 MT
8.	Oily Cotton Waste (11.3)	20 MT

- e). **Air emission:** **Adequate / Not Adequate & efficacious / Not efficacious**
(Flue gas stacks as well as process stacks)

This certificate is valid for the audit report only. However, it is subject to automatic cancellation in case of any change in product profile/capacity, quality and quantity of effluent emission (Air + Waste Water + Solid / Liquid Hazardous Waste) and efficiency of EMS equipments.

This Certificate forms part of environmental audit report.

DATE: 10-06-2020

PLACE: Rajkot

for stamp
Dr. S. A. Puranik
Director and Environmental Auditor- Schedule-I
Atmiya Institute of Technology & Science
Director, Env. Cell
Atmiya Institute of Tech. & Science
Rajkot.

Other members of Environmental Audit Team

[Signature]
Prof. Hemant Sonkusre
HOD, Civil Engg. Dept.

[Signature]
Dr. Sonal J. Shah
HOD, Biochemistry Dept.

[Signature]
Dr. Anilkumar S. Patel
Chemistry Dept.

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

163

Annexure-1

ELECTRICAL CONSUMPTION DETAILS

MONTHLY POWER CONSUMPTION-2019-20		
Sr. No	Month	CONSUMED QTY (UNIT-KWH)
1	Apr-19	34633640
2	May-19	3855560
3	Jun-19	38100360
4	Jul-19	36619920
5	Aug-19	35389080
6	Sep-19	35861480
7	Oct-19	36579920
8	Nov-19	38712400
9	Dec-19	38854320
10	Jan-20	38278000
11	Feb-20	37718280
12	Mar-20	31670600
TOTAL		406273560

MONTHLY POWER GENERATION-2019-20		
Sr. No.	Month	GENERATION (UNIT-MW)
1	Apr-19	38.924
2	May-19	41.094
3	Jun-19	41.100
4	Jul-19	40.500
5	Aug-19	39.165
6	Sep-19	39.215
7	Oct-19	38.624
8	Nov-19	41.910
9	Dec-19	41.069
10	Jan-20	38.610
11	Feb-20	38.241
12	Mar-20	31.249
TOTAL		469.701

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

164

Annexure-2

LIST OF DIRECTORS / PARTNERS

Sr. No.	Name	Designation	Address	Email & Contact No.
1.	Mr. Mukesh Bhandari	Chairman	A-1, Skylark Apartment Satellite Road, Ahmedabad : 380015	mukesh.bhandari@electrotherm.com Mob. No.: 9687673996
2	Mr. Shailesh Bhandari	Managing Director	A-1, Skylark Apartment Satellite Road, Ahmedabad : 380015	shailesh.bhandari@electrotherm.com Mob. No.: 9687673996
3	Mr. Dinesh Mukati	Independent Director	Survey No. 72, Palodia, Via Thaltej, Ahmedabad-382 115, Gujarat, India.	--
3.	Mr. Suraj Bhandari	Additional Director & Whole Time Director	A-1, Skylark Apartment Satellite Road, Ahmedabad : 380015	suraj.bhandari@electrotherm.com Mob. No.: 9687673996
4.	Mr. Pratap Mohan	Independent Director	Survey No. 72, Palodia, Via Thaltej, Ahmedabad-382 115, Gujarat, India.	--
5.	Ms. Nivedita R. Sarda	Independent Director	Survey No. 72, Palodia, Via Thaltej, Ahmedabad-382 115, Gujarat, India.	--

Annexure-3

NUMBER OF SHIFTS & TIMINGS AND NO. OF PRODUCTION DAYS

Shifts	Time
First	07:00 to 15:00 hrs.
Second	15:00 to 23:00 hrs.
Third	23:00 to 07:00 hrs.
General	09.00 to 18.00 hrs.

No. of Days Production Activities in Operation.

MONTH	NO. OF WORKING DAYS
Apr-19	27
May-19	31
Jun-19	30
Jul-19	31
Aug-19	31
Sep-19	30
Oct-19	31
Nov-19	28
Dec-19	29
Jan-20	31
Feb-20	29
Mar-20	24
Total	352

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

Annexure-4

PRODUCTION DETAILS

Name of the Product and Capacity per Month:

Sr No.	Name of product		Capacity MT/ Month	Purity / Yield
1	Sponge Iron		24,000	2.36
2	D.I Pipe		16,000	1.08
3	Captive Power	WHRB	21 MWH	---
		FBC	24 MWH	
4	Pig Iron(Blast Furnace)		23,100	1.06
5	Sinter Plant		32,400	....
6	Steel Rolling Mill (TMT)		52,166	1.05
7	MS Billets/Bars			1.04
8	Stainless steel billets		25000	....
9	Alloy Nickel		416	....
10	Induction Furnaces		17 Sets/Month	....
11	Electric cycle & vehicles	All Modal (Yo Bike)	....	....
		E-Rickshaw & E. Winner	....	....

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

167

Details of Actual production as per company record:

MONTHLY PRODUCTION-2019-20									
PRODUCT(MT)									
S.NO.	MONTH	SIP	SMS	RM	DIP	PIG	HOT METAL	SINTER	CPP
1	Apr-19	18043	23522	16581	15308	982	16980	23835	38.924
2	May-19	23880	28923	18298	15895	444	17515	26061	41.094
3	Jun-19	23974	27700	21952	14942	165	16431	22681	41.100
4	Jul-19	23622	27845	20319	10128	1054	13344	18007	40.500
5	Aug-19	22934	24888	17424	11184	698	14053	21913	39.165
6	Sep-19	18176	25289	16832	11799	876	14220	17923	39.215
7	Oct-19	18056	23397	20437	12752	972	16349	25201	38.624
8	Nov-19	23997	26232	25304	13419	951	16941	27382	41.910
9	Dec-19	23997	28018	27675	14498	695	11286	16938	41.069
10	Jan-20	23822	28797	27675	10631	429	12493	18604	38.610
11	Feb-20	23692	25947	27117	14400	0.00	15440	21751	38.241
12	Mar-20	17642	22782	23079	10839	23	12243	17200	31.249
Total		261835	313340	262693	155795	7289	177295	257496	469.701
MT/ Month		21,819.583	26,111.667	21,891.083	12,982.917	607.417	14,774.583	21,458	39.142
MT/ Day		743.85	890.17	746.29	442.60	20.71	503.68	717.26	1.33



Annexure-5

RAW MATERIAL CONSUMPTION

Actual Raw Material Consumption MT/month as per the company record

SMS PLANT RAW MATERIAL CONSUMPTION DATA-2019-20			
SR. NO.	MONTH	ITEM	
		SCRAP (Qty. In MT)	SPONGE IRON (Qty. In MT)
1	Apr-19	5423.61	3017.353
2	May-19	8039.97	23861.559
3	Jun-19	5719	25077.425
4	Jul-19	4438.348	24943.531
5	Aug-19	4577.445	22322.264
6	Sep-19	6221.8	22052.943
7	Oct-19	3989.247	21802.37
8	Nov-19	3435.21	25935.816
9	Dec-19	5226.545	26230.021
10	Jan-20	5085.055	27734.707
11	Feb-20	3724.83	23044.585
12	Mar-20	5537.055	19290.08
TOTAL		55994.505	262295.301

SPONGE IRON PLANT RAW MATERIAL CONSUMPTION DETAIL-2019-20						
SR. NO.	MONTH	ITEM				
		IRON ORE	IRON ORE PELLETS LOCAL	S. COAL	DOLOMITE	CHARCOAL
1	Apr-19	2875.29	22530.82	16238.3	1022	0
2	May-19	3151.98	33035.97	20734.134	1554	0
3	Jun-19	570.27	33730	20824.79	1603	0
4	Jul-19	7381.45	26312.86	19851.67	1036.5	0
5	Aug-19	1041.76	31601	19748.725	1242.3	321
6	Sep-19	2021.05	24366.08	15597.96	921	561
7	Oct-19	2932.38	23112	16077.08	954	56
8	Nov-19	0	34523.9	20319.29	1176	0
9	Dec-19	0.35	36213	21984.66	1240	81
10	Jan-20	1944.35	33397	21842.32	1410	0
11	Feb-20	0	29262	18012.92	895	0
12	Mar-20	0	24765	15490.78	1111	0
TOTAL		21918.88	352849.63	226722.629	14164.8	1019

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

169

CPP RAW MATERIAL CONSUMPTION- 2019-20				
SR. NO.	MONTH	I. COAL	IG2 COAL	CHARCOAL
1	Apr-19	18457	411.25	0
2	May-19	18150	614.202	439
3	Jun-19	18342.11	680.999	439
4	Jul-19	18544	0	351
5	Aug-19	17365	3.14	388
6	Sep-19	18493	0	439
7	Oct-19	18457.71	0	262
8	Nov-19	18042	0	263
9	Dec-19	17749	0	434
10	Jan-20	16029	0	310
11	Feb-20	15585	0	272
12	Mar-20	12360	0	311
TOTAL		207573.82	1709.591	3908

BF PLANT RAW MATERIAL CONSUMPTION DETAIL-2019-20					
SR. NO.	MONTH	IRON ORE	IRON ORE PELLET	LAM COKE	QUARTZITE
		Qty. in MT	Qty. in MT	Qty. in MT	Qty. in MT
1	Apr-19	6379.021	0	11350.25	633.850
2	May-19	4724.329	440.502	11195.486	385.159
3	Jun-19	5752.551	0	10686.516	572.796
4	Jul-19	4923.013	182.246	9078.161	598.556
5	Aug-19	5392.670	79.298	10094.648	505.033
6	Sep-19	4998.307	717.414	10495.907	419.491
7	Oct-19	6512.571	0	11475.558	463.348
8	Nov-19	6543.047	0	11046.816	415.789
9	Dec-19	4416.404	0	8174.815	287.355
10	Jan-20	6291.159	0	8962.421	481.552
11	Feb-20	6991.104	0	10632.25	401.830
12	Mar-20	4881.509	0	8284.031	267.083
TOTAL		67805.685	1419.46	121476.859	5431.842

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

170

DIP PLANT RAW MATERIAL CONSUMPTION DATA -2019-20			
SR. NO.	MONTH	HOT METAL	SCRAP
1	Apr-19	16676.069	480.527
2	May-19	16825.688	375.140
3	Jun-19	16047.282	61.800
4	Jul-19	11504.795	120.420
5	Aug-19	12924.642	199.610
6	Sep-19	12929.580	410.863
7	Oct-19	14967.428	335.600
8	Nov-19	15841.562	192.849
9	Dec-19	10125.173	63.550
10	Jan-20	11612.784	45.280
11	Feb-20	15419.399	36.840
12	Mar-20	12125.804	7.600
TOTAL		167000.21	2330.079

ROLLING MILL RAW MATERIAL CONSUMPTION DATA FOR THE YEAR 2019-20	
MONTH	M.S.BILLETS CONSUMPTION (IN MT)
Apr-19	17300.159
May-19	19220.032
Jun-19	23053.784
Jul-19	21303.966
Aug-19	18289.337
Sep-19	17786.003
Oct-19	21736.976
Nov-19	26382.857
Dec-19	28894.951
Jan-20	28605.938
Feb-20	28412.902
Mar-20	24177.789
TOTAL	275164.694

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

171

Name of Raw material Consumption of raw material per unit of product Output		
Name of product: Clinker/kg of Product	During the previous Financial year 2018-19	During the current Financial year 2019-2020
1) MS Billets/ Bar	1) Sponge Iron- 0.84MT/ton 2) Scrap-0.35 MT/ton	1) Sponge Iron- 0.84MT/ton 2) Scrap-0.20 MT/ton
2) Steel Rolling Mill	1) 03 MT/Ton	1) 1.047 MT/Ton
3) Sponge Iron	1) Iron Ore- 0.36 MT/Ton 2) Coal-0.84 MT/Ton 3) Dolomite-0.05 MT/Ton	1) Iron Ore- 0.084 MT/Ton 2) Coal-0.87 MT/Ton 3) Dolomite-0.054 MT/Ton 4) Pellets-1.35 MT/Ton
4) DI Pipe	1) Pig Iron/hot metal: 1.041 MT/Ton 2) CRC Scrap: 0.020 Mt/ton	1) Pig Iron/hot metal: 1.07 MT/Ton 2) CRC Scrap: 0.015MT/ton
5) Power Plant	1) Coal: 0.46 MT/KWH	1) Coal: 0.445 MT/KWH
6) Pig Iron	1) Iron Ore-0.31 MT/Ton 2) Coke-0.65 MT/Ton 3) Quartzite-0.03 MT/Ton	1) Iron Ore-0.37 MT/Ton 2) Coke-0.66 MT/Ton 3) Quartzite-0.02 MT/Ton

Annexure-6

Detailed Manufacturing Process:

Process Description of Blast Furnace Plant

General:

The purpose of a blast furnace is to chemically reduce and physically convert iron oxides into liquid iron called "hot metal". The blast furnace is a huge, steel stack lined with refractory brick, where iron ore, coke and limestone are dumped into the top, and preheated air is blown into the bottom. The raw materials require 6 to 8 hours to descend to the bottom of the furnace where they become the final product of liquid slag and liquid iron. These liquid products are drained from the furnace at regular intervals. The hot air that was blown into the bottom of the furnace ascends to the top in 6 to 8 seconds after going through numerous chemical reactions. Once a blast furnace is started it will continuously run for four to ten years with only short stops to perform planned maintenance.

Manufacturing Process:

The blast furnace is a counter-current reaction where solids descend and gases ascend. In this reaction there are numerous chemical and physical reactions that produce the desired final product which is hot metal. The main inputs for the blast furnace are iron ore (sinter); coke and lime stone.

The Iron ore; as naturally available on earth is either in the form of Hematite (Fe_2O_3) or in the form of Magnetite (Fe_3O_4) and the iron content ranges from 60% to 68%. Sinter is produced from fine raw ore, small coke, sand-sized limestone and numerous other steel waste materials that contain some iron. These fine materials are proportioned to obtain desired product chemistry then mixed together. This raw material mix is then placed on a sintering strand, which is similar to a steel conveyor belt, where it is ignited by gas fired furnace and fused by the heat from the coke fines into larger size pieces that are from 10 mm to 30 mm. The iron ore, pellets and sinter

then become the liquid iron produced in the blast furnace with any of their remaining impurities going to the liquid slag.

The coke is produced from a mixture of coals. The coal is crushed and ground into a powder and then charged into an oven. As the oven is heated the coal is cooked so most of the volatile matter such as oil and tar are removed. The cooked coal, called coke, is removed from the oven after 18 to 24 hours of reaction time. The coke contains 90 to 93% carbon, some ash and sulphur but compared to raw coal is very strong. The strong pieces of coke with a high energy value provide permeability, heat and gases which are required to reduce and melt the iron ore, pellets and sinter.

The final raw material in the iron making process is limestone; which can be in pure calcium chloride, calcium oxides or dolomite limestone containing magnesia or a blend of the two types of limestone.

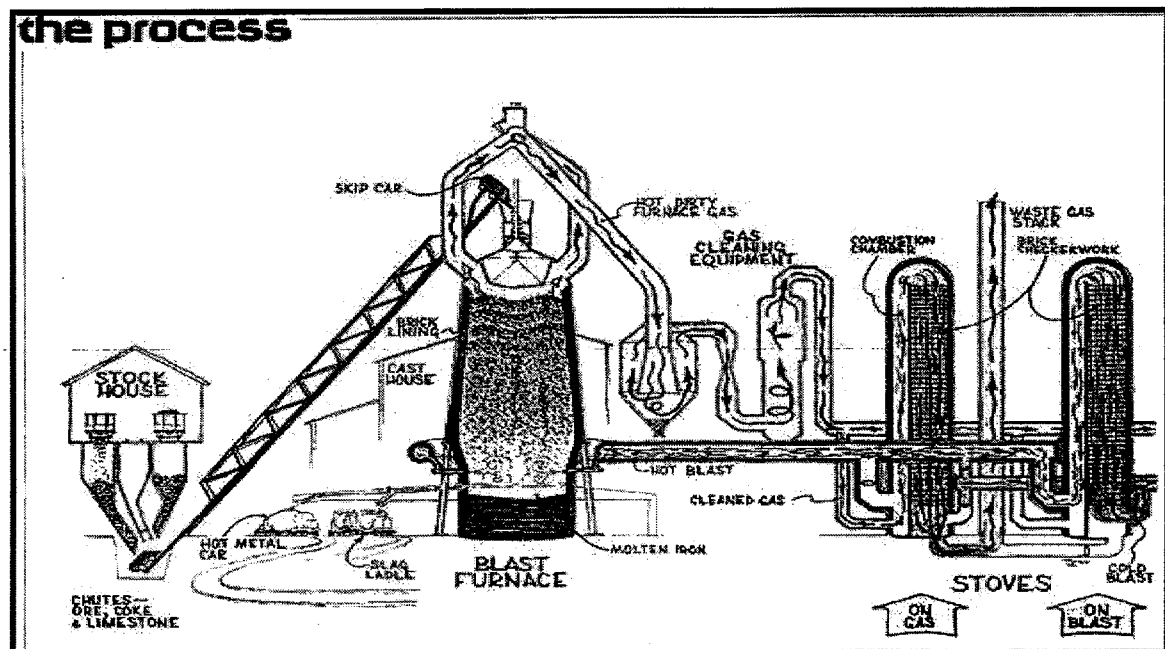
All of the raw materials are stored in separate silos and transferred to the stock-house before charging. Once these materials are charged into the furnace top, they go through numerous chemical and physical reactions while descending to the bottom of the furnace.

The major chemical reactions consist of reduction of iron ore; oxidation (burning) of carbon in the coke. Another important series of reaction takes place at high temperature is the reaction of lime with impurities; resulting in slag.

Another product of the iron making process, in addition to molten iron and slag, is hot dirty gases. These gases exit the top of the blast furnace and proceed through gas cleaning equipment where particulate matter is removed from the gas and the gas is cooled. This gas has a considerable energy value so it is burned as a fuel in the "hot blast stoves" which are used to preheat the air entering the blast furnace to become "hot blast". Any of the gas not burned in the stoves is sent to the boiler house and is used to generate steam which turns a turbo blower that generates the compressed air known as "cold blast" that comes to the stoves.

Gas Cleaning System of Blast Furnace:

The hot dirty gases generated from the top of the blast furnace shall be cleaned in the Gas cleaning system. Dry gas cleaning system, in which series of bag filters will be installed.



Process description of WHRB Power Plant

The existing Captive Power Plant is installed based on the state-of-art technology. The most advanced and techno-commercially feasible facility is installed. The proposed Power plant will be having total two Wastes heat Recovery Boilers. The ample heat available in the exhaust gases (from the proposed sponge iron plant) will be 26conomiz to generate steam at Waste Heat Recovery Boilers.

System Design – Mechanical

System in the power plant is designed based on the following normal operating conditions:

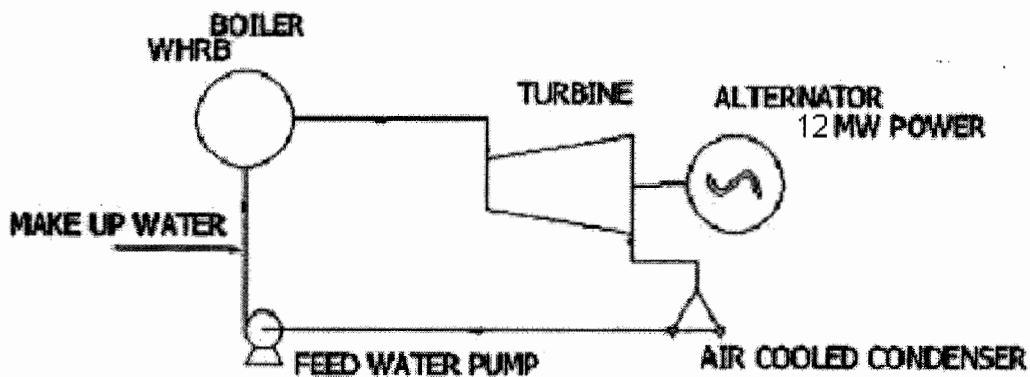
- Power at generator terminal: 12 MW
- Voltage of power generation: 11 KV

Following gives the design basis of the different system offered for the proposed WHRB plant.

Process and Control Mechanism

Steam Turbine Generators (STG) are the main assembly in the Power Plant. The steam generator(s) shall be outdoor type and waste heat recovery boilers.

The boiler shall receive the water from 27conomizer27 Water Treatment System; which shall convert raw water to soft water suitable for the boiler application. The steam generated at Boiler will be passed through the Turbine attached to it. In turbine Generator, the steam will be used to rotate the coil in magnetic field to produce electricity. This electrical energy will be supplied at step-up transformer; from where, it is transmitted at high voltage to step-down transformer for distribution.



TYPICAL FLOW DIAGRAM OF STEAM BASED TURBO GENERATOR SET

Fig 1.0: Flow diagram of steam based generator

Part of the steam shall be used to regenerate the feed water temperature and thereby improve the thermodynamic cycle efficiency. The steam; during this process gets cooled and then; it shall pass through an Air Cooled condenser. This condensate so formed shall be pumped back with pumps to the deaerator and then to the boiler.

There will be other auxiliary systems which shall be used to like Compressed air system, air-conditioning system, etc; detailed description of the same is given in subsequent sections.

COMPONENTS OF THE CPP

Waste Heat Recovery Boiler System

The waste heat recovery boilers are designed to operate only with the thermal energy in the waste gases from the rotary kilns and these boilers do not need any supplementary or auxiliary firing. There is no fuel usage in the waste heat recovery boilers. The waste gases from After Burning Chamber (ABC) of Sponge Iron Kilns will be conveyed to the waste heat boilers through gas ducts. Proper refractory lining shall be given for the ducting as the gases will be coming at high temperature in the range of 950–975°C.

Air Cooled Condenser (ACC)

- The exhaust will be connected to an air – cooled condenser to maintain 0.18 Ata pressure in the condenser during normal operation.
- The air cooled condenser will have of extruded aluminium fins.
- The proposed condenser is sized for 105% the quantity of exhaust steam flow expected from the turbine in MCR condition.
- Air cooled condenser is design with atmospheric temperature of 420°C
- At lower ambient, the ACC will develop a better vacuum and it is assumed that STG will be designed to take advantage of the same and produce more power.

Compressed Air System

The requirement of compressed air for instrument and the control systems of the power plant will be supplied by two instrument air compressors with one working and one stand-by arrangement to assure smooth and continuous operation of the plant. A centralized compressed air system is provided to meet the requirements of ash handling system, instrument and service air requirement of the power plant. The air separator will be provided with accessories like inter cooler, after cooler, Moisture separators, Air driers, air receivers and control panel.

Water System

In the proposed Activities, the major requirement of water shall be in the steam generation in CPP. The total water requirement will be fulfilled by Gujarat Water infrastructure limited. The copy of allotment letter is enclosed as Annexure. The full-proof water handling system is proposed for raw water management. Water system consists of raw water storage system of adequate capacity; and water treatment system designed to provide continuous flow of required water quantity.

Solid Waste (Ash) Handling System

In the Waste Heat recovery boiler (WHRB), practically no ash is generated. The Particulate Matter already available in the hot gases is only passing through the waste heat boilers & that to be collected into ESP. The ash handling system proposed for the WHRB is Dry type dense phase ash handling system. Since the radiant chamber ash and ash from the super heater & evaporator will be at high temperature, the ash will be cooled to acceptable temperature by air in the ash cooler and then fed to the dense phase system. The ash from other outlets like economizer, electrostatic precipitator will be at lower temperatures in the range of 160-350°C and hence directly fed in to dense phase ash handling system. The ash collected from various points will be conveyed to the common silo fitted with a dust conditioner through dense phase pneumatic ash handling system. The ash silo capacity will be to suit the evacuation requirements.

SOURCES OF POLLUTION AND CONTROL TECHNIQUES

The proposed sponge iron plant, pig iron plant, TMT plant and Sinter plant will impose some Environmental Pollution. In this section, we will identify the sources of pollution. A broad outline of the pollution control techniques is also delineated. The industry has proposed a system to protect the environment. The system consists of best equipment and management practices to minimize the pollution caused to the environment.

1 Air Pollution & Control System

For air pollution control, there are various types of measures adopted. The facilities include Electrostatic Precipitator, Bag-houses, in addition, the wet handling systems /Bag filters are also proposed for the Blast furnace plant.

Adequate and efficient measures have been provided to keep the dust emission at a bare minimum level. Efficient Collection of dust at sources, their dedusting with efficient filters and recycling the dust to process is the prime objective. Primary dust source are the crusher house, screen house, kiln/furnace in iron plants. However, in case of kiln, the gases will be routed through the WHRB and in case of Blast furnace; the gases will be routed through the stoves. Both these systems are envisaged for heat recovery; which also helps in reduction of dusting to the atmosphere.

The particulars of most specific individual sources and their pollution control measures are delineated as follows:

Flue Gas Stacks of WHRB Plant

Number of Stack	:	2
Stack attached to	:	Sponge Iron Kiln (routed through WHRB)
Type of fuel used	:	Waste heat from Sponge Iron kiln
Air Pollution Control equipment	:	Electrostatic Precipitator
Stack height from GL	:	50 meter lime treatment will be provided)

Besides these major stacks to control the fugitive emission other Air Pollution Control measure will be installed with Iron Ore Crusher / Coal Crusher / Stock House / Intermediate Bin etc. Detail of same is mentioned in below table 1.0:

Table 1.0: Plant Stacks

Sr. No.	Source of emission	Stack Dia. (mm)	Stack Height (m)
1.	Iron Ore Crusher/Screen House	550	12
2.	Coal Crusher/Screen House	550	22
3.	Coal Injector Building	200	11
4.	Intermediate Bin	650	12
5.	Product Separation/ Storage House	650	22

Table 1.1: Measure to Prevent Fugitive Emission during Loading Unloading and Transportation.

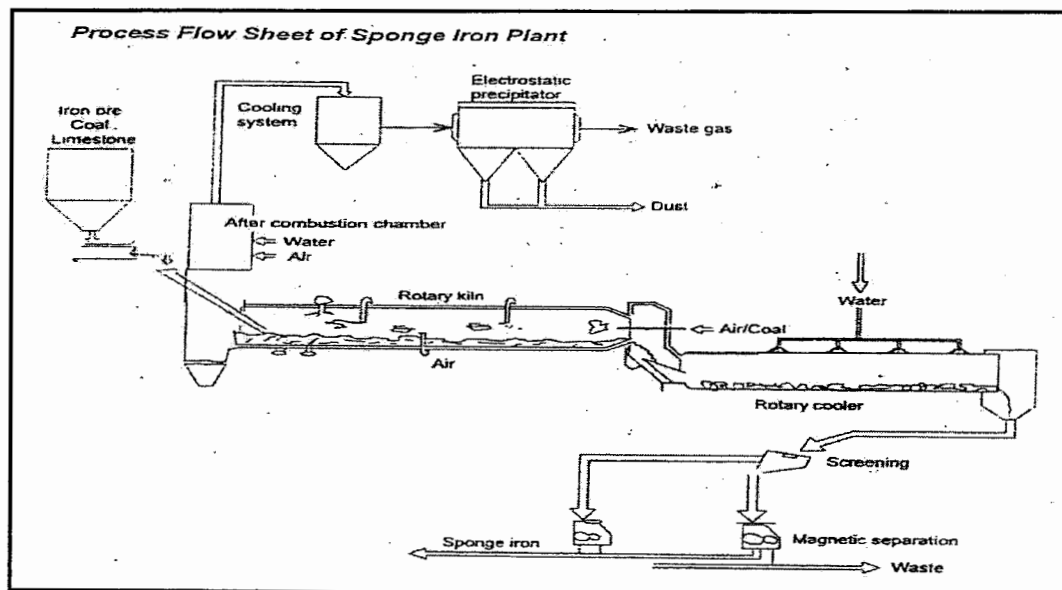
Fugitive Emission Source	Control Technique	Control Equipments	Categorization of Control System Capabilities
Active Storage Piles	- Watering - Windscreen - Plantations	-Water Sprinkler on yard	RACT
Conveyor & Transfer Points	- Water Spray - Hooding & Ducting	-Dust Suppression system -Bag Filters	RACT
Product Handling	- Windscreen - Hooding & Ducting	-Bag Filters	RACT
Loading & Unloading	- Windscreen - Water Sprays	-Water Sprinkler on yard	RACT
RACT – Reasonable Available Control Technology.			

Description of manufacturing process

Sponge Iron

The production process of sponge iron using S/L process involves four steps namely;

- Raw material preparation plant:** The raw material preparation plant consists of crushers and screens through which the seized material required for process is prepared. Normally, jaw crushers are used for iron ore crushing and roll or impact crushers for coal. The feeding for the crushers are done through the conveyors and vibrating feeders.
- Stock house:** The stock house consists of the raw material storage bins; which store material up to 24 hours plant requirement. There are four bins one each for iron ore, feed coal, limestone and injection coal. The raw materials are fed into a rotary kiln through the volumetric/weight feeders at a predetermined rate.
- Reduction kiln:** The processing of the materials consists mainly of kiln and cooler system. The iron ore is pre-heated and reduced in a rotary kiln and passes to the rotary cooler; where it gets cooled. The cooled material is then passes to the belt conveyor; where the cooler discharge is fed to the product house conveyor. The material is then led to the product separation circuit. An intermediate bin is provided to take care of any eventualities occurring due to breakdown of the product separation circuit.
- Product separation plant:** in the product separation section, the sponge iron and the coal-char (un-burnt coal) are separated. The cooler discharge material is screened to different sizes, and fed into magnetic separator. The sponge iron is magnetic and hence, it gets attracted to the magnet present in the magnetic separator and is discharged to separate bins the dust in the hot gases settles and gets cleaned.



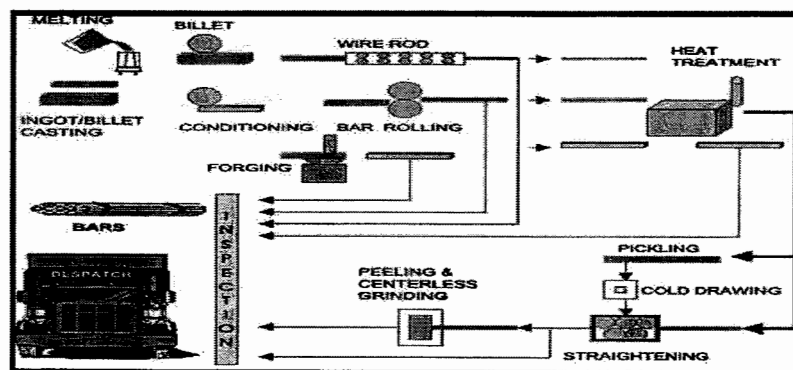
STEEL BILLETS, INGOTS, STAINLESS STEEL BILLETS:

Raw materials are procured as per prefixed quality standards. Basic raw materials are charged in to the Induction furnace to achieve the required temperature. On achieving required temperature, melted mass is being poured in to the ladle refining furnace by tilting mechanism. This molten mass is charged in to the continuous casting machine where it is cooled with the help of High pressure water spray. This is then transferred to the rolled table for cutting operations for different sizes. Final products are steel billets, ingots, slabs which are ready for captive consumption for production of Rods & bars

TMT PLANT PROCESS

Billet received from Steel Melt Shop are inspected and cut to length as per the size of TMT to be rolled. These billets are then put into Billet Reheating Furnace where it is heated to rolling temperature depending on the grade of steel. The reheated Billets are passed through 3 nos. of roughing stands and then goes to Continuous Stands which are 12 in number. These stands are with A.C. motor for Variable speeds.

After C12 the bar passes through TMT Box where it goes under Thermo Mechanical Treatment to improve upon Corrosion Resistance and Mechanical properties like Yield Stress, Elongation, Bending, Tensile strength, etc. After passing through TMT box, the bar is cut into lengths to accommodate on cooling bed. After the bar is cooled it is cut into fix lengths as per requirement of market through Shearing Machine. At an interval of 1 hour a sample is drawn for checking weight per meter and mechanical properties.



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

182

Annexure-7

WATER CONSUMPTION, WASTE WATER GENERATION & ETP DETAILS

WATER CONSUMPTION-2019- 20					
S.NO.	MONTH	CONSUMED QTY(KL)	COOLING	DOMESTIC	PROCESS
1	Apr-19	96491	57894.6	5789.46	32806.94
2	May-19	92351	55410.6	5541.06	31399.34
3	Jun-19	57857	34714.2	3471.42	19671.38
4	Jul-19	62684	37610.4	3761.04	21312.56
5	Aug-19	86265	51759	5175.9	29330.1
6	Sep-19	114433	68659.8	6865.98	38907.22
7	Oct-19	115067	69040.2	6904.02	39122.78
8	Nov-19	114540	68724	6872.4	38943.6
9	Dec-19	80849	48509.4	4850.94	27488.66
10	Jan-20	107319	64391.4	6439.14	36488.46
11	Feb-20	107159	64295.4	6429.54	36434.06
12	Mar-20	77538	46522.8	4652.28	26362.92
Total		1112553	667531.8	66753.18	378268.02

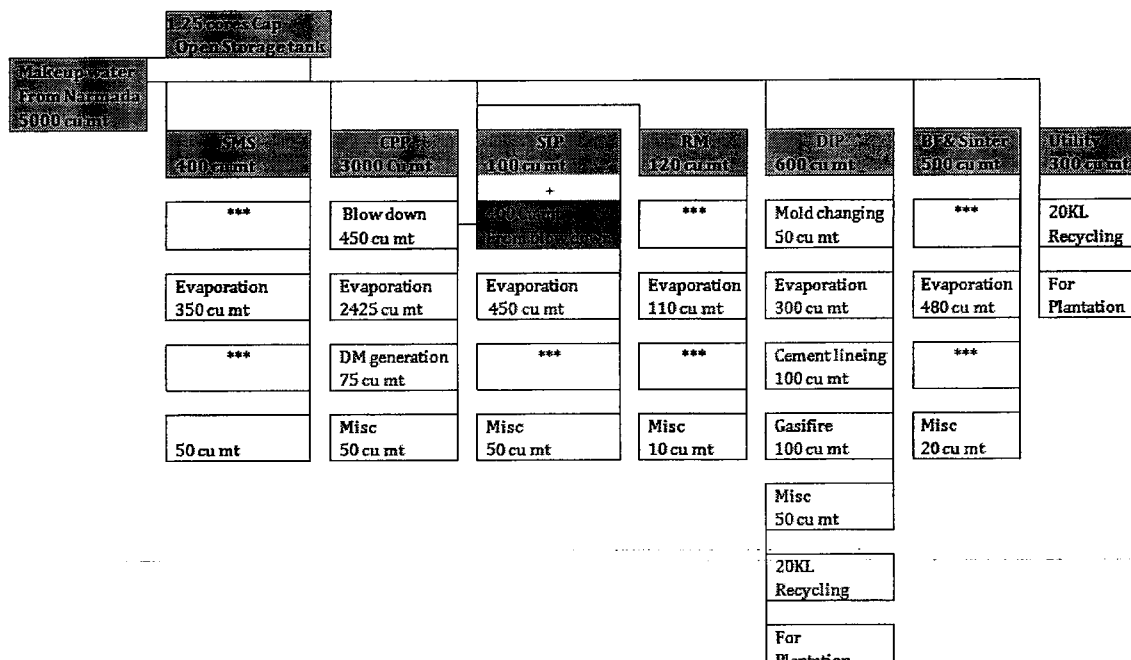
Waste Water Generation details from STP: 2019-20		
Sr. No.	Month	Qty (KL)
1	Apr-19	840
2	May-19	780
3	Jun-19	750
4	Jul-19	810
5	Aug-19	765
6	Sep-19	810
7	Oct-19	750
8	Nov-19	840
9	Dec-19	795
10	Jan-20	750
11	Feb-20	754
12	Mar-20	575
Total		9219

Details of Water Consumption as per Consent Application (Per Day)	
Total Water use in Industrial	3160.66 KL/Day
Cooling	1896.39 KL/Day
Processing	1074.62 KL/Day
Domestic	189.63 KL/Day

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Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

183

WATER BALANCE DIAGRAM



EFFLUENT TREATMENT PLANT

SIZE & CAPACITY OF ETP

Sr. No.	Name of the Unit	No. of units	Capacity/size
1.	Equalization tank	01	40 KL/RCC MAKE
2.	Effluent pump	01	VASS ENT.
3.	pH Correction dosing system	01	VASS ENT.
4.	pH correction cum mixing	01	VASS ENT.
5.	Primary tube settler	01	VASS ENT.
6.	Aeration tank	01	VASS ENT.
7.	Air blower (01W+01S)	02	VASS ENT.
8.	Secondary tube settler	01	VASS ENT.
9.	Sludge holding	01	VASS ENT.
10.	Chlorine contract tank	01	VASS ENT.
11.	Chlorine dosing tank	01	VASS ENT.
12.	Filter feed pump	01	VASS ENT.
13.	Multi grade filter	01	VASS ENT.
14.	Activated carbon filter	01	VASS ENT.
15.	Final treated water storage tank	01	VASS ENT.
16.	Electrical Panel	01	VASS ENT.

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

184

EFFLUENT TREATMENT PLANT

CHEMICAL CONSUMPTION AT ETP

Month	Qty. Kg
Apr-19	30.8
May-19	31.9
Jun-19	15.8
Jul-19	14.3
Aug-19	16.9
Sep-19	18.4
Oct-19	14.7
Nov-19	20.7
Dec-19	16.3
Jan-20	17.9
Feb-20	18.3
Mar-20	12.3
TOTAL	228.3

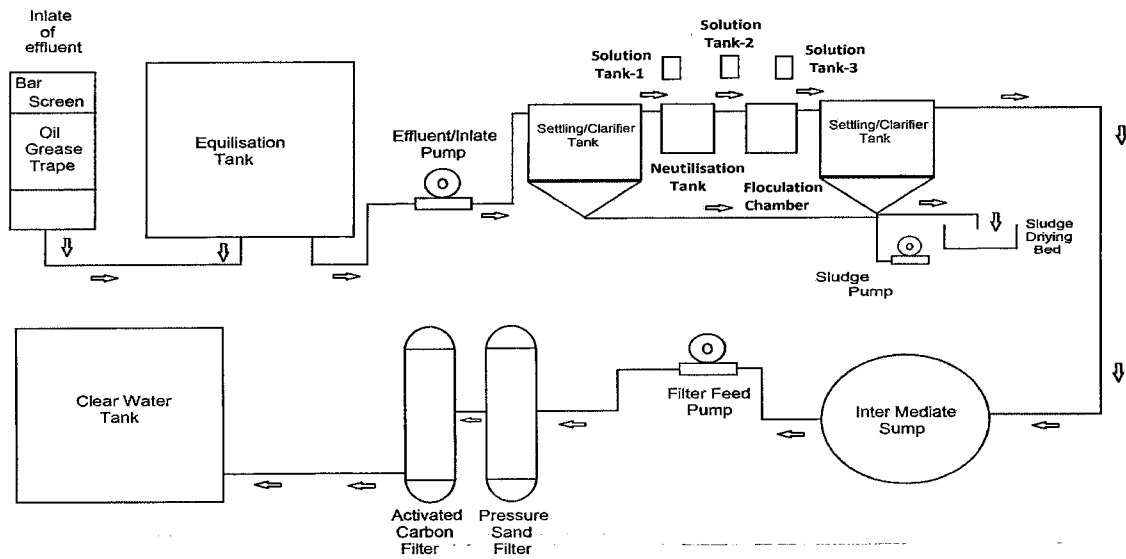
Details of Power Consumption in Effluent Treatment Plant

Sr. No.	Month	Power Consumption KWH / Month
1	Apr-19	2155
2	May-19	2160
3	Jun-19	2158
4	Jul-19	2098
5	Aug-19	2160
6	Sep-19	2100
7	Oct-19	2150
8	Nov-19	2160
9	Dec-19	2145
10	Jan-20	2100
11	Feb-20	2155
12	Mar-20	2010
TOTAL		25551

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

185

ETP FLOW DIAGRAM



Annexure-8

QUALITY OF EFFLUENT MONITORING REPORTS BY AITS

Sampling Location: at Outlet of ETP:

Sr. No.	Parameters	Units	GPCB Limit	1 st Visit	2 nd Visit	3 rd Visit
				24 th & 25 th Sept-2019	14 th & 15 th Nov-2019	22 nd & 23 rd Jan-2020
1	PH		6.5 to 8.5	7.63	7.51	8.12
2	Temperature	° C	40° C	33.0	29.00	27.00
3	Colour (pt. co. scale units)	units	100	05	06	08
4	Suspended Solids	mg / l	100	13	09	11
5	Oil & Grease	mg/l	10	ND	ND	ND
6	Phenolic Compound	mg/l	01	ND	ND	ND
7	Amonical Nitrogen	mg/l	50	2.5	2.1	1.9
8	BOD (3 Days at 27 °C)	mg/l	30	26	24	27
9	COD	mg/l	100	81	89	76
10	Chlorides	mg/l	600	518	561	467
11	Sulphates	mg/l	1000	261	298	233
12	Total Dissolved Solids	mg/l	2100	1364	1689	1467
13	Sodium Absorption Ratio	mg/l	26	19	22	20
14	Percent Sodium	%	60	44	49	42
15	Sulphides	mg/l	02	ND	ND	ND
16	Total Chromium	mg/l	02	0.06	0.03	0.05
17	Hexavalent Chromium	mg/l	0.1	ND	ND	ND
18	Copper	mg/l	03	ND	ND	ND
19	Lead	mg/l	0.1	ND	ND	ND
20	mercury	mg/l	0.01	ND	ND	ND
21	Nickel	mg/l	03	ND	ND	ND
22	Zinc	mg/l	05	ND	ND	ND
23	Cadmium	mg/l	02	ND	ND	ND
24	Cyanides	mg/l	0.2	ND	ND	ND
25	Arsenic	mg/l	0.2	ND	ND	ND
26	Fluorides	mg/l	02	0.5	0.7	0.6
27	Insecticides/Pesticides	-	Absent	Absent	Absent	Absent

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Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

187

Annexure-9

DETAILS OF ETP OPERATORS

Sr. No.	Name	Qualification	Experience (Years)	Salary
1	Mr. Sanjay Sharma	B.Sc.	19	37807
2	Mr. Nilesh Dargi	B.Sc.	15	36282
3	Mr. Nishant Jadav	B.Sc.	1	15500

Annexure-10

DETAILS OF FLUE GAS STACKS

Nos. of The Flue Gas Stacks, Their Height (From Ground Level), Nature & Consumption Of Fuel

Sr. No.	Stack attached to	Stack height (m)	Type of Fuel used	Fuel consumption (Cu. M/Day)	Pollutant
1	Reheating furnace	30 m	Furnace oil	1000 L/day	PM, SO ₂ , NO _x
2	Blast furnace 01	30 m	Coke		PM, SO ₂ , NO _x
3	AFBC-Boiler 1&2 (Power Plant)	90 m	Imported coal Lignite Char Coal Waste Heat	Imported coal: 25 MT/day Lignite: 550 MT/day Char coal: 144 MT/day Waste heat: 85000 m3/day	PM, SO ₂ , NO _x
4	D. G set	12 m	Diesel	1800 Liter/day	PM SO ₂ NO _x
5	Rotary Kiln No. 1 (WHRB)	65 m		3.0 MT/Hr	PM, SO ₂ , NO _x
6	Induction (melting furnace) 1	30 m	Electricity		PM
7	Boiler	30 m	Coal	03 MT/Day	PM, SO ₂ , NO _x
8	Blast furnace 02	30 m	Coke		PM, SO ₂ , NO _x
9	Annealing furnace	30 m	FO	2700 Litre/day	PM, SO ₂ , NO _x
10	Induction (melting furnace) 02	30 m	Electricity		PM
11	Induction furnace 02	30 m	Electricity	.....	PM
12	Sinter Stack (02 Nos.)	30 m	Coke Breeze	108 MT/Day	PM, SO ₂ , NO _x

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

189

Nos. of Process Stacks, Their Height (From Ground Level), Source, Expected Pollutants & The Details Pertaining To The Provision Of Stack Monitoring Facilities.

Sr. No.	Stack attached to	Stack Height (m)	Pollutant
1	Gas exits (Pilot burner stack)	30 m	Not Applicable
2	Gas exits (Coal crusher)	30 m	Not Applicable
3	Meg Convertor	16	Not Applicable
4	Zinc coating	16	Not Applicable
5	Barrel grinding and De dusting	16	Not Applicable
6	Bitumin drying oven	30	Not Applicable
7	Core cleaning section	16	Not Applicable
8	Iron ore circuit (Crusher & Screen)	25 m	Not Applicable
9	Stock house (Day bin)	15 m	Not Applicable
10	Injection coal (Transfer house)	15 m	Not Applicable
11	Production storage bunker (Production house)	15 m	Not Applicable
12	Intermediate bin & product separation bin	25 m	Not Applicable

Annexure-11

STACK MONITORING ANALYSIS REPORTS BY AITS

1st Monitoring: 24th & 25th September-2019.

DETAILS OF FLUE STACK:

Sr. No.	Stack Attached To	Pollutants		
		PM	SO ₂	NO _x
	GPCB Limits	100/50 mg/Nm ³	100 ppm	50 ppm
1.	AFBC Boiler 1 & 2	46.28	69.97	42.39
2.	Rotary Kiln No. 1	34.79	31.54	31.65
3.	Rotary Kiln Attached with WHRB	21.43	26.77	29.50
4.	Annealing Furnace-1	24.89	10.68	38.91
5.	Annealing Furnace-2	30.20	12.41	40.55
6.	Induction Furnace-1	44.15	---	---
7.	Induction Furnace-2	39.78	---	---
8.	Induction Furnace-3	26.37	---	---
9.	Blast Furnace-1	19.61	14.33	53.96
10.	Blast Furnace-2	37.85	40.41	68.17
11.	Sinter Stack	36.70	13.98	18.24

DETAILS OF PROCESS STACK:

Sr. No.	Stack Attached To	Pollutants		
		PM	SO ₂	NO _x
	GPCB Limits	100 mg/Nm ³	40 mg/Nm ³	25 mg/Nm ³
1.	Meg Convertor	56.34	---	---
2.	Zinc Coating	69.81	---	---

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

190

2nd Monitoring: 14th & 15th Nov-2019.

DETAILS OF FLUE STACK:

Sr. No.	Stack Attached To	Pollutants		
		PM	SO ₂	NO _x
	GPCB Limits	100/50 mg/Nm ³	100 ppm	50 ppm
1.	AFBC Boiler 1 & 2	61.74	78.65	39.46
2.	Rotary Kiln No. 1	40.54	43.70	29.78
3.	Rotary Kiln Attached with WHRB	19.68	21.63	24.31
4.	Annealing Furnace-1	18.76	12.46	32.78
5.	Annealing Furnace-2	25.14	10.59	34.26
6.	Induction Furnace-1	35.50	---	---
7.	Induction Furnace-2	30.29	---	---
8.	Induction Furnace-3	36.74	---	---
9.	Blast Furnace-1	15.23	12.75	42.69
10.	Blast Furnace-2	29.78	34.99	45.61
11.	Sinter Stack	42.59	15.35	25.76

DETAILS OF PROCESS STACK:

Sr. No.	Stack Attached To	Pollutants		
		PM	SO ₂	NO _x
	GPCB Limits	100 mg/Nm ³	40 mg/Nm ³	25 mg/Nm ³
1.	Meg Convertor	Sample not taken		
2.	Zinc Coating	Sample not taken		

3rd Monitoring: 22nd & 23rd Jan-2020.

DETAILS OF FLUE STACK:

Sr. No.	Stack Attached To	Pollutants		
		PM	SO ₂	NO _x
	GPCB Limits	100/50 mg/Nm ³	100 ppm	50 ppm
1.	AFBC Boiler 1 & 2	45.63	87.98	41.25
2.	Rotary Kiln No. 1	36.20	46.82	25.69
3.	Rotary Kiln Attached with WHRB	16.87	18.50	22.91
4.	Annealing Furnace-1	15.42	9.77	25.46
5.	Annealing Furnace-2	19.74	8.32	28.41
6.	Induction Furnace-1	29.56	---	---
7.	Induction Furnace-2	24.97	---	---
8.	Induction Furnace-3	30.29	---	---
9.	Blast Furnace-1	18.95	21.21	33.57
10.	Blast Furnace-2	22.40	19.45	38.64
11.	Sinter Stack	35.31	13.70	27.96

DETAILS OF PROCESS STACK:

Sr. No.	Stack Attached To	Pollutants		
		PM	SO ₂	NO _x
	GPCB Limits	100 mg/Nm ³	40 mg/Nm ³	25 mg/Nm ³
1.	Meg Convertor	47.98	---	---
2.	Zinc Coating	53.66	---	---

Annexure-12

QUALITY ANALYSIS OF THE AMBIENT AIR BY AITS

ANALYSIS REPORT OF AMBIENT AIR

SR. NO.	Parameter ($\mu\text{g}/\text{m}^3$)	24 th & 25 th Sept-2019	14 th & 15 th Nov-2019	22 nd & 23 rd Jan-2020	GPCB Standards
1	Near Security Main Gate				
	PM ₁₀	91.86	78.45	86.21	100
	PM _{2.5}	52.63	46.18	49.72	60
	SO ₂	14.62	10.59	12.65	80
	NO _x	17.91	14.57	18.30	80
2	Near DIP Canteen				
	PM ₁₀	75.35	69.78	65.42	100
	PM _{2.5}	45.71	39.46	34.51	60
	SO ₂	10.60	9.29	8.78	80
	NO _x	15.77	13.26	12.35	80
3	Near Material Gate				
	PM ₁₀	96.88	89.51	92.47	100
	PM _{2.5}	56.47	50.90	53.29	60
	SO ₂	15.10	16.73	15.55	80
	NO _x	18.56	16.77	20.86	80
4	Near Oxygen Plant				
	PM ₁₀	77.30	71.64	74.60	100
	PM _{2.5}	40.55	35.33	38.72	60
	SO ₂	11.71	9.37	10.93	80
	NO _x	20.50	17.96	18.25	80

Annexure-13

Air Pollution Control Measures (APCM)

S.No.	Name of Plant	Name of Air Pollution Control Measure	No of APCM
1.	SMS	Bag Filter Cyclone Separator Fume Extraction System (Exhaust Hood)	08 Nos. 04 Nos. 14 Nos.
2.	Sponge Iron	Bag Filter ESP	09 Nos. 02 Nos.
3.	DIP	Bag Filter Cyclone Separator	06 Nos. 04 Nos.
4.	Power Plant	ESP	02 Nos.
5.	Blast Furnace	Bag House Wet Scrubber GCP	06 Nos. 01 No. 01 No
6.	Sinter Plant	ESP	02 Nos.
7.	All Plants	Mechanized Water Sprinkler & Rains Guns	210

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

194

DETAIL LIST OF INSTALLED OCEMS& OCEQMS SYSTEM		
Sr. No	Plant	Analyzed Parameter
1	Blast Furnace-1	PM SO2 NOx
2	AFBC Boiler CPP	
3	Blast Furnace-2	
4	Killn-1	
5	Killn-2	
6	Sinter Tail	
7	Sinter Main	
8	Annealing Furnace	
10	Product Separation Bin	
9	Day-Bin	PM
11	Induction_Furnance_1	
12	Induction_Furnance_2	
13	Induction_Furnance_02_SMS_1	
14	DM-Plant - Flow	

Annexure-14

GENERATION AND DISPOSAL OF SOLID / HAZARDOUS WASTE

The quantity: sources & composition of hazardous waste / solid waste from each process / sources. (The total generation of the sludge per tonne of product manufactured.)

Details of Hazardous Waste Generation & Disposal.

NAME OF ITEM :-ZINC DUST				
MONTH	OP. STOCK	PRODUCTION/OTHER RECEIPT	HOME CONSUMPTION	CLOSING STOCK
Apr-19	12.405	33.739	42.030	4.114
May-19	4.114	21.535	0.000	25.649
Jun-19	25.649	40.435	54.676	11.408
Jul-19	11.408	13.379	0.000	24.787
Aug-19	24.787	22.757	22.847	24.697
Sep-19	24.697	37.595	0.500	61.792
Oct-19	61.792	29.868	46.221	45.439
Nov-19	45.439	26.416	14.870	56.985
Dec-19	56.985	19.465	23.803	52.647
Jan-20	28.854	22.489	18.995	32.389
Feb-20	32.389	20.467	36.253	16.603
Mar-20	16.603	15.853	0.000	32.456

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

196

Brief Summary of Oily cotton waste generation & its use From April 19-March 2020

NAME OF ITEM :- Oily Cotton Waste

S. N.	Month	Quantity of Generate (MT)	Reuse Quantity (MT)	Quantity of Sale/Dispose (MT)	Name of TSDF Site
Opening balance- 0.20 MT					
1	Apr-19	0.190	0	0.000	M/s Saurashtra Enviro Project Pvt. Ltd. Located at Vill. Juna Katariya Taluka: Bhachau, Dist.: Kutch
2	May-19	0.210	0	0.000	
3	Jun-19	0.195	0	0.000	
4	Jul-19	0.150	0	0.310	
5	Aug-19	0.160	0	0.000	
6	Sep-19	0.310	0	0.000	
7	Oct-19	0.220	0	0.000	
8	Nov-19	0.180	0	0.000	
9	Dec-19	0.210	0	0.000	
10	Jan-20	0.190	0	0.000	
11	Feb-20	0.200	0	0.000	
12	Mar-20	0.100	0	0.000	
Total		2.315	0	0.310	
Opening balance		2.515			
Present Stock		2.205			

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

197

Brief Summary of Used Oil generation & its use From April 19-March 2020

NAME OF ITEM:- Used Oil Waste

S. N.	Month	Quantity of generate (KL)	Reuse Quantity (KL)	Name of TSDF Site
1	Apr-19	0.036	0.031	M/s Saurashtra Enviro Project Pvt. Ltd. Located at Vill. Juna Katariya Taluka: Bhachau, Dist: Kutch
2	May-19	0.044	0.042	
3	Jun-19	0.06	0.058	
4	Jul-19	0.052	0.052	
5	Aug-19	0.059	0.059	
6	Sep-19	0.057	0.057	
7	Oct-19	0.046	0.041	
8	Nov-19	0.045	0.042	
9	Dec-19	0.041	0.036	
10	Jan-20	0.089	0.089	
11	Feb-20	0.076	0.076	
12	Mar-20	0.053	0.065	
	Total	0.658	0.648	
Previous Balance		7.513		
Total balance		8.171		
Closing Stock		7.523		

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

198

**Brief Summary of Epoxy Coating Powder waste generation & its use From April 19-
March 2020**

NAME OF ITEM :- Epoxy Coating Powder

S. N.	Month	Quantity of generate kg	Reuse Quantity (MT)	Send To TSDF	Name of TSDF Site
1	Apr-19	0.22	0	0	M/s Saurashtra Enviro Project Pvt. Ltd. Located at vill. Juna Katariya Taluka: Bhachau, Dist: Kutch
2	May-19	0.16	0	0	
3	Jun-19	0.16	0	0	
4	Jul-19	0.12	0	0	
5	Aug-19	0.14	0	0	
6	Sep-19	0.11	0	0	
7	Oct-19	0.08	0	1.12	
8	Nov-19	0.1	0	0	
9	Dec-19	0.09	0	0	
10	Jan-20	0.13	0	0	
11	Feb-20	0.09	0	0	
12	Mar-20	0.04	0	0	
Total		1.435	0	1.12	
Opening balance		1.77			
Total balance		3.205			
Total Closing Balance		2.085			

Brief Summary of APCD generation & its use From April 19-March 2020

NAME OF ITEM :- APCD Dust

S. N.	Month	Quantity of generate (MT)	Reuse Quantity (MT)	Quantity of sale (MT)	Name of Authorized Recycler
1	Apr-19	20.30	0	20.30	Process dust 371.451 MT generated and reuse 0 MT and 339.151 MT send to recycler. After total balance is 32.3 MT.
2	May-19	42.08	0	42.08	
3	Jun-19	33.27	0	33.27	
4	Jul-19	48.22	0	48.22	
5	Aug-19	23.331	0	23.33	
6	Sep-19	23.33	0	23.33	
7	Oct-19	29.05	0	29.05	
8	Nov-19	20.36	0	17.66	
9	Dec-19	22.45	0	22.45	
10	Jan-20	10.21	0	0.00	
11	Feb-20	15.63	0	40.56	
12	Mar-20	38.90	0	38.90	
	Total	327.131	0	339.151	
Opening balance		44.32			
Total balance		371.451			
Total Closing Balance		32.300			

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

200

**Brief Summary of Drum /Barrels Waste Generation & it's use
From April 19-March 2020**

NAME OF ITEM :-Drum /Barrels Waste

Sr. No.	Month	Quantity of Generate (Nos.)	Reuse Quantity (Nos.)	Quantity of Sale (Nos.)	Name of Authorized Recycler
1	Apr-19	205	0	203	Drum/Barrels Waste Generated and send to approved vender
2	May-19	220	0	217	
3	Jun-19	270	0	268	
4	Jul-19	100	0	93	
5	Aug-19	200	0	194	
6	Sep-19	70	0	79	
7	Oct-19	200	0	197	
8	Nov-19	250	0	148	
9	Dec-19	290	0	281	
10	Jan-20	500	0	481	
11	Feb-20	530	0	537	
12	Mar-20	130	0	135	
Total		2965	0	2833	
Previous stock		0			
Present		132 Nos.			

Annexure-15

Details of Accidents

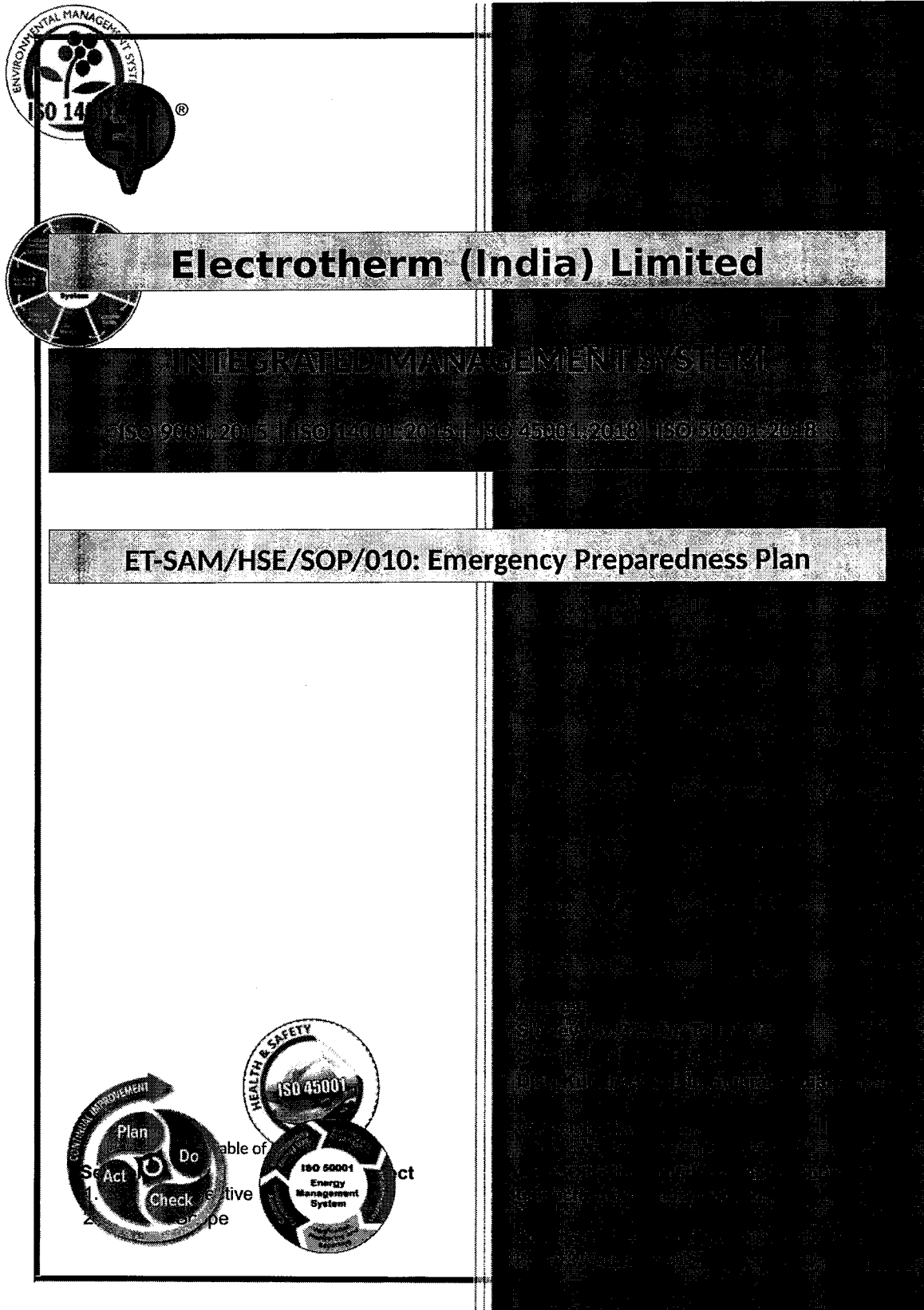
Details of Accidents in the Factory and Remedial Measures Taken

Month	Nos. of Accidents	Remedial Measures
12 th January 2020	01	1. We have taken action to install of Auto Pneumatic actuator operating valve with manual valve operation, 2. Installed the Online air Respirator system during CO Gas operation/Opening the U-Seal. And also to work permit system required, another person will present during CO Gas U Seal operation. 3. The Visual SOP fixed at the Location.
TOTAL	01	

Note: We have submitted the Form 5 (Accident Reporting) to GPCB on dated 22.01.2020 as per Consent Condition after Remedial Measures taken.

Annexure-16

Details of Disaster Management Plan & On-Site/Off-Site Emergency Plan



	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 1 of 23

3.	Abbreviations	2
4.	Responsibilities	3
5.	Procedure	3
6.	References	11
7.	Standard References	11
8.	Revision History	11
9.	Authorization Note	11

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 2 of 23

1 Objective

The purpose of this procedure is to outline how Electrotherm (India) Limited prepares

- To identify the potential for emergency situations
- To respond to such emergency situations
- To prevent or mitigate associated adverse OH&S and environmental impact consequences.

2 Scope

This procedure applies to all departments, activities, products and services within the plant.

3 Abbreviations

3.1 IMS: Integrated management System

3.2 OERP: Onsite Emergency response plan.

4 Responsibilities

- 1.1 Plant Head
- 1.2 Managers and Supervisors
- 1.3 HSE Officer
- 1.4 Departmental Supervisors
- 1.5 ALL Operators/ Workers

5 Procedure

5.1 IMS Representative assures that all potential incidents and emergencies likely to occur at the facility are identified in the Plant level Emergency Plans. The Emergency Action Plan has been established, implemented and maintained to identify the potential for emergency situations and response to such emergency situations. Electrotherm (India) Limited response to actual emergency situations and prevent or mitigate associated adverse environmental, health and safety consequences.

These may arise from one of the followings:

1. Electrical Accidents
2. Personal Injury
3. Fire/ Explosion
4. Gas Cylinder Fire/ Explosion
5. CO Gas Leakages
6. Heavy Spillage of Chemicals/ oil. (100 Liters or more)
7. Hot metal spillage
8. Induction furnace puncture /blast (Explosion)
9. Turbine
10. Boiler

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 3 of 23

11. Ladle puncture
12. EOT crane failure
13. Miss rolled
14. Coal Fire
15. Snake Bite
16. Natural Calamities: Heavy rains, Earthquake etc

5.2 PLANT HEAD has identified the methods to respond to, mitigate and prevent incidents and emergencies. These are outlined in the Electrotherm (India) Limited Emergency Action Plan. The support from response and mitigation as per the Organization Level Onsite Emergency Response Plan., which is controlled by HSE Department. Identified emergency prevention and mitigation action are as below:

6 Activity / Title: Prevention & Mitigation of Electrical Accidents			
Significant Aspect / Emergency :- Electrical Accidents			
Objectives :- Prevention & Mitigation of Electrical Accidents			
Effective Locations: All Plants			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Before starting the work, isolate the electrical supply	--	Maintenance
2	Confirm the proper earthing.	--	Maintenance
3	Use proper and safety equipments or instruments with proper insulation	--	Maintenance
4	Ensure that the safety instructions are being followed while working.	--	Maintenance
Mitigation			
1	In case of electrical accident, immediately disconnect the electrical supply.	--	Concerned Dept
2	Take the injured person away from the supply by using non-conductive.	--	Concerned Dept
3	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Concerned Dept/Safety/Security dept

7 Activity / Title : Prevention & Mitigation of Personal Injury			
Significant Aspect / Emergency :- Personal Injury			
Objectives : Prevention & Mitigation of Personal Injury			
Effective Locations: All Plants			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 4 of 23

2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tackels as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator
3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmentally critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

8 Activity / Title: Prevention & Mitigation of Fire

Significant Aspect / Emergency :- Fire

Objectives : Prevention & Mitigation of Fire

Effective Locations: All Plants

Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1.	Do not store inflammable material together like oil, diesel, oxy-acetelene gases, etc.	--	All

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 5 of 23

2.	Position the Fire Extinguishers, Sand Buckets and Fire Hydrants easily accessible at specified locations of probable fire hazards.	Resource Depletion	All
3.	Train the personnel for effective fire fighting.	--	HSE
4.	Switch off electrical equipments immediately if sparking/short circuiting is observed.	--	All
5.	Store oxygen and acetylene cylinders separately and vertically duly secured by chain.	=	All
6.	Any leakages in the pipes of flammable material should be repaired immediately.	Air Pollution/Fire	Maintenance
7.	Do not use broken gas regulators on the shopfloor.	--	Operation & maintenance
8.	Use standard equipments, such as Gas Cylinders, Oxy-Acetylene Pipes, Regulators, Electrical Equipments/Tools, welding machine, gas cutting machine etc. to avoid accidental puncture.	--	Operation & Maintenance
9.	Use Flash back arrester on gas cutting sets to prevent back fire.	Fire Explosion or	All
10.	Do not allow smoking near inflammable material storage.	--	Operation & Maintenance
11.	Use all safety aprons, clothing, hand gloves, safety shoes, goggles, etc. while welding, gas cutting and grinding.	--	Operation & Maintenance
12.	Display emergency phone numbers in the Security Cabin.	=	HSE

Mitigation

1.	Use fire extinguishers meant only for the type of fire.	Resource Depletion	All
2.	Immediately switch off and isolate the electrical equipments / inflammable material near the area of fire.	--	All
3.	Do not use water for fire due electrical short circuiting.	--	All
4.	Inform immediately Fire Brigade Department, if fire is out of control.	--	Security Supervisor/All
5.	In case of personal injury, give first-aid treatment and call ambulance / doctor if required.	Personal Injury	Dept Head/HSE
6.	Block all the drains to stock contaminated water flowing in the drainage system, collect the water & sent it to STP as well as segregate all the left garbage due to fire & dispose it of as per procedure.	Land Contamination, Air & , Water Pollution	Operation & Maintenance/HS E

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 6 of 23

9 Activity / Title: Prevention & Mitigation of Gas Cylinder Fire/ Explosion			
Significant Aspect / Emergency :- Gas Cylinder Fire/ Explosion			
Objectives : Prevention & Mitigation of Gas Cylinder Fire/ Explosion			
Effective Locations: All Plants			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1.	LEL % based gas detectors provided in manifold area.	Gas Leakages	Gas Leakages
2.	Cylinders are checked for leakages during delivery of cylinders in company.	--	--
3.	Well ventilated and and FLP type area	--	--
4.	Store as per PESO requirements	--	--
5.	Only day time handling	--	--
6.	Lock and restricted area	Air Pollution/Fire	Air Pollution/Fire
7.	Water monitores and fire hydrenet system provided in this area.	--	--
8.	Sprinkler shall be provided in this area.	--	--
12.	Display emergency information's near Gas bank area.	--	--
Mitigation			
1.	Raise fire siren or shouting Fire...Fire...Fire...	--	First Observer
2.	Evacuation the area immediatly.	--	Non essential workers
3.	Inform the area in charge	--	Department employees
4.	In Incident controller in details	--	Department employees
	Off elecreial supply in fire pron area	--	Maintenance In-charge
5.	Call fire department immediately and help them for fire fighting.	--	Employees & Incident Controller
6.	Try to control situation at department level with available resources with full PPEs	--	Fire Fighting Team
7.	If it is found uncontrolled condition by department level inform to SITE CONTROLLER for on site emergency situation	--	Incident Controller
8.	Declare on site emergency if required.	--	Site Controller

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 7 of 23

9.	Start fire hydrant system and spray water on fire		Fire Team
10	Remove un involved cylinders from the site if possible without any risk	--	Rescue Team
11.	In fire found uncontrolled condition call fire brigade and manual aider for help.	--	Site Controller
12.	Incase of BLEVE fire, immediate complete plant evacuation with safe emergency shut down equipments	--	Site Controller and all Dept. Head
13.	Ensure search and rescue and casualties receive attention.	--	Rescue Team
14.	Administer first aid to the victim	--	First Aid Team
15.	Make arrangement to send injured persons to Hospital and inform Victim Family	--	Admin Team
16.	If off site emergency situation occur – inform to following agencies. Request for mutual aiders, local authorities like DISH office, Collectorate office, Disaster management cell, Police, Fire Brigade, near by hospital, local GPCB office.	--	Site Controller

10 Activity / Title: Prevention & Mitigation of CO Gas Leakages			
Significant Aspect / Emergency :- Fire, Explosions & Inhalation			
Objectives : Prevention & Mitigation of Fire			
Effective Locations: DIP, BF & Sinter			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1.	LEL % based gas detectors provided in manifold area.	Gas Leakages	All
2.	Cylinders are checked for leakages during delivery of cylinders in company.	--	All
3.	Well ventilated and and FLP type area	--	HSE
4.	Store as per PESO requirements	--	All
5.	Only day time handling	--	All
6.	Lock and restricted area	Air Pollution/Fire	Maintenance
7.	Water monitores and fire hydrenet system provided in this area.	--	Operation & maintenance
8.	Sprinkler shall be provided in this area.	--	Operation & Maintenance
12.	Display emergency information's near Gas bank area.	--	HSE

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 8 of 23

Mitigation			
1.	Gas detectors in store will give alarm immediately.	--	First Observer
2.	Raised alarm immediately for warning the people if large spillage observed.	--	First Observer
3.	DO not allow to enter in store room.	--	Incident Controller
4.	Open all doors and windows in this area.	--	Fire Team
5.	Do not touch any electrical switches in spillage area.	--	All Worker
6.	Stop all hot work in this area.	--	Incident Controller and Dept. Team
7.	Call fire and safety department	--	Incident Controller
8.	Corden the area	--	Security Team
9.	Evacuation non essential persons from the affecte area immediatly	--	Non-Essential Workers
10.	Inform the area incharge.	--	Incident Controller
11.	Try to control situation at department level with available resources with full PPE's	--	Incident Controller
12.	Identify the leakage cylinder	Resource Depletion	Incident Controller
13.	Segregate leakage cylinder from the area and place in a well ventilated and open airarea.	--	Fire Team
14.	Inform the site main controller in details	--	Incident Controller
15.	Take decision to declare onsite emergency	--	
16.	Inform LPG cylinder supplier for replace o-ring.		Purchase In-charge

11 Activity / Title: Spillage/ Leakage of Chemicals/ Oil(100 Liters or more)			
Significant Aspect / Emergency :- Spillage and leakage of Chemicals/ Oil, Diesel			
Objectives : Prevention and Mitigation			
Effective Locations: CPP(DM)			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1.	Use proper method to transfer the oil	Fire and land contamination	Operation
2	Always refer MSDS before handling & use	Fire and land contamination	Operation

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 9 of 23

3	Don't use system for transfer if not aware about the same.	Fire and land contamination	Operation
4	Spillage and leakage should correct immediately	Fire and land contamination	Operation and Maintenance
Mitigation			
1.	Store at place away from production and other areas.	Fire	Operation
2.	Ensure that storage location is away from source of ignition, fire & high temp & heat.	--	Operation
3.	Ensure that all tanks are identified with the capacity.	--	Operation
4.	Restict the unauthorized entry at storage area		Operation
5	Smoking is not allowed near the storage area	--	All

12 Activity / Title: Prevention & Mitigation of Hot Metal Spillage			
Significant Aspect / Emergency :- Fire, Massive Hot burn & Personal casualties			
Objectives : Prevention & Mitigation of Hot metal Spillage			
Effective Locations: SMS, DIP, BF			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tacksels as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 10 of 23

3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

13 Activity / Title: Prevention & Mitigation of Induction Furnace Puncture / blast

Significant Aspect / Emergency :- Fire, Personal casualties & Property Damage

Objectives : Prevention & Mitigation of Induction Furnace Puncture / Blast

Effective Locations: SMS, DIP

Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tacks as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator

internal

 Rev. No: 00	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010	Page 11 of 23

3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

14 Activity / Title: Prevention & Mitigation of Turbine Failure

Significant Aspect / Emergency :- Property Damage & Personal Casualties

Objectives : Prevention & Mitigation of Turbine Failure

Effective Locations: CPP

Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tackels as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010	Page 12 of 23

3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

15 Activity / Title: Prevention & Mitigation of Boiler Puncture			
Significant Aspect/Emergency :- Fire, Property Damage & Personal Casualties			
Objectives : Prevention & Mitigation of Boiler Puncture			
Effective Locations: CPP			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tacks as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 13 of 23

3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

16 Activity / Title: Prevention & Mitigation of Ladle Puncture

Significant Aspect/Emergency :- Fire, Property Damage & Personal Casualties

Objectives : Prevention & Mitigation of Ladle Puncture

Effective Locations: SMS, DIP, BF

Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tacks as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator

Internal

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

216

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 14 of 23

3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

17 Activity / Title: Prevention & Mitigation of EOT Crane Failure			
Significant Aspect/Emergency :- Property Damage & Personal Casualties			
Objectives : Prevention & Mitigation of EOT Crane Failure			
Effective Locations: SMS, DIP, BF			
Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tackels as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			
1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 15 of 23

2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator
3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

18 Activity / Title: Prevention & Mitigation of Miss Rolled

Significant Aspect/Emergency:-Product Damage, Property Damage & Personal Casualties

Objectives : Prevention & Mitigation of EOT Crane Failure

Effective Locations: R.Mill-1 & 2

Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tackels as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 16 of 23

1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator
3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

19 Activity / Title: Prevention & Mitigation of Coal Fire

Significant Aspect/Emergency:-Fire, Property Damage & Personal Casualties

Objectives : Prevention & Mitigation of Coal Fire

Effective Locations: CPP & SIP

Sr. No.	Control Points	Impacts	Responsibility
Prevention			
1	Observe all safety instructions displayed on the shopfloor / work instructions.	--	All
2	Do not lift any load manually which is beyond the capacity of single person or group of persons.	--	All
3	All electrical repairs or electrical installations shall be carried out by licenced electrician / supervisor or under his supervision.	--	Maintenance
4	Use safety equipments/Lifting tools & tacks as per the job and as instructed by the supervisor to avoid accident.	--	All
5	Use safety belts while working at heights.	--	All
6	Warning boards shall be displayed while maintaining the machine or equipment to avoid accidental starting of the machine or equipment.	--	Maintenance
Mitigation			

Internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 17 of 23

1	Take the injured person away from the supply by using non-conductive material and insulating yourself from the live wire.	--	Concerned dept
2	If the person is injured seriously, call the doctor immediately. Meanwhile, give first aid as per the standard first aid practice.	--	Security Supervisor & Co-ordinator
3	In case of accidents due to material handling or mechanical equipment, immediately give first-aid treatment according to severeness of injury.	--	All/HSE
4	Fill up the accident form.	--	Shop Supervisor
5	If the injury is serious, call the doctor or shift the patient to the hospital.	--	Concerned dept/HSE/Security
6	If the injury is due to Environmental critical, Chemicals such as over exposure to acid fumes, splashing of acid over the body or similar emergency follow the respective Emergency Procedure for mitigation of Environmental damage.	--	All

1. Snake Bite

Poisonous snakebites are medical emergencies. It usually takes several hours for snake venom to kill. The right ant venom can save a victim's life.

A. Snakebites can cause severe local tissue damage and often require follow-up care.

Symptoms:

Bloody wound discharge
Blurred vision
Burning
Convulsions
Diarrhea
Dizziness
Excessive sweating
Fainting
Fang marks in the skin
Fever
Increased thirst
Localized tissue death
Loss of muscle coordination
Nausea and vomiting

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 18 of 23

Numbness and tingling

Rapid pulse

Severe localized pain

Skin discoloration

Swelling at the site of the bite

Weakness

DO NOT:

- o DO NOT allow the victim to exercise. If necessary, carry the victim to safety.
- o DO NOT apply a tourniquet.
- o DO NOT apply cold compresses to snakebite.
- o DO NOT cut into snakebite.
- o DO NOT give the victim stimulants or pain medications unless instructed to do so by a doctor.
- o DO NOT give the victim anything by mouth.
- o DO NOT raise the site of the bite above the level of the victim's heart.
- o DO NOT try to suction the venom--doing so may cause more harm than good.

Immediately following a snake bite:

Try to safely and quickly identify the species of snake if practical. Move victim to safety. Have one-person take firm command of the situation very early to improve coordination and decision making processes. The victim's condition is assisted with an observation that calm and competent assistance is being firmly applied. There will be no time for shy or timid behavior! Action will be crucial! Proceed with no delay to use judgment calls on all of the below suggested techniques.

Remove any jewelry or tight fitting clothing. Quickly tie a light-restricting band both above and below the bite area a few inches away from puncture / bite marks.

Without cutting, apply strong suction, preferably within seconds of the bite directly on the main or deepest puncture/bite marks. This can be accomplished with the mouth or a commercial bite kit suction device. Time is critical here as any venom present will become destructive very quickly!

Rapidly apply antiseptic cleanser to the entire area and place cold compress as closely as possible without interfering with suction process.

Continue strong suction and alternate the location of compress to avoid injury from severe cold.

Check constriction bands periodically as swelling may occur and loosen as appropriate.

Monitor for symptoms of shock and be prepared to administer appropriate treatment. At any signs of major stress or unusual/unexplained discomfort, check for need to apply other first aid techniques - elevate bitten extremity, elevate legs from lying down position, keep warm, immobilize, etc. Do not administer alcohol or cause additional stress to victim. Avoid food or liquid intake.

Keep victim warm and immobilize as practical. Movement to proper treatment facility is more crucial than maintaining immobile status. Maintain above treatment functions throughout.

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 19 of 23

Transport safely at the earliest possible time to competent medical service. Ideally, all of above steps can be administered concurrently with transport phase. Keep victim as comfortable as possible and reassure that survival is not in question. Rapid response reduces damage levels.

If possible and *voluntarily chosen*, administer electroshock to bite area in several one second bursts in a small circle around bite. Repeat this at 10-15 minute intervals getting slightly farther from bite area seeking to follow course of venom flow. Take care to utilize DC current at proper levels and prepare in advance to administer this technique.

If practical, dispatch snake and take along for any identification or testing needs. Primary purpose of this first aid is to slow down or reduce invasion of the venom, to protect the victim from further side effect trauma, to prepare victim for later medical procedures such that complications may be minimized, and generally to get victim to such treatment as quickly and safely as practical.

Stand by for back up assistance or side task assignments like contacting relatives, protecting scene materials, providing useful information of incident facts, describe first aid administered, etc.

Be confident that all which could have been done was applied to assure as successful an outcome as possible given that a venomous bite is difficult to control or establish a completely accurate prognosis. Remember, early treatment is better treatment when such a bite occurs!

Prevention & Mitigation:

Even though most snakes are not poisonous, avoid picking up or playing with any snake unless you have been properly trained.

When hiking in an area known to have snakes, wear long pants and boots if possible.

Do not thrust hands or feet into any areas if you cannot see into the area.

Tap ahead of you with walking stick before entering an area with an obscured view of your feet. Snakes will attempt to avoid you if given adequate warning.

2. Natural Calamities:

Effective Locations: All Plants

Prevention & Mitigation Flood, Heavy rains, Storm

- In such cases Safety, Security and Maintenance teams needs to assemble at one place. (at main Gate)
- Maintenance Head ensure dewatering pumps are ready and in safe condition.
- Maintenance should ensure all panel rooms and boxes, junction box etc are free from water. and disconnect power immediacy until emergency over.

Prevention & Mitigation Earthquake

- Emergency Siren activate immediately
- Security staff inform key members via mobile/Intercom
- Remain Calm. Sound usually precedes earthquake motion by a split second. If you have developed the correct earthquake responses in your mind before a quake, this split sec-

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 20 of 23

and is enough time to activate your automatic reactions. If you stay calm, you will be better able to assess your situation. The rolling and roaring may terrify you, but unless something falls on you, the sensations probably won't hurt you. Try talking yourself through the violent motion phase. This will release stress and others may take courage and follow your reasoned restraint. Think through the consequences of any action you plan to take.

- If you are indoors, stay there. If you are in danger:
 - Get under a sturdy table, desk or bed.
 - Brace yourself in an inside corner away from windows.
 - Move to an inner wall or corridor. (A door frame or the structural frame or inner core of the building are its strongest points and least likely to collapse. They will also break the impact of any falling objects).
 - In an apartment building the safest place is by the central reinforced core of the building, which is usually located by the elevator well.
 - Choose shelter which will provide an airspace if it collapses. If your furniture shelter moves, stay under it and follow it around the apartment.
 - Watch for falling objects - plaster, bricks, light fixtures, pots and pans, etc.
 - Stay away from tall shelves, china cabinets and other furniture, which might slide or topple over.
 - Stay away from windows, sliding glass doors, mirrors.
 - Grab anything handy (blanket, pillow, tablecloth, newspapers, box, etc.) to shield your head and face from falling debris and splinting glass.
 - Don't be alarmed if the fire alarm or sprinklers go off.
- Do Not Rush Outside. Stay on the same floor that you are on. Stairways may be broken and exits jammed with people. Do not use elevators as the power for elevators may go out and leave you trapped. The greatest danger from falling debris is just outside doorways and close to outer walls. If for safety reasons you must leave the building, choose your exits as carefully as possible.
- If you are outside, stay there. Move away from the building, garage, walls, power poles and lampposts. Electric power lines are a serious hazard - stay away from fallen lines. If possible, proceed cautiously to an open area.

Within the First Several Minutes:

- Remain Calm. Don't Panic. Try to calm and reassure others. Stop and take time to think. Wait until all motion has stopped. Do not run down stairs or outdoors. Be prepared for additional shockwaves.
- Do not light matches, cigarettes or turn on electrical switches. Flashlights are one of the best light sources after a damaging earthquake. Proceed with extreme caution.
- Protect hands and feet from broken glass or debris. Keep head and face protected (hard hat, blanket, tablecloth, etc.)
- Make a quick check for injuries or trapped people. Provide emergency first aid if needed. Do not try to move seriously injured persons unless they are in immediate danger from further injury.
- Turn off all appliances and office machines. Extinguish all open flames. Check power lines and cords. If problems exist in electrical lines or gas lines the mains should be shut off.

internal

	Electrotherm (India) Limited		
	Standard Operating Procedure		
	Title:- Procedure for Emergency Preparedness Plan		
	Rev. No: 00	Issue Date: 01.04.2019	ET-SAM/HSE/SOP/010 Page 21 of 23

It may be necessary to draw a moderate amount of cold water in bathtubs and sinks and other containers, in case service should be disrupted.

Post emergency evaluation

After the emergency has ended, the Disaster Control Team members meet to evaluate the overall performance in responding to the situation.

The review is done to determine:

- Effectiveness of the emergency response.
- Plant personnel responsiveness.
- Areas of improvement

Need of revising sections of the emergency plan.

20 References

Sr. no.	Doc Number	Description
01	ET-SAM/HSE/OEP	Onsite Emergency Response Plan
02	ET-SAM/HSE/FR/001	Mock Drill Plan
03	ET-SAM/HSE/FR/002	Mock Drill Observation Report
04	ET-SAM/HSE/FR/003	Mock Drill Report

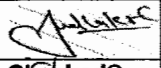
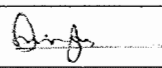
21 Standard References

Sr. No	Standards / Ref. Document	Clauses/ Chapters / Process Areas
02	ISO 14001 EMS	8.2 – Emergency Preparedness
03	ISO 45001 OHSMS	8.2– Emergency Preparedness

22 Revision History

Revision	Date of Release	Description of changes
00	01.04.2019	Initial Revision.

23 Authorization Note

Action By	Name	Designation	Signature	Date
	Sudhakar Singh	Sr. Officer		01.04.2019
Checked By:	Bhagwat S. Sharma	AGM		01.04.2019
Approved By:	R.P. Singh	AVP		01.04.2019

Internal

Annexure-17

Analysis report of the Noise level during Day

SR. NO.	LOCATION	1 st Monitoring Dates: 24 th & 25 th Sept'19	2 nd Monitoring Dates: 14 th & 15 th Nov'19	3 rd Monitoring Dates: 22 nd & 23 rd Jan'20	Day Time GPCB Limits in dB(A)
		Results dB(A)	Results dB(A)	Results dB(A)	75.00
1.	Near Main Gate	65.4	66.1	63.8	
2.	Near Material Gate Area	67.5	69.3	66.7	
3.	DIP Plant	75.1	72.1	70.8	
4.	Near Admin Office	58.2	60.6	61.6	
5.	SMS Plant	73.4	71.5	69.7	
6.	Rolling Mill	68.4	66.1	67.8	
7.	CPP Plant	72.9	70.1	69.8	
8.	ETP Plant	64.9	65.2	66.3	
9.	Canteen Area	62.5	63.4	60.8	
10.	Plant Boundary	53.8	51.3	50.7	

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

225

Annexure-18
Compliance Report of CC&A

Compliance Report.

Ref: Consent order No. AWH-77789 dated 31.03.2016 & Authorization
Number: H - 98296, date of issue 29.12.2018 valid up to 22/03/2021.

Sr. No.	Particulars	Compliance / Action Taken																																													
1.	Consent Order No. AWH - 77789 date of Issue: 31.03.2016. Earlier consent order No. AWH - 33396 issued vide letter number PC / AAC / - KUTCH - 294 (4) ID 17826 / 64571 dated 02 / 12 / 2010 having validity up to 26 /07/2011 shall be read as merged here with this order.	Noted.																																													
2.	The consent order No.: AWH - 77789 shall be valid up to 22/03/2021 for use of outlet for the discharge of trade effluent and emission due to operation of industrial plant for manufacture of the following items / products at Plot No. 325, Village : Samakhiyali , Ta : Bhachau, Dist : Kutch East-370 140 .	Noted.																																													
	<table> <tr> <th>Sr. No.</th><th>Products</th><th>Production Capacity (MTPM)</th></tr> <tr> <td></td><td></td><td>Existing</td></tr> <tr> <td>1.</td><td>Sponge Iron</td><td>24,000</td></tr> <tr> <td>2.</td><td>D. I. Pipes</td><td>16, 000</td></tr> <tr> <td>3.</td><td>Captive Power</td><td>WHRB 21 MWH</td></tr> <tr> <td></td><td></td><td>FBC 24 MWH</td></tr> <tr> <td>4.</td><td>Pig Iron (Blast Furnace)</td><td>23,100</td></tr> <tr> <td>5.</td><td>Sinter Plant</td><td>32,400</td></tr> <tr> <td>6.</td><td>Steel Rolling Mill (TMT Plant)</td><td>52166</td></tr> <tr> <td>7.</td><td>MS Billets/ Bars</td><td></td></tr> <tr> <td>8.</td><td>Stainless steel billets</td><td>25,000</td></tr> <tr> <td>9.</td><td>Alloy Nickel</td><td>416</td></tr> <tr> <td>10.</td><td>Induction Furnaces</td><td>17 sets / Month</td></tr> <tr> <td>11.</td><td>Electric cycle and Vehicle</td><td>All model(Yo bike) 1500 sets/month</td></tr> <tr> <td></td><td></td><td>E- Rickshaw & E-Winner 650 Sets/month</td></tr> </table>	Sr. No.	Products	Production Capacity (MTPM)			Existing	1.	Sponge Iron	24,000	2.	D. I. Pipes	16, 000	3.	Captive Power	WHRB 21 MWH			FBC 24 MWH	4.	Pig Iron (Blast Furnace)	23,100	5.	Sinter Plant	32,400	6.	Steel Rolling Mill (TMT Plant)	52166	7.	MS Billets/ Bars		8.	Stainless steel billets	25,000	9.	Alloy Nickel	416	10.	Induction Furnaces	17 sets / Month	11.	Electric cycle and Vehicle	All model(Yo bike) 1500 sets/month			E- Rickshaw & E-Winner 650 Sets/month	
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→	SPECIFIC CONDITION :																																														
1.	Applicant shall strictly comply with all the conditions stipulated by MOEF in the order of Environment Clearance issued vide letter No. F. No. : J/11011/503/2006-IA II (I) Dated : 20/02/2008 & vide No. F. No. J/11011/899/2008 & vide letter No. F. No.: J/11011/899/2008-IA II (I) dtd. 27/01/2010.	Compliance Assured.																																													
2.	No ground water shall be used for the project coming under Dark zone without permission of competent authority.	Complied.																																													
3.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants should be implemented .	Noted.																																													
1.	CONDITIONS UNDER THE WATER ACT :																																														
1.1	The generation and discharge of industrial effluent from the manufacturing process and other ancillary industrial operation shall not exceed 234 m ³ /Day.	Compliance Assured.																																													

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

226

1.2	The quantity of the domestic waste water (sewage) shall not exceed <u>30 m³/Day</u> .	Compliance Assured.																																																								
1.3	The quality of the industrial effluent shall confirm to the following standard.	Compliance Assured.																																																								
1.4	No wastewater shall be discharged from Sponge iron plant, Sinter plant, WHRB power plant, TMT bar	Complied.																																																								
1.5	The unit shall install meters for measuring category wise consumption of water. (Category as given in Water Cass Act - 1977 schedule - II)	Compliance Assured.																																																								
1.6	TRADE EFFLUENT :																																																									
1.6.1	The applicant shall provide adequate effluent treatment in order to achieve the quality of the treated effluent as per GPCB norms mentioned in Column No-2.	Compliance Assured.																																																								
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1.6	The treated effluent conforming to the above standards shall be utilized for gardening of sprinkled in ash disposal area or used for cooling in sponge iron plant within the premises of the industry.	Complied.																																																								
1.7	The Quality of the Sewage shall confirm to the following standards (As per GPCB norms, whichever is applicable.)	Complied.																																																								
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CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

227

1.8	The Unit shall install meters for measuring category wise (Category as given in Water-Cess Act 1977 schedule II) consumption of water.							Complied.
2.	CONDITION UNDER AIR ACT 1981 :							
2.1	The applicant shall install & operate air pollution control system in order to achieve flue gas emission norms as prescribed below. (As per CPCB Norms, whichever is applicable)							Complied.
	(The Existing flue gas emission through stacks attached to boiler/furnace / heater /DG Set).							
	Sr. No.	Stack attached to	Stack height	Air pollution control device	Fuel used and its Quantity	Parameter	Permissible limit.	Complied.
	1.	Reheating furnace	30 m	Bag filter	Furnace oil 1,000 liter/day	PM SO2 NOx	100 mg/Nm ³ 100 ppm 50 ppm	
	2.	Quantifier	25 m	---	---			
	3.	AFBC Boiler 1 & 2 (Power Plant)	90 m	ESP	Imported coal : 25MT/day Lignite: 550 MT/day Char coal : 144 MT/day Waste hear : 85,000 m3/day			
	4.	D.G. set	12 m	---	Diesel : 1800 Liter/day			
	5	Rotary Kiln No.1 (WHRB)	65 m	ESP	3.0 MT/hr			
	6	Boiler	30 m	Dust collector	Coal 03 MT / day			
	7	Blast furnace	30	Bag Filter with Gas Cleaning Plant	Coke			
	8	Annealing furnace	30 m	---	FO: 2700 Litre / hour			
	9	D.G Set 1000 KVA	12 m	---	Diesel: 120 Litre/Day			
	10	Induction (melting furnace) 1	30 m	Cyclone separator	Electricity			
	11	Induction furnace 02	30 m	Cyclone separator and bag filter	Electricity	PM	50 mg/Nm ³	
	12.	Rotary Kiln attached (2 nos.)	50 m	ESP	Coal 720 Mt/Day Waste Heat 643,712 Kcal/hr		100 mg/Nm ³ 100 ppm 50 ppm	

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

228

13	Annealing Furnace 2 Nos.	30	---				
14	Blast Furnace 02 Nos.	50	Bag Filters/Wet Cleaning System	Coke: 95 MT/Day			
15	Sinter Stack 02 Nos.	30	ESP	Coke Breeze 108 MT/Day			
16	Reheating Furnace	30	Multi cyclone	Furnace Oil : 1000 Liter/Day			
17	Organ Oxygen Decarbonization system AOD 02 Nos.	30	Fumes Extraction system separator and jet pulse Bag Filter system	Electricity			
18	Induction Furnace (02 Nos.)	30	Bag-Filter	Electricity		50 mg/Nm ³	
2.2	The process emission through various stacks/vent of reactors, process shall conform to the following standards : (As per GPCB Norms, whichever is applicable) (The Existing process emissions through various stacks / vent of restores, process, vessel)						
Sr No.	Stack attached to	Stack height	Air pollution control device	Parameter	Permissible limit	Complied.	
1.	Gas exits (Pilot burner stack	30 m	--	PM SO ₂ NOx	100 mg/Nm ³ 40 mg /Nm ³ 25 mg / Nm ³		
2.	Gas exits (Coal crusher)	30 m	Bag filter				
3.	Meg Convertor	16 m	Cyclone separator & Bag filter				
4.	Zinc coating	16 m	Cyclone separator & Bag filter				
5.	Barrel grinding and De dusting	16 m	Cyclone separator & Bag filter				
6.	Bitumen drying oven	30 m	--				
7.	Core cleaning section	16 m	Cyclone separator				
8.	Iron ore circuit (Crusher & Screen)	25 m	Cyclone separator & bag filter				



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

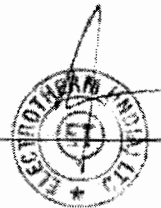
229

		9.	Stock house (Day bin)	15 m	Cyclone separator and bag filter					
		10.	Injection coal (Transfer house)	15 m	Cyclone separator and bag filter					
		11.	Production storage bunker (Production house)	15 m	Cyclone separator and bag filter					
		12.	Intermediate bin & product separation bin	25 m	Cyclone separator and bag filter					
		13	Product Storage Bunker (02 Nos.)	15 m	Cyclone separator and bag filter					
		14	Intermediate Bin/Product Separation Bin 02 Nos.	25 m	Cyclone separator and bag filter					
		15	Coal Injection 02 Nos.	15 m	Cyclone separator and bag filter					
		16	Day-bin/Stock House 02 Nos.	15 m	Cyclone separator and bag filter					
		17	Iron Ore Circuit (Crusher & Screen) 02 Nos.	25 m common stack	Cyclone separator and bag filter					
		18	Coal Circuit (Crusher & Screen) 02 Nos.							
		19	Magnesium Converter	16 m	Cyclone separator and bag filter					
		20	Zinc Coating	16 m	Cyclone separator and bag filter					
		21	Blast Furnace (Pilot Burner Stack 02 Nos.)	20 m	Cyclone separator and bag filter					
		22	Crusher Conveyor Belt transfer Stack 02 Nos.	15 m	Cyclone separator and bag filter					
										Complied.
2.3	Stack monitoring facilities like porthole, platform / ladder, etc. shall be provided with Stack / Chimney in order to facilitate sampling of gases being emitted into the Atmosphere.									Complied.



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

2.4	Vehicular Pollution due to Transportation of Raw Material and Finished Product shall be controlled. Proper arrangements shall also be made to control dust emission during loading and unloading of the Raw Material and Finished Product.	Complied.															
2.5	All internal Roads shall be black topped. The Roads shall be regularly cleaned with mechanical sweepers. A 3 Tier Avenue Plantation using native species shall be developed along the Roads. Facilities for Parking of Trucks carrying Raw Coal from the linked calamines shall be created within the unit.	Compliance Assured.															
2.6	Regular Cleaning & Wetting of the Ground within Premises.	Complied.															
2.7	Covered all Storage Area for Coal Handling.	Being Complied.															
2.8	Water Sprinkling systems (Mechanized & Moving) shall be installed in Plant Area.	Complied.															
2.9	Proper Arrangement shall be made to control Dust Emission during loading and unloading of the Raw Material and Finished Product.	Complied.															
2.10	All measures for the Control of Environmental Pollution shall be provided before commencing the Production.	Compliance Assured.															
2.11	Continuous Ambient Air Quality Monitoring Station shall be set - up in Steel Plant Area.	Compliance Assured.															
2.12	Continuous Stack Monitoring Facilities for all the Stacks and sufficient Air Pollution Control devices shall be provided to keep the emissions level below 100 mg / Nm ³ .	Compliance Assured.															
2.13	The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder.	Complied.															
<table border="1"> <thead> <tr> <th>Parameter</th><th>Time Weighted Average</th><th>Concentration in Ambient Air.</th></tr> </thead> <tbody> <tr> <td>Sulphur Dioxides (SO₂)</td><td>Annual 24 Hours.</td><td>50 80</td></tr> <tr> <td>Nitrogen Dioxides (NO₂)</td><td>Annual 24 Hours.</td><td>40 80</td></tr> <tr> <td>Particulate Matter (Size Less than 10 um)</td><td>Annual 24 Hours.</td><td>60 100</td></tr> <tr> <td>Particulate Matter (Size Less than 2.5 um)</td><td>Annual 24 Hours.</td><td>40 60</td></tr> </tbody> </table>			Parameter	Time Weighted Average	Concentration in Ambient Air.	Sulphur Dioxides (SO ₂)	Annual 24 Hours.	50 80	Nitrogen Dioxides (NO ₂)	Annual 24 Hours.	40 80	Particulate Matter (Size Less than 10 um)	Annual 24 Hours.	60 100	Particulate Matter (Size Less than 2.5 um)	Annual 24 Hours.	40 60
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2.14	The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.																
2.15	The level of Noise in ambient air within the premises of industrial unit shall not exceed following levels: Between 6 A.M. and 10 P.M. : 75 dB(A) Between 6 A.M. and 10 P.M. : 70 dB(A)																
4	Authorization for the [Management, Handling & Transboundary movement] of hazardous wastes form 2 (See rule 5 (4) Form for the grant of Authorization for occupier or operator handling hazardous waste rule, 2008 & 2016 & amended	Being Complied															
4.1	Authorization Number : H - 98296, date of issue 29.12.2018																
4.2	Authorization shall be Valid up to 22/03/2021.																



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

231

4.3	M/s Electrotherm (India) Ltd. (Sponge Iron & D. I. Pipe Plant) is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at plot No. 325, Village : Samakhiyali, Taluka: Bhachau, Dist: Kutch.				Noted
Sr. No	Type of Waste	Quantity	Schedule / Cat	Facility	
1	Used oil	7.31 KL.	I/5.1	Collection, storage, transportation, disposal by for lubrications of machines & remaining selling out to registered recycler / reprocessor.	
2	Process waste	675 MT	I/7.2	Collection, storage, transportation, disposal at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at : Survey No.: 415, 417, 418, Village: Juna - Kataria, Taluka: Bhachau, Dist.: Kutchh.	
3	Discarded Container.	24 Nos.	I/33.3	Collection, storage, transportation, disposal at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at: Survey No.: 415, 417, 418, Village: Juna - Kataria, Taluka: Bhachau, Dist.: Kutchh.	
4	Zinc Dust	108 MT	I-6.2	Collection, storage, transportation, disposal at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at: Survey No.: 415, 417, 418, Village: Juna - Kataria, Taluka: Bhachau, Dist.: Kutchh.	
5	Magnesium Dust	252 MT	I-6.2	Collection, storage, transportation, disposal at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at: Survey No.: 415, 417, 418, Village: Juna - Kataria, Taluka: Bhachau, Dist.: Kutchh.	
6	Tar Containing Waste	4.8 MT	I-11.3	Collection, storage, transportation, disposal at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at: Survey No.: 415, 417, 418, Village: Juna - Kataria, Taluka: Bhachau, Dist.: Kutchh.	
7	Epoxy Coating Powder	8.0 MT/Year	I-6.2	Collection, storage, transportation, disposal by for lubrications of machines & remaining selling out to registered recycler / reprocessor.	
8	Oily-Cotton Waste	20.0 MT/Year	I-5.2	Collection, storage, transportation, disposal at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at: Survey No.: 415, 417, 418, Village: Juna - Kataria, Taluka: Bhachau, Dist.: Kutchh.	
4.4	The authorization is granted to operate a facility for collection, storage, within factory premises, transportation and ultimate disposal of hazardous waste as per condition no 4.3 to the industry having valid CC&A of this board.				Complied
4.5	TERMS AND CONDITIONS OF AUTHORIZATION :				



a) The applicant shall comply with the provisions of the Environment (Protection) Act 1986 and rules made there under.	Compliance assured
b) The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.	Noted
c) The persons authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.	Noted
d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.	Noted
e) It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.	Noted
f) An application for the renewal of an authorization shall be made as laid down in rule 7.	Compliance Assured
g) Industry shall submit annual report within 15 days and subsequent by 31 st January every year.	Noted
h) Hazardous waste shall be disposed off in accordance with the haz. Waste (Management, Handling & Transboundary Movement) rules, 2008 and unit shall have to obtain authorization of this board for all applicable categories of waste.	Compliance assured
5. GENERAL CONDITION	
5.1 Any change in personnel, equipment or working condition as mentioned in the consent form/ order should immediately be intimated to this board.	Compliance Assured.
5.2 Applicant shall also comply with the general conditions given in annexure - I	Compliance Assured.
5.3 The waste generator shall be totally responsible for (i.e Collection, Storage, Transportation and ultimate disposal) of the wastes generated.	Compliance Assured.
5.4 Records of the waste generation, its management and annual return shall be submitted to GPCB in form - 4 by 31 st January of every year	Compliance Assured.
5.5 In case of any accident details of the same shall be submitted in form - 5 of GPCB	Compliance Assured.
5.6 As per "Public liability Insurance Act - 91" company shall get insurance policy, if applicable.	Complied
5.7 Empty drums and containers of toxic and hazards material shall be treated as per guidelines published for "management & Handling of discarded container". Records of same shall be maintained and forwarded to GPCB regularly.	Compliance Assured.
5.8 In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority	Compliance Assured.
5.9 In case of transport of hazardous waste to a facility for (i.e treatment, storage and disposal) existing in a state other than the state where hazardous waste are generated the occupier shall obtain "No objection certificate" from the state pollution control board, the committee of the concerned state or union territory administration where the facility exists.	Compliance Assured.
5.10 Unit shall take all concrete measures to show tangible results in waste generation reduction avoidance reuse and recycle. Action taken in this regards shall be submitted within 03 months and also along with form 4.	Compliance Assured.
5.11 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon Supreme Court's order in W. P no. 657 of 1995 dated 14 th October - 2003.	Compliance Assured.
5.12 Industry shall have to display on line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.	Noted

Annexure-19
Observations and Recommendations

Observations:

- General housekeeping inside the factory premises is good.
- Awareness program to ensure regular use of such equipment's is highly desirable.
- Various personal protective equipments to ensure the safety are provided to employees and workers.
- Company has provided medical facilities like medical officer and first aid box at different locations.
- Adequate facility like ladder, platform etc is provided to ensure safety while sampling at different places.
- Water sprinkling system is provided for the storage yard & approach road to reduce fugitive emissions.
- To improve FES system for controlling the fugitive from the furnace during charging of Iron Metal.
- The company is using Imported Coal in plant premises then after by-products will generate as a Charcoal, which is using in our plant as a solid fuel for heat generation.

CHARCOAL CON. DETAIL	
Apr-19	1019
May-19	439
Jun-19	439
Jul-19	351
Aug-19	388
Sep-19	439
Oct-19	262
Nov-19	263
Dec-19	434
Jan-20	310
Feb-20	272
Mar-20	311
Total	4927

- To collect the domestic waste water by STP and reuse in gardening /plantation.
- To install mechanized sprinkler system in the transfer point of conveyor belt.
- To control the ground dust emission in the road side area.

Recommendations:

- Industry is advised to increase frequency of water sprinkling to reduce dust generation in Coal yard area & Fly ash area.
- Company should be follow coal handling guideline.
- Green belt already developed having area of **92.00 acres**, has to be developed further for better environment. More plantation activity based on periodic targets and reviewing it as per schedule.
- Various personal protective equipments to ensure the safety are provided to employees and workers.
- Industry should check on regular time interval basis, APCM like Pneumatic System of ESP, Bag Filter etc. on regular time interval.
- Industry should submit six monthly data of disposal of the fly ash to the GPCB twice in a year within the time limit prescribed by GPCB.

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

235

APPENDIX-1
Copy of IMS

TUV NORD

CERTIFICATE

Management system as per
ISO 9001 : 2015

In accordance with TÜV NORD CERT procedures, it is hereby certified that

ELECTROTHERM (INDIA) LIMITED
STEEL & PIPE DIVISION

Survey No. 325, Near Toll Naka, Village: Samakhiyali,
Taluka.: Bhachau - 370 150, Dist.: Kutch, Gujarat,

Head Office : Survey No. 72, Village - Palodia, Via. Thaltej,
Ahmedabad - 382 115, Gujarat,
India

applies a management system in line with the above standard for the following scope:

**Manufacture & Sale of Different Grades & Sizes of Centrifugally
Cast (Spun) Ductile Iron Pressure Pipe for Water & Sewag,
Sponge Iron, Steel Billets, TMT & Round Bars, Cut & Bend TMT
Bars and Epoxy Coated TMT Bars**

Certificate Registration No. 44 100 16391121
Audit Report No. 2.5-3380/2006

Valid until 25.10.2022
Valid from 26.10.2019
Initial Certification 26.10.2016

SKK

Certification Body
at TÜV NORD CERT GmbH

Issue 25.09.2019
Place : Mumbai

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures & shall be valid subject to regular Surveillance Audits.

TÜV NORD CERT GmbH

Langemarkstrasse 20

45141 Essen

www.tuv-nord-cert.com

TUV India Pvt. Ltd., 801,

Raheja Plaza - 1, L.B.S. Marg,

Ghalkopar (W), Mumbai - 400 086, India

www.tuv-nord.com/in



AITs Environmental Audit Cell.
Atmiya Institute of Technology & Science, Rajkot

TÜV NORD

CERTIFICATE

Management system as per
ISO 14001 : 2015

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**ELECTROTHERM (INDIA) LIMITED
STEEL & PIPE DIVISION**

Survey No. 325, Near Toll Naka, Village: Samakhiyali,
Taluka.: Bhachau - 370 150, Dist.: Kutch, Gujarat,

Head Office : Survey No. 72, Village - Palodla, Via. Thalal,
Ahmedabad - 382 115, Gujarat,
India

applies a management system in line with the above standard for the following scope

**Manufacture & Sale of Different Grades & Sizes of Centrifugally
Cast (Spun) Ductile Iron Pressure Pipe for Water & Sewag,
Sponge Iron, Steel Billets, TMT & Round Bars, Cut & Bend TMT
Bars and Epoxy Coated TMT Bars**

Certificate Registration No. 44 104 16391121
Audit Report No. 2.5-3380/2006

Valid until 25.10.2022
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Certification Body
at TÜV NORD CERT GmbH

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TÜV NORD CERT GmbH Langemarkstrasse 20 45141 Essen www.tuev-nord-cert.com

TUV India Pvt. Ltd., 801, Raheja Plaza - 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in





CERTIFICATE

Management system as per
ISO 45001 : 2018

In accordance with TÜV NORD CERT procedures, it is hereby certified that

ELECTROTHERM (INDIA) LIMITED
STEEL & PIPE DIVISION

Survey No. 325, Near Toll Naka, Village: Samakhiyali,
Taluka.: Bhachau - 370 150, Dist.: Kutch, Gujarat,

Head Office : Survey No. 72, Village - Palodia, Via. Thalaj,
Ahmedabad - 382 115, Gujarat,
India

applies a management system in line with the above standard for the following scope

**Manufacture & Sale of Different Grades & Sizes of Centrifugally
Cast (Spun) Ductile Iron Pressure Pipe for Water & Sewag,
Sponge Iron, Steel Billets, TMT & Round Bars, Cut & Bend TMT
Bars and Epoxy Coated TMT Bars**

Certificate Registration No. 44 126 16391121
Audit Report No. 2.5-3380/2005

Valid until 25.10.2022
Valid from 26.10.2019
Initial Certification 26.10.2016 (BS OHSAS 18001)



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Place : Mumbai

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures & shall be valid subject to regular Surveillance Audits.

TÜV NORD CERT GmbH Langemarkstrasse 20 45141 Essen www.tuev-nord-cert.com

TUV India Pvt. Ltd., 801, Raheja Plaza - 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in





CERTIFICATE

Energy Management System as per
ISO 50001 : 2018

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**ELECTROTHERM (INDIA) LIMITED
STEEL & PIPE DIVISION**

Survey No. 325, Near Toll Naka, Village: Samakhiyali,
Taluka.: Bhachau - 370 150, Dist.: Kutch, Gujarat,

Head Office : Survey No. 72, Village - Palodia, Via. Thaltej,
Ahmedabad - 382 115, Gujarat,
India

applies a management system in line with the above standard for the following scope

**Manufacture & Sale of Different Grades & Sizes of Centrifugally
Cast (Spun) Ductile Iron Pressure Pipe for Water & Sewag,
Sponge Iron, Steel Billets, TMT & Round Bars, Cut & Bend TMT
Bars and Epoxy Coated TMT Bars**

Certificate Registration No. 44 764 161166
Audit Report No. 2.5-3380/2006

Valid until 14.09.2022
Valid from 25.09.2019
Initial Certification 15.09.2016



Certification Body
at TÜV NORD CERT GmbH

Issue 25.09.2019
Place : Mumbai

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures & shall be valid subject to regular Surveillance Audits.

TÜV NORD CERT GmbH

Langemarckstrasse 20

45141 Essen

www.tuev-nord-cert.com

TUV India Pvt. Ltd.,

801, Raheja Plaza - I, L.B.S. Marg, Ghalkopar (W),

Mumbai - 400 086, India

www.tuv-nord.com/in



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

239

APPENDIX-2
Copy of CC&A



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382 010

Phone : (079) 23222425

(079) 23232152

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY. R.P.A.D

No. PC/CCA-KUTCH-294(14)/GPCB ID 17826/

DATE: -

Amendment in Consolidated Consent & Authorization order no AWH -77789 dated 31/03/2016
(Under the provisions/rules of Environmental acts)

CONSENTS AND AUTHORISATION:

(Under the provisions /rules of the aforesaid environmental acts)

To,

M/s. Electrotherm (India) Limited

Survey No:- 325,

Village:- Samakhiyali,

Tal:- Bhachau, Dist:- Kutch.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 & as amended from time to time framed under the Environment (Protection) Act-1986 this board has granted the Consent order AWH-77789 vide letter No. PC/CC&A-KUTCH-294(14)/GPCB ID: 17826/355742; issued vide order dated 11/05/2016 which is valid up to 22/03/2021.

And whereas Board has received your CCA-Amendment application vide inward No.144302 dated 04/09/2018 after careful consideration and under the provisions/rules of the aforesaid acts Consents & Authorization are hereby further amended as under:

1. This order shall be read as CCA-Amendment Order No. H-98296 date of issued 29/12/2018 up to 22/03/2021.

Subject to specific condition:

1. Industry shall manage Solid Wastes generated from industrial activities as per Solid Waste Management Rules-2016 (solid waste as defined in Rule-3(46)).
2. As per Provisions of Rule 18 of Solid Waste Management Rules-2016 you are directed to make an arrangement in Utilities to replace at least five percent (5%) of your solid fuel requirement by 'refused derived fuel'.
3. Industry shall obtain NOC from CGWA as per order of Hon. National Green Tribunal for the withdrawal of ground water, if applicable
4. Industry shall provide dedicated storage facility for fly ash.
5. Industry shall comply with fly ash notification 1999 as amended from time to time.
6. No ground water shall be withdrawal without obtaining prior permission from competent authority.

4. Authorization under Hazardous and other waste [Management & Tran boundary Movement] Rules, 2016 & amended.

4.1 Authorization Number: H - 98296 and Date of Issue: 29.12.2018

4.2 Authorization shall be valid up to 22/03/2021

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ISO-9001-2008 & ISO-14001 - 2004 Certified Organisation



AITs Environmental Audit Cell.
Atmiya Institute of Technology & Science, Rajkot

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

240

4.3 M/s. Electrotherm (India) Limited, is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at, Survey No:- 325, Village:- Samakhiyali, Tal:- Bhachau, Dist:- Kutch.

Sr. No.	Waste	Quantity / Year			Category	Mode of Disposal
		Existing MT	Proposed MT	Total MT		
1.	Used Oil	7.31 KL	--	7.31 KL	5.1	Collection, storage, Transportation, Disposal by selling out to authorized recyclers
2.	Process Waste	675 MT	--	675 MT	7.2	Collection, storage, Transportation, Disposal by selling out to authorized recyclers
3.	Dram/Barrel bags	24 Nos	1976 Nos	2000 Nos	33.3	Collection, storage, Transportation, Disposal by selling out to authorized decontamination facility
4.	Zinc Dust	108 MT	100	208	6.2	Collection, storage, Transportation, Disposal by selling out to registered recyclers
5.	Magnesium Dust	252 MT	--	252 MT	6.2	Collection, storage, Transportation, Disposal by selling out to authorized recyclers
6.	Tar Containing Waste	4.8 T/Year	--	4.8 T/Year	11.3	Collection, storage, Transportation, Disposal to TSDF
7.	Epoxy Coasting	--	--	8	6.2	Collection, storage, Transportation, Disposal by selling out to authorized recyclers
8.	Oil Cotton Waste	--	--	20 MT/Yr	5.2	Collection, storage, Transportation & Disposal to TSDF

4.4 The authorization is granted to operate a facility for collection, storage within factory premises transportation and ultimate disposal of Hazardous waste as per condition no. 4.3 to the industry having valid CCA of this Board.

5. The other terms and condition mentioned in the AWH - 77789 issued vide CCA letter PC/CC&A-KUTCH-294(14)/GPCBID- 17826/355742 dated 11/05/2016 shall remain unchanged.

For and on behalf of
GUJARAT POLLUTION CONTROL BOARD

(Signature)
13/12/2019
(Smt Urvashi Upadhyay)
Environmental Engineer

2

Outward No:494514, 13/02/2019

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

241



GPCB

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY R.P.A.D.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules'2008 & as amended from time to time framed under the Environment (Protection) Act-1986 board has granted the Consent order board has granted the Consent order AWH-39212 vide letter No. PC/CCA-KUTCH-250/GPCB ID: 29685/62672 dated 03-11-2010 for a validity up to 11-05-2015

And whereas Board has received application vide Inward I.D.NO.104027 dated 12-02-2016 for the renewal of Consolidated Consent and Authorization (CC & A) of this Board and under the provisions/rules of the aforesaid acts. Consents & Authorization are hereby further amended as under:

CONSENTS AND AUTHORISATION:

(Under the provisions /rules of the aforesaid environmental acts)

To,

M/s Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant),

Plot No: 325,

Village: Samakhiyali,

Taluka: Bhachau,

Dist: Kutch East- 370 140.

1. Consent Order No.: AWH - 77789....Date of decision... 31/03/2016.
2. The consent order shall be valid up to 22/03/2021 for use of outlet for manufacturing of the following items/ products at Plot No: 325, Village: Samakhiyali, Taluka: Bhachau, Dist: Kutch East- 370 140.

NO.	PRODUCT		PRODUCTION CAPACITY(MT/M)
1	Sponge Iron		24,000
2	D.I. Pipes		16,000
3	Captive Power	WHRB	21 MWH
		FBC	24 MWH
4	Pig Iron (Blast furnace)		23,100
5	Sinter Plant		32,400
6	Steel Rolling Mill(TMT Plant)		52166
7	MS Billets/Bars		25000
8	Stainless steel billets		416
9	Alloy Nickel		17 Sets/Month
10	Induction Furnaces		1500 sets/Month
11	Electric cycle & vehicles	All Model (Yo Bike)	650 sets/Month
		E-Rickshaw & E. Winner	

1

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CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

242

SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS:

1. Applicant shall strictly comply with all the conditions stipulated by MoEF in the order of Environment Clearance issued vide letter no. F.No.J-11011/503/2006-IA II (I) dtd. 20/02/2008 & vide letter no. F.NO J/11011/899/2008-IA II (I) dtd. 27/01/2010.
2. No ground water shall be used for the project coming under Dark zone without permission of competent authority.
3. All the recommendation made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel Plants should be implemented.

1. CONDITIONS UNDER WATER ACT 1974:

- 1.1 The generation and discharge of industrial effluent from the manufacturing process and other ancillary industrial operations shall not exceed **284 m³/Day**.
- 1.2 The quantity of the domestic waste water (Sewage) shall not exceed **30 m³/Day**.
- 1.3 The quality of the industrial effluent shall confirm to the following standards

PARAMETER	PERMISSIBLE LIMIT
pH	6.5 to 8.5
Temperature	40 °C
Colour (pt.co. scale units)	100 units
Suspended Solids	100 mg / l
Oil & Grease	10 mg / l
Phenolic Compound	01 mg / l
Ammonical Nitrogen	50 mg / l
BOD (3Days at 27 °C)	30 mg / l
COD	100 mg / l
Chlorides	600 mg / l
Sulphates	1000 mg / l
Total Dissolved Solids	2100 mg / l
Sodium Absorption Ratio	26
Percent Sodium	60 %
Sulphides	02 mg / l
Total Chromium	02 mg / l
Hexavalent Chromium	0.1 mg / l
Copper	03 mg / l
Lead	0.1 mg / l
Mercury	0.01 mg / l
Nickel	03 mg / l
Zinc	05 mg / l
Cadmium	02 mg / l
Cyanides	0.2 mg / l
Arsenic	0.2 mg / l

2

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

243



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GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

Fluorides	02 mg / l
Insecticides / Pesticides	Absent

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

1.4 No wastewater shall be discharged from sponge iron plant, Sinter plant, WHRB power plant, TMT bar plant, DI pipes and induction/arc furnace. The wastewater generated from power plant will be treated and used for dust suppression and green belt development within premises only.

1.5 The unit shall install meters for measuring category wise (Category as given in Water -Cess Act-1977 schedule II) consumption of water.

1.6 The treated effluent conforming to the above standards shall be utilized for gardening or sprinkled in ash disposal area or used for cooling in sponge iron plant within the premises of the industry.

1.7 The quality of the sewage shall conform to the following standards (As per GPCB Norms, whichever is applicable).

PARAMETER	PERMISSIBLE LIMIT
BOD (5 days at 20° C)	20 mg/liter
Suspended Solid	30 mg/liter
Residual Chlorine	Minimum 0.5 mg/liter

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

1.8 The unit shall install meters for measuring category wise (Category as given in Water -Cess Act-1977 schedule II) consumption of water.

2. CONDITIONS UNDER AIR ACT 1981:

2.1 The flue gases emission through various stacks/vent of DG sets /boiler / furnace / heater shall conform to the following standards:

Sr. no.	Stack attached to	Stack height in Meter	Air Pollution Control System	Fuel used and Its Quantity	Parameter	Permissible limit
1	Reheating furnace	30	Bag filter	Furnace oil:1000 liter/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
2	Quantifier	25	--	--		
3	AFBC Boiler 1 & 2 (Power plant)	90	ESP	Imported coal:25MT/day, Lignite:550MT/day, Char coal:144MT/day, Waste heat:85000m ³ /day		
4	D.G set	12	--	Diesel:1800Liter/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
5	Rotary Kiln No.1(WHR B)	65	ESP	3.0MT/hr		
6	Boiler	30	Dust collector	Coal 03 MT/day		

3

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CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

244

7.	Blast furnace	30	Bag Filter with Gas Cleaning Plant	Coke		
8.	Annealing furnace 30	30	—	FO:2700 Liter/hour		
9.	D.G Set 1000 KVA	12	—	Diesel:120 Liter/day		
10.	Induction (melting Furnace)1	30	Cyclone separator and bag filter	Electricity	PM	50 mg/NM ³
11.	Induction Furnace 02	30	Cyclone separator and bag filter	Electricity		
12.	Rotary Kiln Attached with WHRB (2 nos. stack)	50	ESP	Coal:720 MT/day, Waste Heat: 64TPH	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
13.	Annealing Furnace (02 Nos)	30	—	Alternative Fuel from CO from Blast Furnace		
14.	Blast furnace (02 Nos)	50	Bag Filters/Wet cleaning system	Coke:95MT/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
15.	Sinter Stack (02 Nos)	30	ESP	Coke Breeze 108 MT/day		
16.	Reheating furnace	30	Multi cyclone	Furnace oil: 1000 Liter/day		
17.	Organ Oxygen Decarbonization System AOD (02 Nos)	30	Fumes Extraction System, Cyclone Separator and Jet pulse bag filter System	Electricity		
18.	Induction furnace (02 Nos)	30	Bag filter	Electricity	PM	50mg/NM ³

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

245



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GUJARAT POLLUTION CONTROL BOARD

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2.2 The Process emission through various stacks/vent of reactors, process vessel shall conform to the following standard:

Sr. no.	Stack attached to	Stack height in meters	Air Pollution Control System	Parameter	Permissible limit
1	Gas exits (Pilot burner stack)	30	—	P M	100
2	Gas exits (Coal crusher)	30	Bag Filter	SO ₂	mg/NM ³
3	Meg Converter	16	Cyclone separator & Bag filter	NOx	40 mg/NM ³
4	Zinc coating	16	Cyclone separator & Bag Filter		25 mg/NM ³
5	Barrel grinding and De dusting	16	Cyclone separator & Bag Filter		
6	Bilumin drying oven	30	—		
7	Core cleaning section	16	Cyclone separator		
8	Iron ore circuit (Crusher & Screen)	25	Cyclone separator & Bag Filter		
9	Stock house (Day bin)	15	Cyclone separator & Bag Filter		
10	Injection coal (Transfer house)	15	Cyclone separator & Bag Filter		
11	Production Storage bunker (Production house)	15	Cyclone separator & Bag Filter		
12	Intermediate bin & product separation bin	25	Cyclone separator & Bag Filter		
13	Product Storage Bunker (02Nos)	15	Cyclone separator & Bag Filter		
14	Intermediate Bin/Product Separation Bin (02 Nos)	25	Cyclone separator & Bag Filter		
15	Coal Injection (02Nos)	15	Cyclone separator & Bag Filter		
16	Day Bin/Stock House (02 Nos)	15	Cyclone separator & Bag Filter		
17	Iron Ore Circuit (Crusher & screen) (02Nos)	25m Common Stack	Cyclone separator & Bag Filter		
18	Coal Circuit (Crusher & screen) (02Nos)				
19	Magnesium Converter	16	Cyclone separator & Bag Filter		
20	Zinc Coating	16	Cyclone separator & Bag Filter		
21	Blast furnace (pilot Burner Stack 02 Nos)	20	Cyclone separator & Bag Filter		

5

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22	Crusher/Conveyor transfer Stack (02 Nos)	Belt	15	Bag Filter		

- 2.3 Stack monitoring facilities like porthole, platform/ladder etc. shall be provided with stacks/vents chimney in order to facilitate sampling of gases being emitted into the atmosphere.
- 2.4 Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.
- 2.5 All internal roads shall be block topped. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using native species shall be developed along the roads. facilities for parking of trucks carrying raw coal from the linked calamines shall be created within the Unit.
- 2.6 Regular Cleaning & wetting of the Ground within premises.
- 2.7 Covered all storage area for coal handling.
- 2.8 Water sprinkling systems (mechanized & moving) shall be installed in plant area.
- 2.9 Proper arrangement shall be made to control dust emission during loading & unloading of the raw material & finished products.
- 2.10 All measures for the control of environment pollution shall be provided before commencing production.
- 2.11 Continuous Ambient air quality monitoring station shall be set up in Steel Plant area.
- 2.12 Continuous stack monitoring facilities for all the stacks and sufficient air pollution control devices shall be provided to keep the emissions level below 100 mg/NM³.
- 2.13 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder as per national Ambient Air Quality Emission Standards issued by Ministry of Environment and Forest dated 16th November-2009.

Sr. No.	Pollutant	Time Weighted Average	Concentration in Ambient air in µg/M ³
1.	Sulphur Dioxide (SO ₂)	Annual 24 Hours	50 80
2.	Nitrogen Dioxide (NO ₂)	Annual 24 Hours	40 80
3.	Particulate Matter (Size less than 10 µm) OR PM ₁₀	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5 µm) OR PM _{2.5}	Annual 24 Hours	40 60

- 2.14 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

247



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GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

2.15 The level of Noise in ambient air within the premises of industrial unit shall not exceed following levels:

Between 6 A.M. and 10 P.M. : 75 dB(A)

Between 10 P.M. and 6 A.M. : 70 dB(A)

4. Authorization under Hazardous Waste [Management, Handling & Transboundary Movement] Rules, 2016.

4.1 Authorization Number: AWH-77789 Valid up to 22.3.2021

M/s. Electrotherm (INDIA) Limited (Sponge Iron & DI Pipe Plant) is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated Plot No - 325, Village: Samakhiyali, Taluka: Bhachau, Dist: Kutch - 370 201.

Sr. No.	Waste	Quantity per Year	Category	Facility
1.	Used Oil/Spent Oil	7.31 KL	5.1	Collection, Storage, Transportation and disposal by utilized for Lubrications of machines & remains & selling out to registered recyclers/ reprocessor
2.	Process Waste	675 MT	7.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
3.	Discarded Container	24 Nos	33.3	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
4.	Zinc Dust	108 MT	6.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
5.	Magnesium Dust	252 MT	6.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch

4.2 The authorization is granted to operate a facility for collection, storage, within factory premises, transportation, and ultimate disposal of Hazardous wastes by selling out to registered recyclers.

4.3 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

4.4 TERMS AND CONDITIONS OF AUTHORISATION:

- The applicant shall comply with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.
- The authorisation shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.

7

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- c) The persons authorized shall not rent, lend, sell, and transfer of otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorisation order by the persons authorized shall constitute a breach of this authorisation.
- e) It is the duty of the authorised person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
- f) An application for the renewal of an authorisation shall be made as laid down in rule 7.
- g) Industry shall submit annual report within 15 days and sub sequent by 31st January every year.
- h) Hazardous waste shall be disposed off in accordance with the Haz. Waste (Management, Handling & Transboundary Movement) rules, 2016 and unit shall have to obtain Authorization of this Board for all applicable categories of waste.

5. GENERAL CONDITIONS: -

- 5.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 5.2 Applicant shall also comply with the general conditions given in annexure I.
- 5.3 The waste generator shall be totally responsible for (I.E. Collection, storage, transportation and ultimate disposal) of the wastes generated.
- 5.4 Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form - 4 by 31st January of every year.
- 5.5 In case of any accident, details of the same shall be submitted in Form - 5 to Gujarat Pollution Control Board.
- 5.6 As per "Public liability Insurance Act - 91" company shall get Insurance policy, if applicable.
- 5.7 Empty drums and containers of toxic and hazards material shall be treated as per guideline published for "management & handling of discarded containers". Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.
- 5.8 In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority.
- 5.9 In case of transport of hazardous waste to a facility for (I.E. Treatment, Storage and disposal) existing in a state other than the state where hazardous waste are generated, the occupier shall obtain "No Objection certificate" from the state pollution Control Board, the Committee of the concerned state or Union territory Administration where the facility exists.
- 5.10 Unit shall take all concrete measures to show tangible results in waste generation reduction, voidance, reuse and recycle. Action taken in this regards shall be submitted within 03 months and also along with Form 4.
- 5.11 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon Supreme Court's order in W.P. No.657 of 1995 dated 14th October 2003.

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

249



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

5.12 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.

For and on behalf of

GUJARAT POLLUTION CONTROL BOARD

Sushil Vegda
(Sushil Vegda)

Senior Environment Engineer

NO: GPCB/CCA-KUTCH-294 (10)/ GPCB ID 17826/ 355742

Date:- 11/05/16

To,

M/s Electrotherm (India) Ltd (Sponge Iron & DI Pipe Plant),

Plot No: 325,

Village: Samakhiyali,

Taluka: Bhachau, Dist: Kutch East- 370 140.

Clean Gujarat Green Gujarat

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CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)



APPENDIX-3
TSDF MEMBERSHIP



DETOX GROUP

Saurashtra Enviro Projects Pvt. Ltd.

Integrated Common Hazardous Waste Management Facility

Certificate

Certificate No : 1200000304

To Whomsoever it may concern

This is to certify that

ELECTROTHERM INDIA LIMITED

SURVEY NO - 325, N.H.NO. 8A
VILL - SAMAKHIYALI, TAL: BHACHAU
KUTCH

is a valid member of

SAURASHTRA ENVIRO PROJECTS PVT. LTD.

for Integrated Common Hazardous Waste Management Facility.

This membership is valid for a period of

5 Years

Date of issue : 24.12.2014

For, Saurashtra Enviro Projects Pvt. Ltd.

Date of expiration : 23.12.2019

Place of issue : Surat

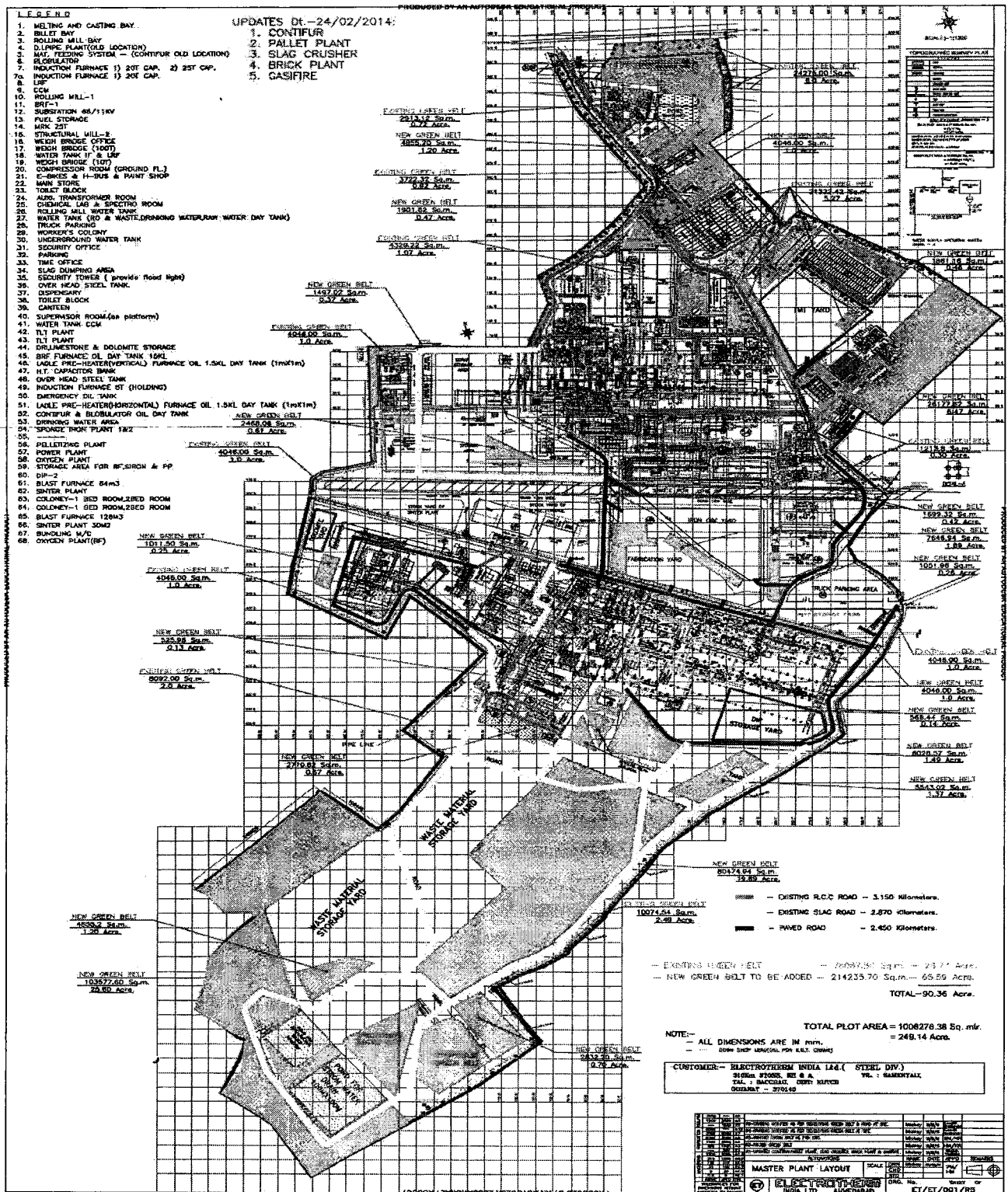
Director

SUBJECT TO SURAT JURISDICTION

Corporate Address: K. G. Chambers, Udhana Darwaja, Ring Road, Surat - 395 002
p. +91 261 2351248, 2346181 f. +91 261 2354068
e. info@seplindia.com w. www.detoxgroup.in
CIN :- U51100GJ2006PTC047689



APPENDIX-4
COPY OF SITE PLAN



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

252

APPENDIX-5 PLI Policy



Held Cover Letter

Held Cover Letter : 1926253

The details pertaining to your proposal submitted to Company with quote no. As per attached Quote are as under

Quote No.	As per attached Quote
Insured's Name	ELECTROTHERM INDIA LIMITED
Location of Risk	As per quote
Risk Inception Date	09/Jun/2019
Risk Expiry Date	08/Jun/2020
Premium Amount (INR) (including service tax)	43,601/-
Hypothecated to	NA
Product Name	PUBLIC LIABILITY INSURANCE-ACT POLICY
IL share %	NA
Total sum insured/no.of lives	150000000

Note:

This letter shall be valid only for a period of 30 days or until the date of receipt of the actual policy from the Company.

Upon issuance of this letter all previously issued temporary receipts are considered null and void. This letter shall stand valid for the period of cover offered by the company under the Policy Document which would be provided to you in a short while.

* Coverage of risk is subject to realization of premium by the company. Insurance coverage under the Policy will commence only on realization of full premium. In case premium not realized by the company due to any reason, Company shall not be on cover and contract of insurance shall be treated as void ab-initio. Excess payment, if any, will be refunded or will be utilize in future policy issuance without any interest.

This is a computer generated letter and does not require signature.

Date of issuance: 11/06/2019

Place of issuance: Ahmedabad Zodiac

ICICI Lombard General Insurance Company Limited

IRDA Reg. No. 115

CIN: U67200MH2000PLC129408

Mailing Address:

Registered Office:

Toll free No. : 1800 2666

401 & 402, 4th Floor, Interface 11,
New Linking Road, Malad (West),
Mumbai - 400 064.

ICICI Lombard House, 414, Veer Savarkar Marg,
Near Siddhi Vinayak Temple, Prabhadevi,
Mumbai - 400 025.

Alternate No.: +919223522666 (chargeable)
Email: customersupport@icicilombard.com
Website: www.icicilombard.com



CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)



Attached & forming part of
Policy no. 4007/132865111/02/000

IRDAN115P0005V01200102 Misc 07

PUBLIC LIABILITY INSURANCE
(UNDER PUBLIC LIABILITY INSURANCE ACT 1991)

Policy No. 4007/132865111/02/000

PREAMBLE

ICICI Lombard General Insurance Company Limited ("the Company"), having received a Proposal and the premium from the proposer named in the Schedule referred to herein below, and the said Proposal and Declaration together with any statement, report or other document leading to the issue of this Policy and referred to therein having been accepted and agreed to by the Company and the Proposer as the basis of this contract do, by this Policy agree, in consideration of and subject to the due receipt of the subsequent premiums, as set out in the Schedule with all its Parts, and further, subject to the terms and conditions contained in this Policy, as set out in the Schedule with all its Parts that on proof to the satisfaction of the Company of the compensation having become payable as set out in Part I of the Schedule to the title of the said person or persons claiming payment or upon the happening of an event upon which one or more benefits become payable under this Policy, the Sum Insured/ appropriate benefit will be paid by the Company.

PART I OF SCHEDULE		
1	Name of the insured	Electrotherm India Limited
2	Mailing Address of the insured	Survey No.72, Village : Palodia, Taluka Kalol, India Gujarat, Ahmedabad - 382115
3	Trade or Business of the insured	Steel Manufacturing
4	Address of Premises insured	All India Locations
5	Paid Up Capital	INR 24.74 Crores
6	Policy period	June 09, 2019
		June 08, 2020
		Time: 00:00 hrs
		23.59 hrs
7	Turnover	INR 2,500 Crores
8	Limit of Indemnity	
	Aggregate One Year (AOY)	INR 150,000,000
	Any One Accident (AOA)	INR 50,000,000
9	Compulsory Excess	Nil

CLIENT: M/s. Electrotherm (India) Ltd.,
Plot No. 325 Vill: Samakhiyali, Ta: Bhachau, Dist.: Kutch
(Audit Period: April'19 to March'20)

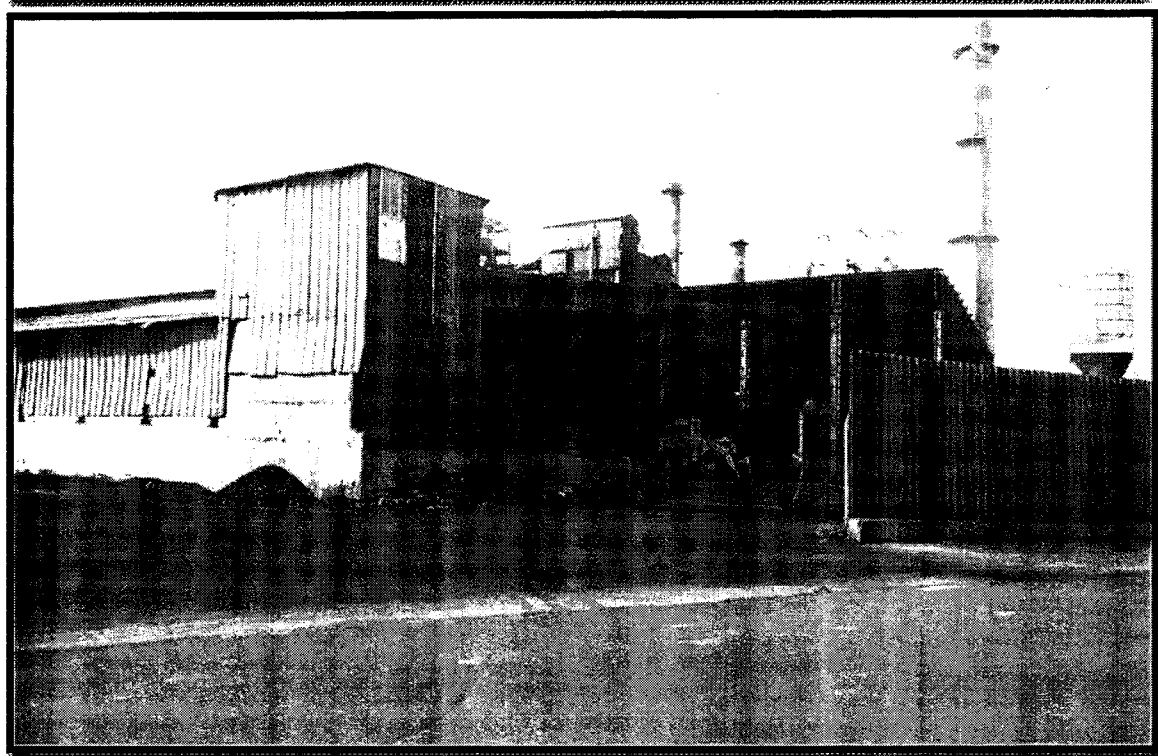
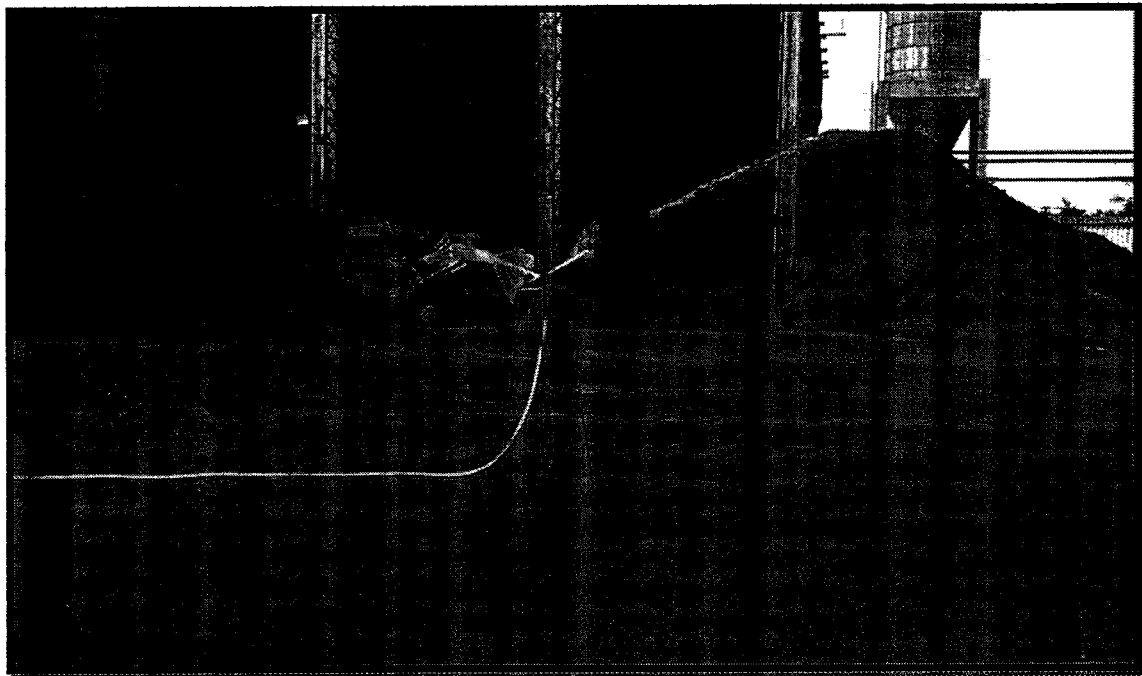


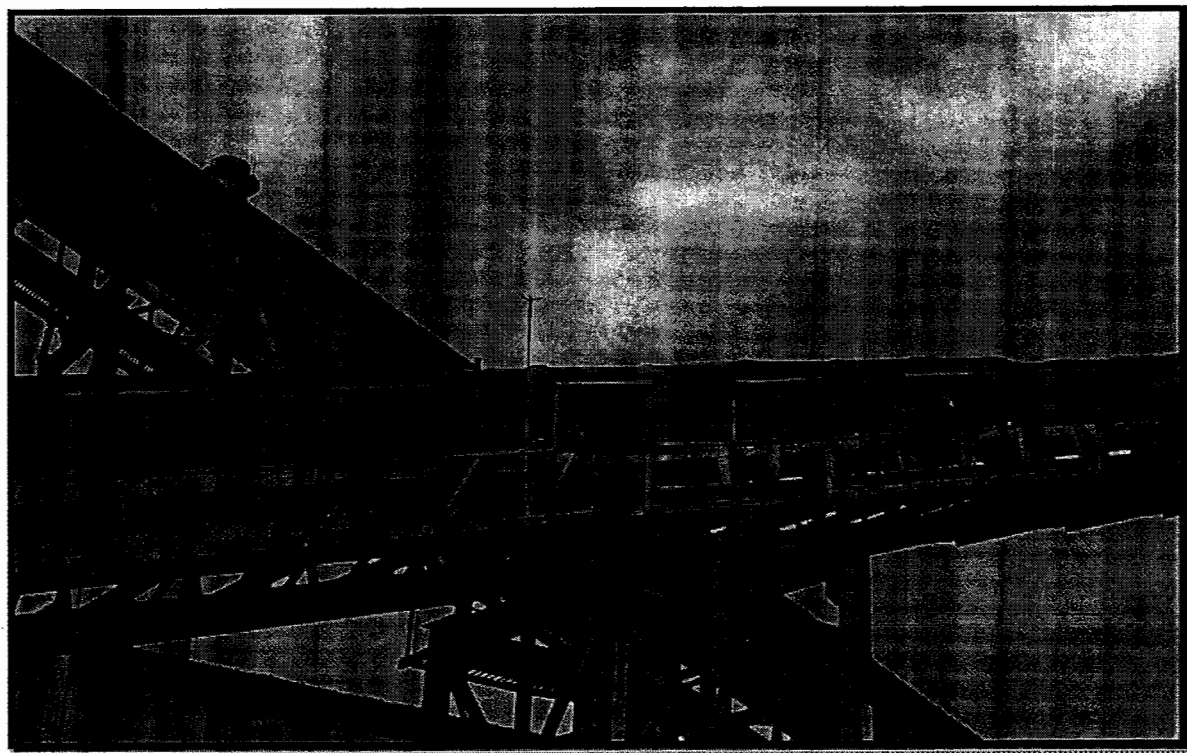
*Attached & forming part of
Policy no. 4007/132865111/02/000*

10	Total Premium	INR 23,600/-	
		(Premium value mentioned above is inclusive of taxes applicable)	
	ERF Contribution	INR 20,000/-	
	Total Payable	INR 43,601/-	
11	Co-insurance details	Co-Insurer Name	Co-Insurer share
		NA	NA
12	Special conditions	Policy shall stand cancelled ab initio in the event of non-realization of the premium	
13	Intermediary Details	Intermediary Code: 201496670773 Intermediary Name: Parth Nileshbhai Desai Intermediary contact no.: 9909559969 Intermediary email id: shubhconsultancy@yahoo.co.in	
14	GSTIN Reg. No		
	ILGIC GSTIN Address		

APPENDIX-6
Coal Handling at Plant

WATER SPRINKLER SYSTEM IN COAL YARD & CLOSED SHED
WITH COVERED CANOPY WITH FIXED SPRINKLER SYSTEM





Mechanized Fixed Sprinklers Details at SIP

S. No.	Location	Qty.	Remarks
1.	From weigh bridge-4 (R.Mill) to PSB throughout Road	22	Mechanized Fixed Sprinkler Installed at all locations.
2.	From Day bin to mobile crusher	11	
3.	From Day bin to kiln 1 GCT (Between kiln-1 & RMP)	5	
4.	From Cooler 2 to kiln 2 GCT (Between CCR & Kiln 2)	11	
5.	From DG room to GCT pump house (Between CCR & Kiln-1)	8	
6.	CCR entrance	5	
7.	At RMP conveyer BC-13 side	2	
8.	At RMP conveyer BC-6 side	4	
9.	RMP GAIL line road side from Iron ground hopper to Day bin	17	
10.	Fixed Sprinklers (Fixed Stand Sprinklers)	4	
Total Sprinkler		91 Nos.	

Mechanized Fixed Sprinklers Details at CPP

S. No.	Location	Qty.	Remarks
1.	RMHS area	10	Mechanized Fixed Sprinkler Installed at all locations.
2.	At RMHS conveyer BC-6 side	12	
3.	At RMHS transfer point	04	
4.	At Boiler area	16	
Total		40 Nos.	

Mechanized Fixed Sprinklers Details at all plant

S. No.	Location	Qty.	Remarks
1.	RMHS area at Sinter plant	10	Mechanized Fixed Sprinkler Installed at all locations.
2.	At RMHS of BF conveyer belt area from BC 01 to 30	12	
3.	At RMHS storage of BF plant	08	
4.	Plant boundary	25	
Total		55 Nos.	

Water Spray Nozzle Installed on Belt Conveyor at SIP:

Water spray nozzles on belt conveyors At SIP		
Sr. No	Location	Qty.
1	BC 01	2
2	BC 02	1
3	BC 04	2
4	BC 05	1
5	BC 06	2
6	BC 07	1
7	BC 11	1
8	BC 12	1
9	BC 13	2
10	BC 14	2
11	BC 19	1
12	BC 20	1
13	BC 40	1
14	BC 41	1
15	BC 43	1
Total Installed Water Spray Nozzles Qty.		20

ENVIRONMENTAL AUDIT REPORT

For The Period

April 2018

to

March 2019

FOR

**M/S. Electrotherm (India) Ltd.
(Sponge Iron & Di Pipe Plant)**

325, Vill-Samakhiyali,
Tal-Bhachau,
Dist: -Kutch-370140,
Gujarat.

PREPARED BY



V.V.P. ENGINEERING COLLEGE

Vajdi-Virda, Kalawa, Road, near Jethi Village,
Rajkot-360 005.

Website : www.vvp.edu.in

ENVIRONMENTAL AUDIT REPORT

For The Period

April 2018 to March 2019

FOR

M/s. Electrotherm (India) Limited,

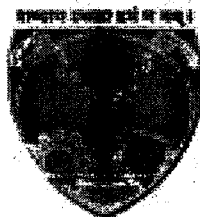
(Sponge Iron & Di Pipe Plant)

Address: Plot No. : 325, Village : Samakhiyali-370140

Taluka : Bhachau, District : Kutch Gujarat.

PREPARED BY:

V.V.P. ENGINEERING COLLEGE



Vajdi Virda, Kalawad Road, Rajkot - 360 005.

Phone : +91 281 278 3394, 278 3486 Fax : +91 281 278 3487

INDEX

Sr. No.	DESCRIPTION	PAGE No.
	FOREWARD	1
(A)	GENERAL	2
(B)	PRODUCT DETAILS	2
(C)	WATER ACT	3
(D)	AIR ACT	4
(E)	HAZARDOUS (SOLID) WASTE	5
(F)	SITE PLAN	5
(G)	RESOURCE RECOVERY	5
(H)	HEALTH	5
(I)	ACCIDENT	6
(J)	SAFETY MEASURES	6
(K)	REMEDIAL MEASURES	7
(L)	WATER CESS	7
(M)	NAME AND ADDRESS OF THE CONSULTANT	7
(N)	DECLARATION	8

LIST OF ANNEXURE

Sr. No	DESCRIPTION	PAGE No.
Annexure – 1	Electricity (KWH) and Diesel Consumption	9
Annexure – 2	Name and Address of Directors/Partners	10
Annexure – 3	No of Operating Days.	11
Annexure – 4	Production details	12
Annexure – 5	Raw Material Consumption.	14
Annexure – 6	Manufacturing Process Description, material balance and Manufacturing process flow diagram.	17
Annexure – 7	Water Consumption & Waste Water Generation and ETP Details with ETP flow diagram	28
Annexure – 8	Quality of water and waste water.	33
Annexure – 9	Details of ETP Operators.	34
Annexure – 10	Details of Flue Gas Stacks	35
Annexure – 11	Analysis of Stack Gas Emissions	37
Annexure – 12	Quality Analysis of Ambient Air.	39
Annexure – 13	Air Pollution Control Measures Description with Design data and diagram	40
Annexure – 14	Generation and Disposal of Solid / Hazardous Waste.	41
Annexure – 15	Noise Level Analysis Report.	47
Annexure – 16	The Compliance Report	48
Annexure – 17	Hazardous Chemicals	58
Annexure – 18	On Site – Off Site Emergency Plan	59
Annexure – 19	Observations & Suggestions	69

LIST OF THE APPENDIX

Sr. No	DESCRIPTION	PAGE No.
Appendix – 1	Copy of Consent	70
Appendix - 2	GPCB Analysis Reports	79
Appendix – 3	Site Plan	83
Appendix – 4	Membership Certificate	84
Appendix – 5	ISO Certificate	85
Appendix – 6	PLI Policy	87
	The Environment Management System Adequacy Certificate	

FOREWARD

As per the order of H'ble High court of Gujarat, Gujarat Pollution control Board implemented the Environment Audit Scheme in the month of April '97.

We are thankful to the Management of **M/s. Electrotherm (India) Limited (Sponge Iron & Di Pipe Plant)** for providing support to us to carry out Environment Audit work for their Plant located at **Plot No. : 325, Village: Samakhiyali, Taluka : Bhachau, District : Kutch Gujarat.** for the **period from April 2018 to March 2019.**

The objective of the Environment Audit was to evaluate the existing facilities provided to control and prevent Environment Pollution. In order to carry out the Environmental Audit the job was divided into two parts:

DATA COLLECTION:

As per the environmental Audit format prescribed by the Gujarat Pollution Control Board various information and data were collected, to evaluate the existing facilities which includes:

- Details of products manufactured, raw materials.
- Details of manufacturing process.
- Mass balance and water balance.
- Details of electricity and water consumption.
- Details of E.T.P and treatment process.
- Details of air pollution control measures.
- Details of hazardous/solid waste management.
- Details of emergency handling measures etc.
- Details of compliance under various acts and rules etc.

FIELD WORK AND LABORATORY STUDIES:

In order to evaluate the performance of Effluent Treatment Plant, Air pollution control measures, the ambient air quality and to monitor the noise level at various location samples were collected and analyzed at our lab.

We extend our sincere thanks to the Director and all the members of **M/s. Electrotherm (India) Limited (Sponge Iron & Di Pipe Plant)** for their co-operation and help extended to us in data collection and fieldwork to complete the Environmental audit.

We are pleased to submit this environmental audit report for further necessary action.

DATE: -08/05/19

PLACE: Rajkot

FORMAT FOR THE ENVIRONMENTAL AUDIT:(TO BE SUBMITTED IN TRIPLICATE)
(PERIOD FROM 01/04/2018 to 31/03/2019)

[A]	GENERAL	
1	Name of Industry.	M/s. Electrotherm (India) Limited (Sponge Iron & Di Pipe Plant) (17826)
2	Location	Plot No.:325, Village: Samakhiyali – 370140 Taluka : Bhachau , District : Kutch
3	Registered Office Address	Survey No. 72, Palodia Via. Thaltej, Ahmedabad
4	Month and year of Establishment.	29/10/2004
5	Nos. of Workers Employed Male/ Female & Total	Total- 2578 Male- 2575 Female- 03
6	Nos. of Electric connection with service number. Total connected load. Electric consumption/tonne of product manufactured.	01 Service number. 31423 ANNEXURE - 1
7	Nos. of DG sets and their capacity.	04 – 1250 KVA, 650 KVA, 650 KVA, 250 KVA
8	Name & Residential Address of all Directors/partners.	ANNEXURE - 2
9	Telephone nos. Residential & industrial, Fax no. & E-mail of industry & Partners/Directors.	ANNEXURE - 2
10	Nos. of Shifts & Timings.	3 Shift – 8 Hrs. Each ANNEXURE – 3
11	Name & Address of the In charge of Environment Safety: Division / Cell/Unit.	Mr. R.P Singh (AVP) Electrotherm India Limited Guest House Block-B, Samakhiyali, Bhachau - 270140
12	Nos. of days during which production activities were in operation during the period covered for it. (For Audit).	Total - 356 Day ANNEXURE - 3
13	Has the industry obtained ISO 9000/ISO 14000/OSHAS 18000/Any other EM accreditation/Certification recognition?	Yes, ISO 9001: 2008 & ISO 14001, OHASA 18001 & ISO 50001
14	Whether the industry has adopted cleaner production/cleaner Technology /CDM?	Yes
[B]	PRODUCT DETAILS	
1	Name of Products & Capacity with yield/purity per day.	ANNEXURE - 4
2	Name of all by – products and its quantity per day.	ANNEXURE - 4
3	Date of commencement of production for each product.	11/04/2005
4	All Raw materials required for one kg. of the product.	ANNEXURE - 5

5	Whether the manufacturing process is continuous or batch wise. Indicate the batch size. If the process is batch wise, no. of batches/month along with the duration of the completion of each batch.	ANNEXURE - 6
6	Detailed manufacturing process with flow diagram, list of unit operations & processes & with all chemical reactions, along with the time required (in hrs) for completion of each unit operation /process and the total time for completion of entire batch. Mass balance in respect of the quantity of water, input of raw materials and waste water generation.	ANNEXURE - 6
[C] WATER		
1	The quantity of water consumed per day as well as per tonne of product manufactured. (Please also enclose the water balance diagram).	Water is used for Cooling & Domestic Purpose only. ANNEXURE - 7
2	The quantity of waste water (trade waste) generated per tonne of each product per day, as well as per batch.	Waste water generation is in term of cooling tower blow down and boiler blow down and same will be utilized for dust suppression and water sprinkling within premises. ANNEXURE - 7
3	■ The particulars of effluent treatments, i.e. ■ Name and size of each unit. ■ The capacity of the ETP. ■ Flow diagram & Hydraulic diagram. ■ Whether lighting arrangement around ETP is provided. ■ Whether the separate energy meter for effluent treatment plant area is installed. If provided reading of the meter for consumption every month. ■ Whether flow meter is provided at the inlet and outlet of ETP. Please indicate the type of the flow meter.	ANNEXURE - 7 20000 Liters/Day. Yes Yes Yes, Magnetic flow meter is provided.
4	The method of disposal of final treated effluent and the point of disposal (Please attach sketch)	ANNEXURE- 7 ETP Flow Diagram Enclosed. Disposal of final treated effluent is at NCTL.
5	The quality of trade effluent before and after treatment as well as at the end of each stage of treatment.	ANNEXURE- 8
6	The quantity and quality of sewage and its method of treatment and disposal (Attach separate sheets) a) As per norms b) Total pollution load*	Septic tank and soak pit is provided
7	The open area available for disposal of the effluent.	NA

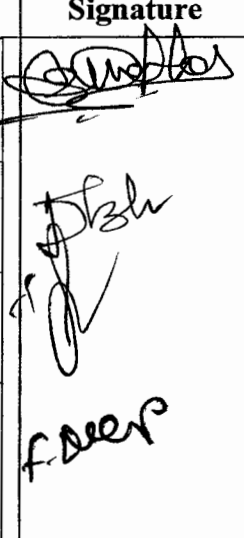
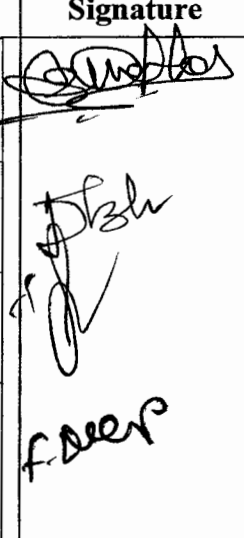
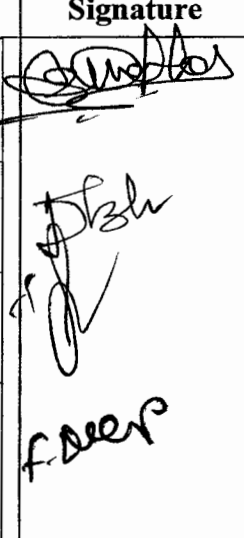
8	Whether the quality of treated effluent meets the specified norms. If no: the extent of deviation.	Yes
9	Improvement in effluent quality and quantity since previous environmental audit based on performance evaluation of effluent management systems. If yes, provide details (Attach separate sheets)	On-going
10	Retrofitting undertaken to improve performance of ETP. If yes, provide details.	"MAMBRANE TYPE" with Aeration system is for improving performance of ETP
11	Major problems encountered during operation of effluent treatment facilities, if any and reasons thereof.	No
12	The details about the operator/ chemist responsible for operation & maintenance of ETP. Name of the operators/employee Qualification & Experience of each operator/employee. Salary of operators/employee.	ANNEXURE- 9
13	The current status of consent under the water act-1974.	Consent order issued Vide AWH-77789/ID-17826 dated 31/03/2016, valid up to Date 22/03/2021. APPENDIX- 1
[D] AIR		
1	Nos. of the flue gas stacks, their height (from ground level), nature & consumption of fuel.	ANNEXURE-10
2	The details pertaining to the stack monitoring facilities.	All the stacks are provided with ladder, monitoring platform & sampling port.
3	Nos. of process stacks, their height (from ground level), source, expected pollutants & the details pertaining to the provision of stack monitoring facilities.	ANNEXURE-10
4	The quality of emission from each flue gas stack and the process stack and the extent of deviation from them.	ANNEXURE-11
5	The ambient air quality within the factory premises, along with the number of ambient air quality monitoring stations outside the factory.	ANNEXURE-12
6	The status of consent under the air act-1981	Consent order issued Vide AWH-77789 / ID-17826 dated 31.03.2016, valid up to Date 22/03/2021 APPENDIX-1
7	The details of air pollution control measures for all process and flue gas stacks.	ANNEXURE-13
8	Retrofitting undertaken to improve emission quality. If yes, provide details.	No
9	Major problems encountered during operation of control device, if any and Reasons thereof.	No

[E]	HAZARDOUS (SOLID) WASTE	
1	The quantity sources and composition of hazardous waste, solid waste from each process/source. (the total generation of the sludge per tonne of product manufactured.)	ANNEXURE – 14 1) Used oil -7.419 KL/Year with previous stock Reused- 0.490 KL Present stock- 6.929 KL. Total Solid Waste Generation in Year 2018-19 (Current) =248.027 MT. Total Solid Waste Generation in Year 2017-18 (Current)= 262.96 MT Total Solid Waste Generation in Year 2016-17 (Current)= 246.359 MT
2	The method of storage, treatment and disposal of hazardous/solid waste. The details should include area of storage and disposal and whether storage and disposal system is covered made impervious (Pucca). Please inform about treatment for leachate and solid waste.	The used / waste lubrication oil is being reused, as lubricant, in maintenance and if excess then it will be sold to the registered recycler(s) MOEF. The process waste (Dust/Slag): At present we are storing the dust / slag for the future use of the same in manufacturing of bricks or it will be disposed of for: filling of the low level (Sanitary land) area, as approved by the local authority.
3	The status of Authorization under the EPA-86 for solid waste.	Consent order issued Vide AWH-77789 / ID- 17826 dated 31.03.2016, valid up to Date 22/03/2021 APPENDIX -1
4	Plan, if any to reduce hazardous waste generation or its recycling.	No
[F]	SITE PLAN	
1.	The site plan showing the location of effluent treatment plant, final point of disposal of effluent, sampling point, drainage line, stacks, solid waste storage / disposal area and green belt (its width).	APPENDIX-3
[G]	RESOURCE RECOVERY	
	The details regarding resource recovery from environmental pollution control system including effluent treatment plant. The details regarding resource recovery/ by product recovery from manufacturing process by using cleaner production technology.	Slag: Mill Scale/slag is being used in the low line area for the filling of soil. Process waste (Dust): Storing the dust for the future use in manufacturing of bricks.
[H]	HEALTH	
1	Whether any hazard is involved in the manufacturing or from the work environment if yes, the details thereof.	No

2	Whether industry has pre-employment & periodical medical examination facilities.	Yes																
3	Whether health records are maintained regarding adverse effect on health of workers. If yes, details thereof.	Yes, As per company, no adverse effect on the health of worker.																
4	Whether industry has appointed a factory medical officer, if yes; full time or part time. Please also include the details about the name, address and qualification of the factory medical officer.	Yes Full Time Dr. Bindheswari Singh MBBS, CIH, FMO																
5	Details of medical facilities available. Please tick (✓) correct column First Aid Box /Dispensary/Ambulance /Hospital.	First aid box with first aid medicine is provided																
6	Whether sanitary facilities like latrine, urinals, bathrooms are provided and satisfactory.	Yes, All sanitary facilities have provided and are satisfactory																
[I]	ACCIDENTS																	
1	The details of accidents in the factory and remedial measures taken.	Yes, Major accident reported during the audit period																
[J]	SAFETY MEASURES																	
1	General Environment of the factory. Please tick (✓) the appropriate column. <table border="1" style="width: 100%;"> <tr> <td>(a) House Keeping.</td> <td>✓Good</td> <td>Fair</td> <td>Poor</td> </tr> <tr> <td>(b) Dustiness.</td> <td>High</td> <td>✓Medium</td> <td>Low</td> </tr> <tr> <td>(c) Lighting.</td> <td>✓Good</td> <td>Fair</td> <td>Poor</td> </tr> <tr> <td>(d) Ventilation</td> <td>✓Good</td> <td>Fair</td> <td>Poor</td> </tr> </table>	(a) House Keeping.	✓Good	Fair	Poor	(b) Dustiness.	High	✓Medium	Low	(c) Lighting.	✓Good	Fair	Poor	(d) Ventilation	✓Good	Fair	Poor	
(a) House Keeping.	✓Good	Fair	Poor															
(b) Dustiness.	High	✓Medium	Low															
(c) Lighting.	✓Good	Fair	Poor															
(d) Ventilation	✓Good	Fair	Poor															
2	Whether the following protective appliances are provided to all the persons. Goggle Gloves Gumboot Helmet Skin cream Soap Ear plug Face masks (gas mask) Clothing Respirator	Yes, All Protective Equipment are provided to persons as per applications.																
3	The details of facilities for disaster management / gas leakage.	Disaster management plan of the company at a glance as per ANNEXURE - 18																
4	Whether on site /off site emergency plans are prepared and are being implemented / upgraded; please give details.	Plans are being prepared & updated. ANNEXURE - 18																
5	Whether records of occupational hazards are maintained?	Yes																
6	Preventive measures adopted to minimize occupational hazard.	Yes, Regular medical checkup of employee.																

[K]	REMIDIAL MEASURES	
1	The details of sources; Monitoring and measures taken for control of noise pollution in and around the industrial premises.	Monitoring Reports of noise refer ANNEXURE - 15
2	The measures taken for prevention treatment and control of odour nuisance in and around the industrial premises.	No, odour nuisance observed.
3	The details in respect of cases / complaints under the water act 1974, the air act-1981 and EPA-1986.	As information by the company, no complains under any act received from GPCB.
4	The compliance report with respect to all the conditions of NOC/ Consent (under all the acts)	Compliance Report of CC&A Enclosed as per ANNEXURE - 16
5	Whether the factory handled / produced /stored any hazardous chemicals? If yes; give details.	ANNEXURE - 17
6	Whether insurance policy obtained under PLI Act? If yes, give details	To be obtained
[L]	The details regarding payment of the water cess for the previous & the current year.	NA
[M]	The name and address of the consultant engaged by the company /industry.	M/s. Royal Environment Auditing & Consultancy Service 303, 304 Shivalik-7, Near Bal Adalat, Gondal Road, Rajkot-360004

270

[N]	It is declared that all the information submitted in and with respect to this format by us is correct and for any lapse regarding incorrect information or not giving complete information we are responsible for that. (A) Name and signature of the recognized person of the industry/organization institute with Stamp.	(B) Name and signature of the member of the Audit team.													
	<table border="1"> <thead> <tr> <th>Name</th> <th>Signature</th> </tr> </thead> <tbody> <tr> <td>Mr. Ashok Pundir (VP-Operation)</td> <td rowspan="4"></td> </tr> <tr> <td>Mr. R.P. Singh (AVP- HR&HSE)</td> </tr> <tr> <td>Mr. Bhagwat Swaroop Sharma (AGM- HSE)</td> </tr> <tr> <td>Mr. Kuldeep Mourya (Dy. Manager-HSE)</td> </tr> </tbody> </table>	Name	Signature	Mr. Ashok Pundir (VP-Operation)		Mr. R.P. Singh (AVP- HR&HSE)	Mr. Bhagwat Swaroop Sharma (AGM- HSE)	Mr. Kuldeep Mourya (Dy. Manager-HSE)	<table border="1"> <thead> <tr> <th>Name</th> <th>Signature</th> </tr> </thead> <tbody> <tr> <td>Dr. Jitendra V. Mehta Environmental Engineer</td> <td rowspan="4"></td> </tr> <tr> <td>Mrs. Darshana T. Bhatti Chemical Engineer</td> </tr> <tr> <td>Dr. Ankita Khanna Chemist</td> </tr> <tr> <td>Dr. Sumitkumar D. Shashtry Microbiologist</td> </tr> </tbody> </table>	Name	Signature	Dr. Jitendra V. Mehta Environmental Engineer		Mrs. Darshana T. Bhatti Chemical Engineer	Dr. Ankita Khanna Chemist
Name	Signature														
Mr. Ashok Pundir (VP-Operation)															
Mr. R.P. Singh (AVP- HR&HSE)															
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Mrs. Darshana T. Bhatti Chemical Engineer															
Dr. Ankita Khanna Chemist															
Dr. Sumitkumar D. Shashtry Microbiologist															
[O]	Environment Management System Adequacy & Efficacy Certificate														

ANNEXURE -1
ELECTRICAL CONSUMPTION DETAILS

Electric Consumption /MT of Product Manufactured

Monthly Power Consumption: 2018-19		
Sr. No	Month	Consumed Qty. (Unit-KWH)
1	Apr-18	37954240
2	May-18	37501040
3	Jun-18	38425600
4	Jul-18	37844200
5	Aug-18	29910320
6	Sep-18	38043600
7	Oct-18	39323440
8	Nov-18	35558160
9	Dec-18	39968360
10	Jan-19	36976480
11	Feb-19	34697720
12	Mar-19	40134000
Total		446337160

Monthly Power Generation: 2018-19		
Sr. No	Month	Generation (Unit-MW)
1	Apr-18	41.668
2	May-18	40.934
3	Jun-18	40.568
4	Jul-18	37.517
5	Aug-18	28.083
6	Sep-18	40.972
7	Oct-18	39.138
8	Nov-18	37.900
9	Dec-18	39.640
10	Jan-19	34.913
11	Feb-19	38.994
12	Mar-19	42.015
Total		462.342

ANNEXURE - 2
LIST OF DIRECTORS / PARTNERS

Sr. No.	Name	Designation	Address & Phone No.
1	Mr. Mukesh Bhandari	Chairman & Managing Director	A-1, Skylark Apartment Satellite Road, Ahmedabad : 380015
2	Mr. Shailesh Bhandari	Managing Director	A-1, Skylark Apartment Satellite Road, Ahmedabad : 380015
3	Mr. Avinash Bhandari	Jr. Managing Director & CEO	24-Someshwar Complex Satellite Road, Satellite Ahmedabad: 380015
4	Mr. Siddharth Bhandari	Additional Director & Whole Time Director	A-1, Skylark Apartment Satellite Road, Ahmedabad : 380015
5	Ms. Kruti Shukla	Independent Director	5- Pallavi Tower -1 Opp. Memnagar Fire Station, Navrangpura Ahmedabad: 380009
6	Dr. Narayan Masand	Additional Director (Independent Director)	28, Schem 78 Part-II Opp. Prestige College Vijay Nagar, Indore, Madhya Pradesh-452010
7	Mr. Krishna Kant Shiromani	Additional Director (Independent Director)	WA-209, Scheme 94 Indore-452010 Madhya Pradesh

ANNEXURE -3
NUMBER OF SHIFTS & TIMINGS

Shift	Time
First	07.00 to 15.00 hrs.
Second	15.00 to 23.00 hrs.
Third	23.00 to 07.00 hrs.
General	09.00 to 18.00 hrs.

No. of Days Production Activities in Operation

Month	No. of Working Days
Apr-18	29
May-18	31
Jun-18	28
Jul-18	30
Aug-18	31
Sep-18	30
Oct-18	29
Nov-18	30
Dec-18	28
Jan-19	31
Feb-19	28
Mar-19	31
Total	356

ANNEXURE – 4
PRODUCTION DETAILS

Name of the Product and Capacity per Month with Yield / Purity per Day

Sr. No.	Name of product		Capacity MT/ Month
1	Sponge Iron		24,000
2	D.I Pipe		16,000
3	Captive Power	WHRB	21 MWH
		FBC	24 MWH
4	Pig Iron(Blast Furnace)		23,100
5	Sinter Plant		32,400
6	Steel Rolling Mill (TMT)		52166
7	MS Billets/Bars		
8	Stainless steel billets or MS billets		25000
9	Alloy Nickel		416
10	Epoxy coating TMT bar		52166
11	Induction Furnaces		17 Sets/Month
12	Electric cycle & vehicles	All Modal (Yo Bike)	1500 sets/Month
		E-Rickshaw & E. Winner	650 sets/month

Details of Actual Production and Yield as Per Company Record

Monthly Production: 2018-19									
Product(MT)									
Sr. No.	Month	SIP	SMS	RM	DIP	PIG	HOT METAL	SINTER	CPP
1	Apr-18	21979	31005	15323	15916	86	18152	26101	41.668
2	May-18	21977	31241	16102	15977	294	12742	14655	40.934
3	Jun-18	23950	31993	18020	15358	485	13951	19001	40.568
4	Jul-18	18293	31841	17050	12391	232	13519	20501	37.517
5	Aug-18	10334	24355	16045	10399	211	11439	16976	28.083
6	Sep-18	23284	31688	17048	15380	196	17364	24851	40.972
7	Oct-18	22399	31877	19011	15284	410	18186	28765	39.138
8	Nov-18	23897	28182	13020	15937	69	18181	24351	37.9
9	Dec-18	23884	33294	16865	15880	253	18552	28586	39.64
10	Jan-19	19701	28004	17268	15933	326	16336	26101	34.913
11	Feb-19	20849	25365	15002	15896	171	15722	22006	38.994
12	Mar-19	19505	29442	20099	15901	609	17848	25505	42.015
Total		250052	358287	200853	180252	3342	191992	277399	462.342

Name of By Products & Its Quantity as per Company Record

(B/F Slug)

Sr. No.	Month	Production (MT / Month)
1	Apr-18	9101.038
2	May-18	4655.933
3	Jun-18	5088.403
4	Jul-18	4951.629
5	Aug-18	4326.785
6	Sep-18	7156.116
7	Oct-18	6954.647
8	Nov-18	6622.131
9	Dec-18	7607.352
10	Jan-19	7064.046
11	Feb-19	6431.176
12	Mar-19	7401.113
Total		77360

ANNEXURE -5
RAW MATERIAL CONSUMPTION MT/MONTH

SMS Plant Raw Material Consumption Data: 2018-19			
Sr. No.	Month	Item	
		Scrap (Qty. in MT)	Sponge Iron (Qty. in MT)
1	Apr-18	9622.54	27631.3
2	May-18	9339.26	28106.16
3	Jun-18	9440.487	29545.65
4	Jul-18	12763.559	25209.904
5	Aug-18	11324.308	17864.563
6	Sep-18	13554.691	23882.33
7	Oct-18	13560.4	24427.165
8	Nov-18	9555.07	24190.095
9	Dec-18	12284.24	27094.588
10	Jan-19	13230.055	19906.655
11	Feb-19	10062.79	20437.449
12	Mar-19	1405.168	33771.975
Total		126142.568	302067.834

SPONGE IRON Plant Raw Material Consumption Detail: 2018-19						
Sr. No.	Month	Item				
		Iron Ore (Qty. in MT)	Iron Ore Pellets Local (Qty. in MT)	S. Coal (Qty. in MT)	Dolomite (Qty. in MT)	Charcoal (Qty. in MT)
1	Apr-18	12742.53	24514	18485.46	733	1884
2	May-18	7778.68	31065.97	18368.97	601	1580
3	Jun-18	4992.23	34590.24	20040.478	718	1723
4	Jul-18	5436.33	20073.64	14813.46	541.01	1127
5	Aug-18	212	15732.84	8942.91	0	727
6	Sep-18	5817.04	29643.01	19703.34	1089.01	0
7	Oct-18	6128.321	29108.44	18609.9	1180	0
8	Nov-18	8119.11	28919	20563.2	1061	1654
9	Dec-18	12923.46	24444.66	20642.24	1780	1054.01
10	Jan-19	10885.81	18898.39	16157.7	2248	0
11	Feb-19	10826.37	21660	18345.72	2020	0
12	Mar-19	4520.17	24161	17843.88	2618	0
Total		90382.051	302811.19	212517.258	14589.02	9749.01

CPP Raw Material Consumption: 2018-19				
Sr. No.	Month	I. Coal (Qty. in MT)	IG 2 Coal (Qty. in MT)	Charcoal (Qty. in MT)
1	Apr-18	21067	1109.35	771
2	May-18	19260.7	977.31	658
3	Jun-18	15884.96	964.95	693
4	Jul-18	15884.96	964.95	693
5	Aug-18	14487.57	667.62	527
6	Sep-18	16835	732.46	466
7	Oct-18	16432	785.82	291
8	Nov-18	13948	391.22	125
9	Dec-18	16569	771.62	0
10	Jan-19	15859	734.98	7
11	Feb-19	15095	895.69	117.02
12	Mar-19	20823	631.349	61.98
Total		202146.19	9627.319	4410

BF PLANT Raw Material Consumption Detail: 2018-19					
Sr. No.	Month	Iron Ore (Qty. in MT)	Iron Ore Pellet (Qty. in MT)	Lam Coke (Qty. in MT)	Quartzite (Qty. in MT)
1	Apr-18	6082.989	607.24	11310.38	504.572
2	May-18	3031.636	2407.998	8312.111	281.843
3	Jun-18	3072.459	2136.711	9255.447	407.218
4	Jul-18	4680.025	938.457	10008.387	509.617
5	Aug-18	3754.685	942.009	8293.828	453.226
6	Sep-18	4431.6	2676.315	11095.197	529.39
7	Oct-18	3982.971	2300.656	11944.643	553.967
8	Nov-18	6617.817	0	11357.429	511.076
9	Dec-18	6657.09	0	12052.46	566.792
10	Jan-19	6416.273	11.658	11398.1	496.313
11	Feb-19	5711.439	85.732	10587.232	530.308
12	Mar-19	7158	0	11909.455	600.72
Total		61596.984	12106.776	127524.669	5945.042

DIP Plant Raw Material Consumption Data: 2018-19			
Sr. No.	Month	Hot Metal (Qty. in MT)	Scrap (Qty. in MT)
1	Apr-18	17330.643	136.46
2	May-18	12563.244	95.064
3	Jun-18	13541.249	22.99
4	Jul-18	13110.632	465.703
5	Aug-18	11176.37	114.52
6	Sep-18	17094.811	43.36
7	Oct-18	18011.682	47.71
8	Nov-18	17309.505	138.88
9	Dec-18	18285.13	99.53
10	Jan-19	16178.722	793.51
11	Feb-19	15532.605	783.33
12	Mar-19	17513.362	898.3
Total		187647.955	3639.357

Rolling Mill Raw Material Consumption Data: 2018-19		
Sr. No.	Month	M.S. Billets Consumption (Qty. in MT)
1	Apr-18	16098
2	May-18	16868
3	Jun-18	18860
4	Jul-18	17896
5	Aug-18	16894
6	Sep-18	17943
7	Oct-18	19984
8	Nov-18	13636
9	Dec-18	17804
10	Jan-19	18146
11	Feb-19	15800
12	Mar-19	17649
Total		207579

ANNEXTURE – 6
MANUFACTURING PROCESS

Process Description of Blast Furnace Plant**General:**

The purpose of a blast furnace is to chemically reduce and physically convert iron oxides into liquid iron called “hot metal”. The blast furnace is a huge, steel stack lined with refractory brick, where iron ore, coke and limestone are dumped into the top, and preheated air is blown into the bottom. The raw materials require 6 to 8 hours to descend to the bottom of the furnace where they become the final product of liquid slag and liquid iron. These liquid products are drained from the furnace at regular intervals. The hot air that was blown into the bottom of the furnace ascends to the top in 6 to 8 seconds after going through numerous chemical reactions. Once a blast furnace is started it will continuously run for four to ten years with only short stops to perform planned maintenance.

Manufacturing Process:

The blast furnace is a counter-current reaction where solids descend and gases ascend. In this reaction there are numerous chemical and physical reactions that produce the desired final product which is hot metal. The main inputs for the blast furnace are iron ore (sinter); coke and lime stone.

The Iron ore; as naturally available on earth is either in the form of Hematite (Fe_2O_3) or in the form of Magnetite (Fe_3O_4) and the iron content ranges from 60% to 68%. Sinter is produced from fine raw ore, small coke, sand-sized limestone and numerous other steel waste materials that contain some iron. These fine materials are proportioned to obtain desired product chemistry then mixed together. This raw material mix is then placed on a sintering strand, which is similar to a steel conveyor belt, where it is ignited by gas fired furnace and fused by the heat from the coke fines into larger size pieces that are from 10 mm to 30 mm. The iron ore, pellets and sinter then become the liquid iron produced in the blast furnace with any of their remaining impurities going to the liquid slag.

The coke is produced from a mixture of coals. The coal is crushed and ground into a powder and then charged into an oven. As the oven is heated the coal is cooked so most of the volatile matter such as oil and tar are removed. The cooked coal, called coke, is removed from the oven after 18 to 24 hours of reaction time. The coke contains 90 to 93% carbon, some ash and sulphur but compared to raw coal is very strong. The strong pieces of coke with a high energy value provide permeability, heat and gases which are required to reduce and melt the iron ore, pellets and sinter.

The final raw material in the iron making process is limestone; which can be in pure calcium chloride, calcium oxides or dolomite limestone containing magnesia or a blend of the two types of limestone.

All of the raw materials are stored in separate silos and transferred to the stock-house before charging. Once these materials are charged into the furnace top, they go through numerous chemical and physical reactions while descending to the bottom of the furnace.

The major chemical reactions consist of reduction of iron ore; oxidation (burning) of carbon in the coke. Another important series of reaction takes place at high temperature is the reaction of lime with impurities; resulting in slag.

Another product of the iron making process, in addition to molten iron and slag, is hot dirty gases. These gases exit the top of the blast furnace and proceed through gas cleaning equipment where particulate matter is removed from the gas and the gas is cooled. This gas has a considerable energy value so it is burned as a fuel in the "hot blast stoves" which are used to preheat the air entering the blast furnace to become "hot blast". Any of the gas not burned in the stoves is sent to the boiler house and is used to generate steam which turns a turbo blower that generates the compressed air known as "cold blast" that comes to the stoves.

Gas Cleaning System of Blast Furnace:

The hot dirty gases generated from the top of the blast furnace shall be cleaned in the Gas cleaning system. Dry gas cleaning system, in which series of bag filters will be installed.

281

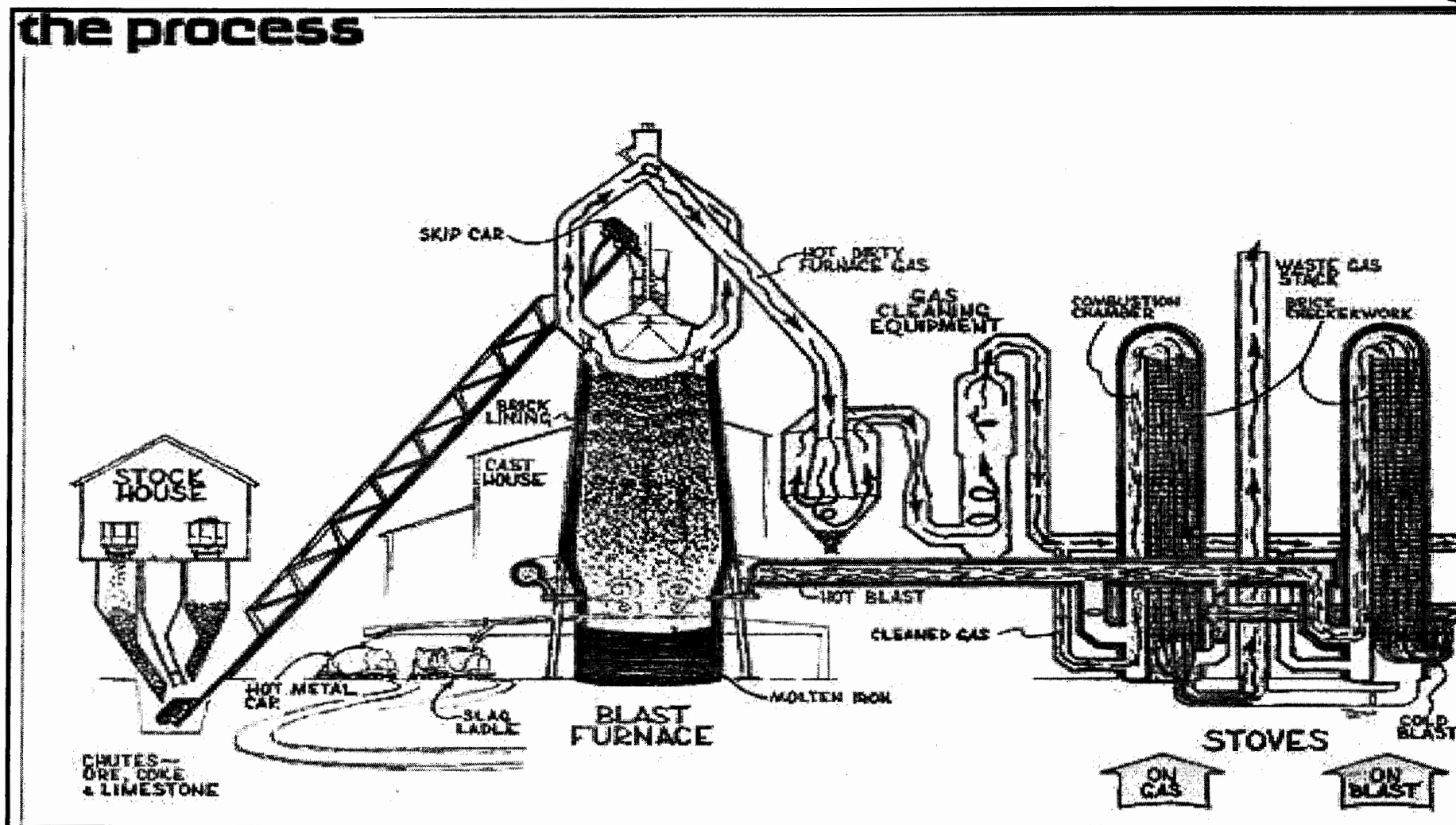


Fig: Flow Diagram of Blast Furnace

Process description of WHRB Power Plant

The existing Captive Power Plant is installed based on the state-of-art technology. The most advanced and techno-commercially feasible facility is installed. The proposed Power plant will be having total two Wastes heat Recovery Boilers. The ample heat available in the exhaust gases (from the proposed sponge iron plant) will be 20 economize to generate steam at Waste Heat Recovery Boilers.

System Design – Mechanical:

System in the power plant is designed based on the following normal operating conditions:

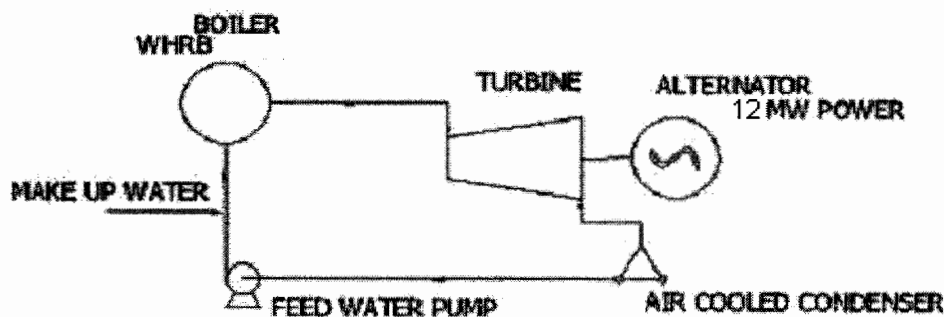
- Power at generator terminal: 12 MW
- Voltage of power generation: 11 KV

Following gives the design basis of the different system offered for the proposed WHRB plant.

Process and Control Mechanism:

Steam Turbine Generators (STG) are the main assembly in the Power Plant. The steam generator(s) shall be outdoor type and waste heat recovery boilers.

The boiler shall receive the water from 20 economizer 20 Water Treatment System; which shall convert raw water to soft water suitable for the boiler application. The steam generated at Boiler will be passed through the Turbine attached to it. In turbine Generator, the steam will be used to rotate the coil in magnetic field to produce electricity. This electrical energy will be supplied at step-up transformer; from where, it is transmitted at high voltage to step-down transformer for distribution.



TYPICAL FLOW DIAGRAM OF STEAM BASED TURBO GENERATOR SET

Fig 1.0: Flow diagram of steam based generator

Part of the steam shall be used to regenerate the feed water temperature and thereby improve the thermodynamic cycle efficiency. The steam; during this process gets cooled and then; it shall pass through an Air Cooled condenser. This condensate so formed shall be pumped back with pumps to the deaerator and then to the boiler.

There will be other auxiliary systems which shall be used to like Compressed air system, air-conditioning system, etc; detailed description of the same is given in subsequent sections.

Components of the CPP:

Waste Heat Recovery Boiler System:

The waste heat recovery boilers are designed to operate only with the thermal energy in the waste gases from the rotary kilns and these boilers do not need any supplementary or auxiliary firing. There is no fuel usage in the waste heat recovery boilers. The waste gases from After Burning Chamber (ABC) of Sponge Iron Kilns will be conveyed to the waste heat boilers through gas ducts. Proper refractory lining shall be given for the ducting as the gases will be coming at high temperature in the range of 950–975°C.

Air Cooled Condenser (ACC):

- The exhaust will be connected to an air – cooled condenser to maintain 0.18 Ata pressure in the condenser during normal operation.
- The air cooled condenser will have of extruded aluminium fins.
- The proposed condenser is sized for 105% the quantity of exhaust steam flow expected from the turbine in MCR condition.
- Air cooled condenser is design with atmospheric temperature of 420°C
- At lower ambient, the ACC will develop a better vacuum and it is assumed that STG will be designed to take advantage of the same and produce more power.

Compressed Air System:

The requirement of compressed air for instrument and the control systems of the power plant will be supplied by two instrument air compressors with one working and one stand-by arrangement to assure smooth and continuous operation of the plant. A centralized compressed air system is provided to meet the requirements of ash handling system, instrument and service air requirement of the power plant. The air separator will be provided with accessories like inter cooler, after cooler, Moisture separators, Air driers, air receivers and control panel.

Water System:

In the proposed Activities, the major requirement of water shall be in the steam generation in CPP. The total water requirement will be fulfilled by Gujarat Water infrastructure limited. The copy of allotment letter is enclosed as Annexure. The full-proof water handling system is proposed for raw water management. Water system consists of raw water storage system of adequate capacity; and water treatment system designed to provide continuous flow of required water quantity.

Solid Waste (Ash) Handling System:

In the Waste Heat recovery boiler (WHRB), practically no ash is generated. The Particulate Matter already available in the hot gases is only passing through the waste heat boilers & that to be collected into ESP. The ash handling system proposed for the WHRB is Dry type dense phase ash handling system. Since the radiant chamber ash and ash from the super heater & evaporator will be at high temperature, the ash will be cooled to acceptable temperature by air in the ash cooler and then fed to the dense phase system. The ash from other outlets like economizer, electrostatic precipitator will be at lower temperatures in the range of 160–350°C and hence directly fed in to dense phase ash handling system. The ash collected from various points will be conveyed to the common silo fitted with a dust conditioner through dense phase pneumatic ash handling system. The ash silo capacity will be to suit the evacuation requirements.

Sources of Pollution and Control Techniques:

The proposed sponge iron plant, pig iron plant, TMT plant and Sinter plant will impose some Environmental Pollution. In this section, we will identify the sources of pollution. A broad outline of the pollution control techniques is also delineated. The industry has proposed a system to protect the environment. The system consists of best equipment and management practices to minimize the pollution caused to the environment.

1. Air Pollution & Control System:

For air pollution control, there are various types of measures adopted. The facilities include Electrostatic Precipitator, Bag-houses, in addition, the wet handling systems /Bag filters are also proposed for the Blast furnace plant.

Adequate and efficient measures have been provided to keep the dust emission at a bare minimum level. Efficient Collection of dust at sources, their de dusting with efficient filters and recycling the dust to process is the prime objective. Primary dust source are the crusher house, screen house, kiln/furnace in iron plants. However, in case of kiln, the gases will be routed through the WHRB and in case of Blast furnace; the gases will be routed through the stoves. Both these systems are envisaged for heat recovery; which also helps in reduction of dusting to the atmosphere.

The particulars of most specific individual sources and their pollution control measures are delineated as follows:

Flue Gas Stacks of WHRB Plant:

Number of Stack	2
Stack attached to	Sponge Iron Kiln (routed through WHRB)
Type of fuel used	Waste heat from Sponge Iron kiln
Air Pollution Control equipment	Electrostatic Precipitator
Stack height from GL	50 meter lime treatment will be provided)

Besides these major stacks to control the fugitive emission other Air Pollution Control measure will be installed with Iron Ore Crusher / Coal Crusher / Stock House / Intermediate Bin etc. Detail of same is mentioned in below table 1.0:

Table 1.0: Plant Stacks

Sr. No.	Source of Emission	Stack Dia. (mm)	Stack Height (m)
1	Iron Ore Crusher/Screen House	550	12
2	Coal Crusher/Screen House	550	22
3	Coal Injector Building	200	11
4	Intermediate Bin	650	12
5	Product Separation/Storage House	650	22

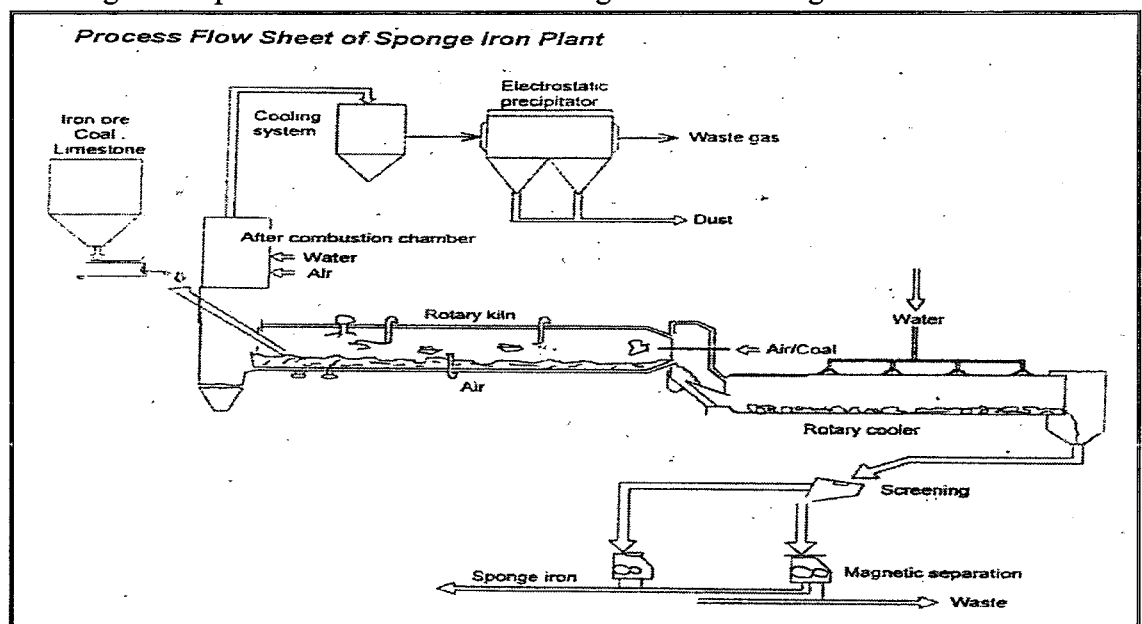
Table 1.1: Measure to Prevent Fugitive Emission during Loading Unloading and Transportation.

Fugitive Emission Source	Control Technique	Control Equipments	Categorization of Control System Capabilities
Active Storage Piles	- Watering - Windscreen - Plantations	Water Sprinkler on yard	RACT
Conveyor & Transfer Points	- Water Spray - Hooding & Ducting	Dust Suppression system Bag Filters	RACT
Product Handling	- Windscreen - Hooding & Ducting	Bag Filters	RACT
Loading & Unloading	- Windscreen - Water Sprays	Water Sprinkler on yard	RACT
RACT – Reasonable Available Control Technology.			

Description of manufacturing process:**Sponge Iron:**

The production process of sponge iron using S/L process involves four steps namely;

- i. **Raw material preparation plant:** The raw material preparation plant consists of crushers and screens through which the seized material required for process is prepared. Normally, jaw crushers are used for iron ore crushing and roll or impact crushers for coal. The feeding for the crushers are done through the conveyors and vibrating feeders.
- ii. **Stock house:** The stock house consists of the raw material storage bins; which store material up to 24 hours plant requirement. There are four bins one each for iron ore, feed coal, limestone and injection coal. The raw materials are fed into a rotary kiln through the volumetric/weigh feeders at a predetermined rate.
- iii. **Reduction kiln:** The processing of the materials consists mainly of kiln and cooler system. The iron ore is pre-heated and reduced in a rotary kiln and passes to the rotary cooler; where it gets cooled. The cooled material is then passes to the belt conveyor; where the cooler discharge is fed to the product house conveyor. The material is then led to the product separation circuit. An intermediate bin is provided to take care of any eventualities occurring due to breakdown of the product separation circuit.
- iv. **Product separation plant:** in the product separation section, the sponge iron and the coal-char (un-burnt coal) are separated. The cooler discharge material is screened to different sizes, and fed into magnetic separator. The sponge iron is magnetic and hence, it gets attracted to the magnet present in the magnetic separator and is discharged to separate bins the dust intake hot gases settles and gets cleaned.



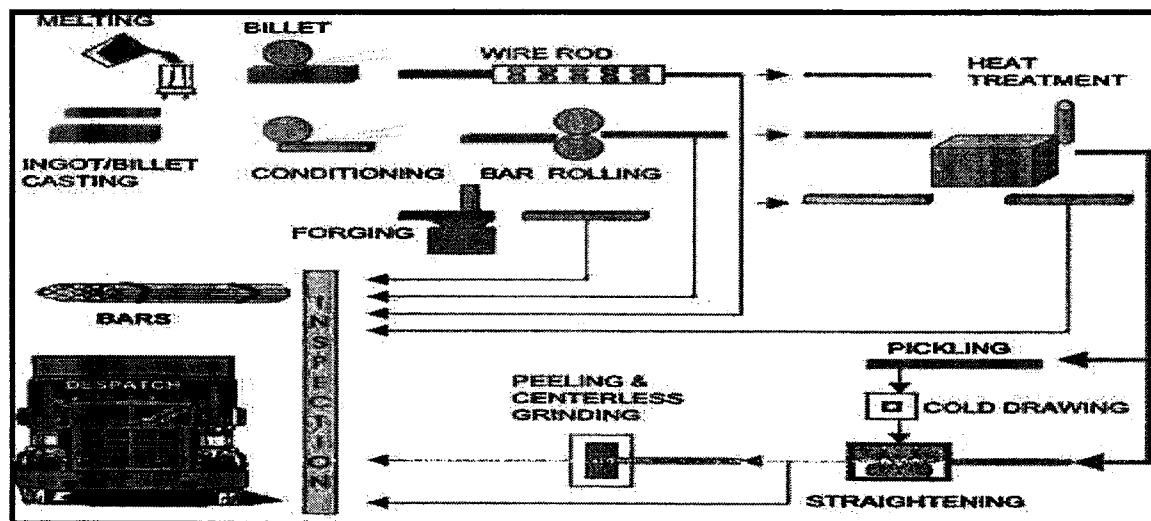
Steel Billets, Ingots, Stainless Steel Billets:

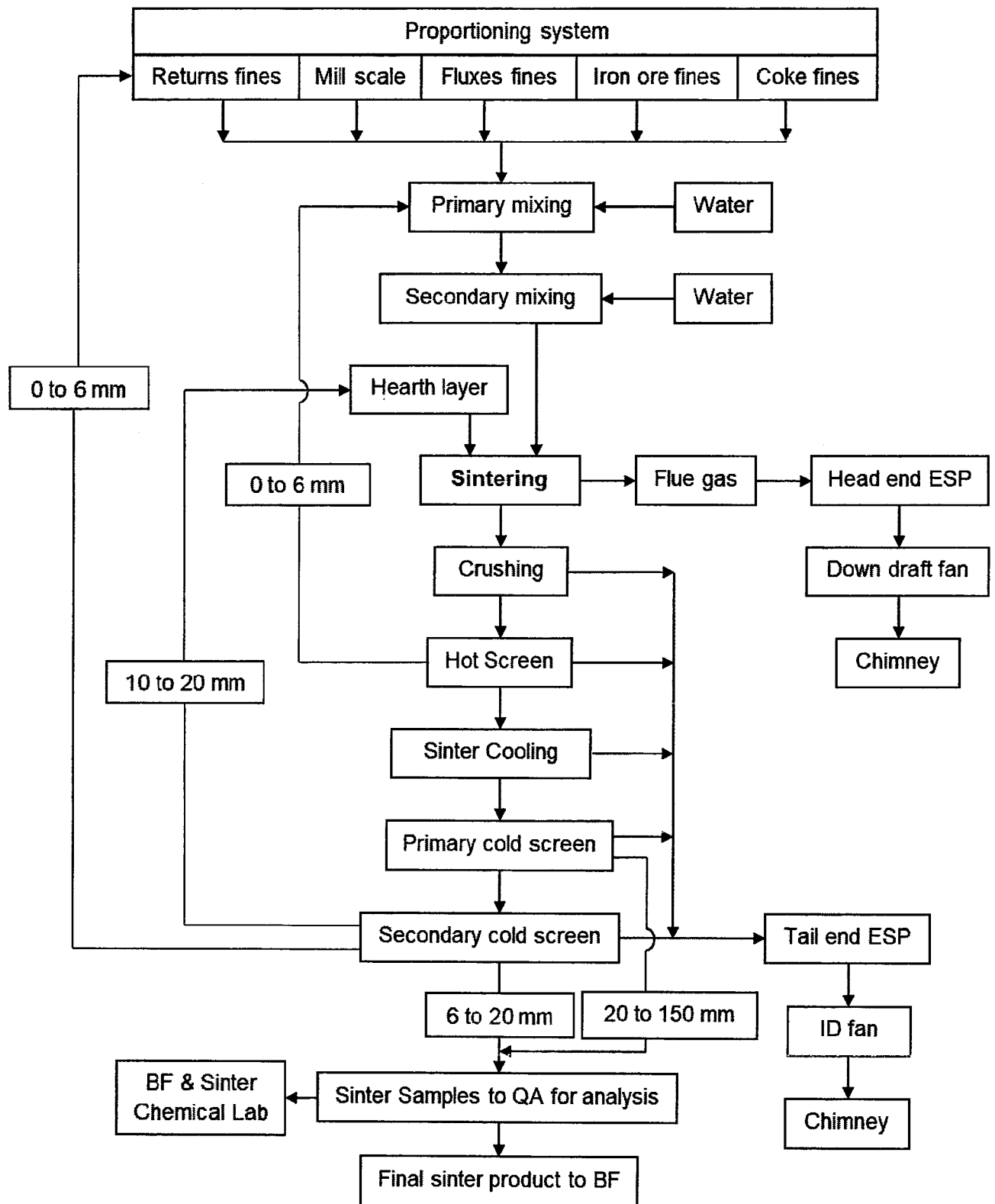
Raw materials are procured as per prefixed quality standards. Basic raw materials are charged in to the Induction furnace to achieve the required temperature. On achieving required temperature, melted mass is being poured in to the ladle refining furnace by tilting mechanism. This molten mass is charged in to the continuous casting machine where it is cooled with the help of High pressure water spray. This is then transferred to the rolled table for cutting operations for different sizes. Final products are steel billets, ingots, slabs which are ready for captive consumption for production of Rods & bars

TMT Plant Process:

Billet received from Steel Melt Shop are inspected and cut to length as per the size of TMT to be rolled. These billets are then put into Billet Reheating Furnace where it is heated to rolling temperature depending on the grade of steel. The reheated Billets are passed through 3 nos. of roughing stands and then goes to Continuous Stands which are 12 in number. These stands are with A.C. motor for Variable speeds.

After C12 the bar passes through TMT Box where it goes under Thermo Mechanical Treatment to improve upon Corrosion Resistance and Mechanical properties like Yield Stress, Elongation, Bending, Tensile strength, etc. After passing through TMT box, the bar is cut into lengths to accommodate on cooling bed. After the bar is cooled it is cut into fix lengths as per requirement of market through Shearing Machine. At an interval of 1 hour a sample is drawn for checking weight per meter and mechanical properties.



Sinter Plant Process Flow Diagram

ANNEXURE 7
WATER CONSUMPTION ETP DETAILS

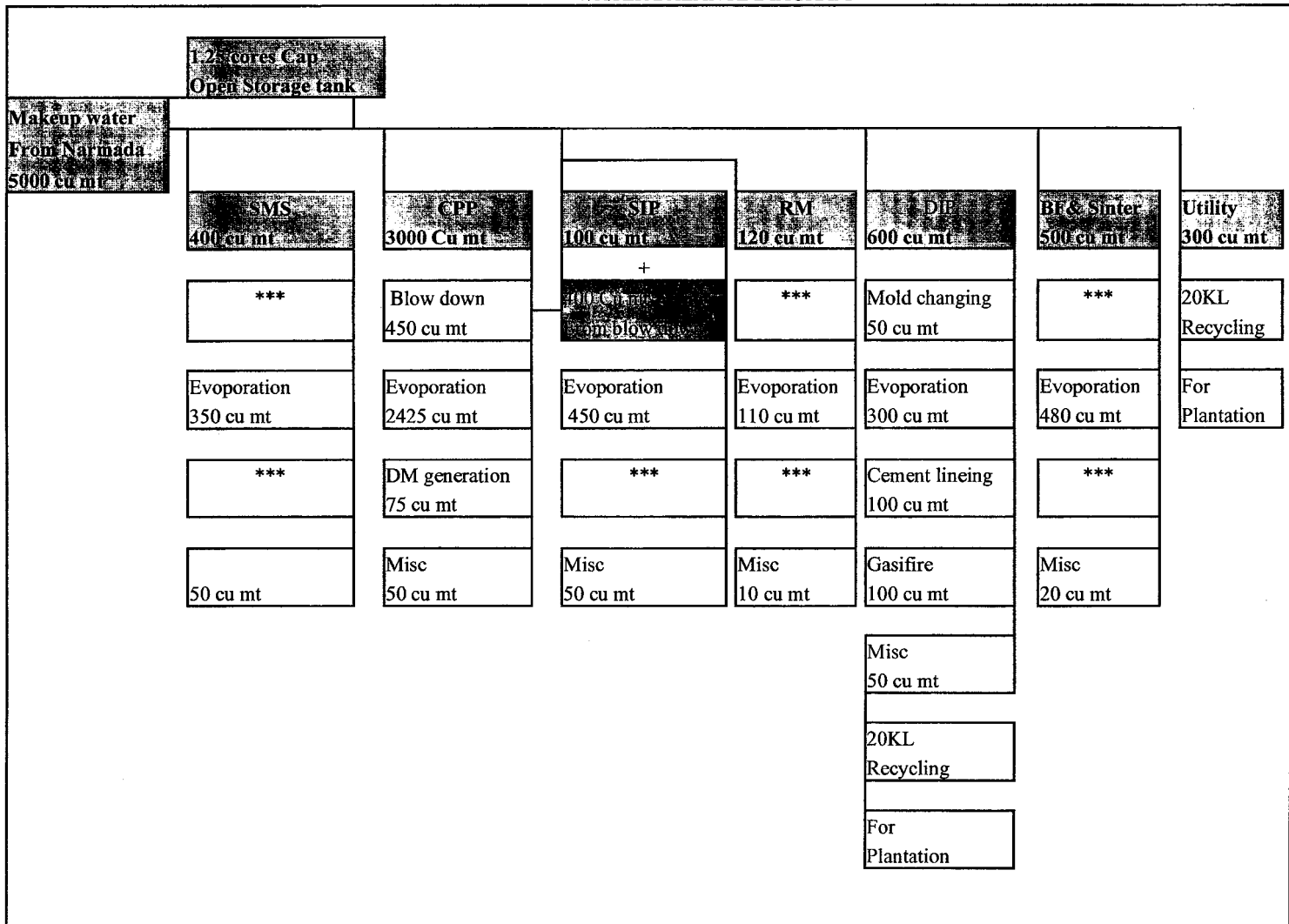
Water Consumption: 2018- 19					
Sr. No.	Month	Consumed Qty (KL)	Cooling	Domestic	Process
1	Apr-18	62411	16525	3436	42450
2	May-18	63775	17718	4548	41509
3	Jun-18	74057	23520	4606	45931
4	Jul-18	77022	20810	5482	50730
5	Aug-18	66644	10449	5797	50398
6	Sep-18	110954	47240	8080	55634
7	Oct-18	124871	60278	6878	57715
8	Nov-18	116859	57394	5847	53618
9	Dec-18	121862	60622	6568	54672
10	Jan-19	107594	51387	4621	51586
11	Feb-19	99192	48549	4963	45680
12	Mar-19	106690	53647	5558	47485
Total		1131931	468139	66384	597408

Waste water generation details from STP: 2018- 19		
Sr. No.	Month	Qty (KL)
1	Apr-18	1140.3
2	May-18	1087
3	Jun-18	1087
4	Jul-18	1136.8
5	Aug-18	1113.7
6	Sep-18	1102.2
7	Oct-18	1170.3
8	Nov-18	1019.5
9	Dec-18	1175.2
10	Jan-19	1025
11	Feb-19	847.8
12	Mar-19	847.8
Total		12752.6

Details of Water Consumption as Per Consent Application. (Per day)

Domestic	186.471KL/Day
Industrial	2993.109 KL/Day
Processing	1678.112 KL/Day
Cooling	1314.997 KL/Day
Total	3179.58 KL/Day

WATER BALANCE DIAGRAM



EFFLUENT TREATMENT PLANT**Size & Capacity of ETP**

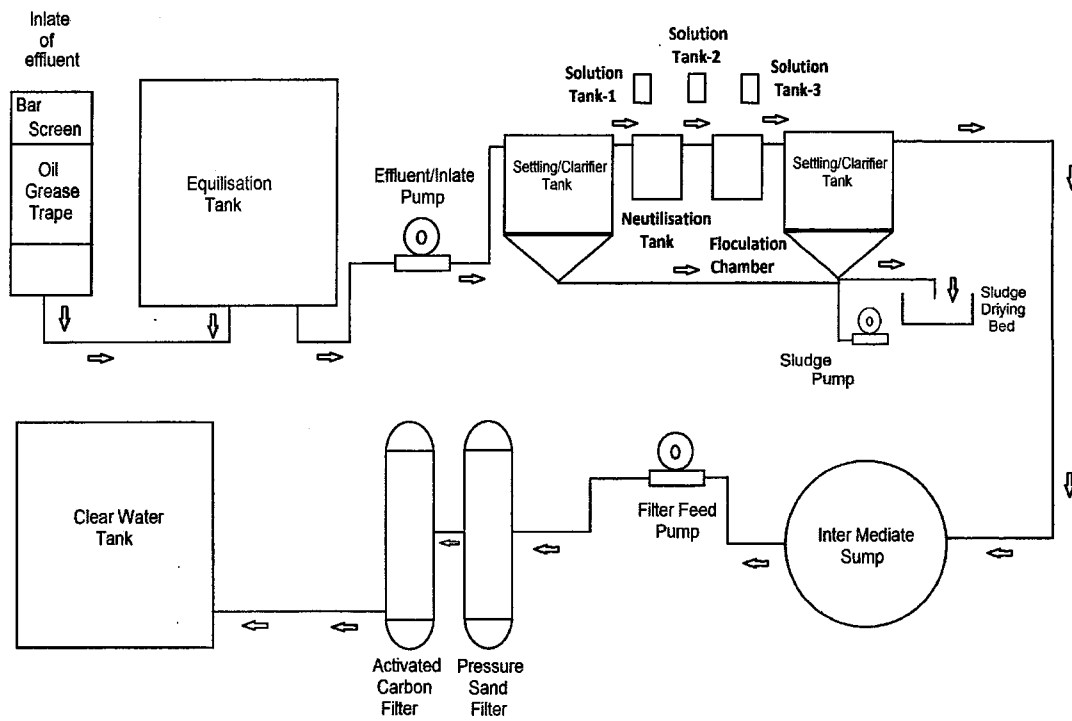
Sr. No.	Name of the Unit	No. of units	Capacity/size
1	Equalization tank	01	40 KL/RCC MAKE
2	Effluent feed pump	01	VASS ENT.
3	PH Correction dosing system	01	VASS ENT.
4	pH correction cum mixing tank	01	VASS ENT.
5	Primary tube settler	01	VASS ENT.
6	Aeration tank	01	VASS ENT.
7	Air blower(01w+01s)	02	VASS ENT.
8	Secondary tube Settler	01	VASS ENT.
9	Sludge holding	01	RCC. MAKE
10	Chlorine contract tank	01	VASS ENT.
11	Chlorine dosing tank	01	VASS ENT.
12	Filter feed pump	01	VASS ENT.
13	Multi grade filter	01	VASS ENT.
14	Activated carbon filter	01	VASS ENT.
15	Final treated water storage tank	01	RCC MAKE.
16	Electrical panel	01	VASS ENT.

Chemical Consumption at ETP

Sr. No.	Month	Qty. Kg
1	Apr-18	33.8
2	May-18	30.2
3	Jun-18	16.8
4	Jul-18	16.8
5	Aug-18	25.1
6	Sep-18	14.2
7	Oct-18	14.3
8	Nov-18	18.8
9	Dec-18	18.1
10	Jan-19	18.1
11	Feb-19	16.1
12	Mar-19	21.4
Total		243.7

Details of Power Consumption in Effluent Treatment Plant

Sr. No.	Month	Power Consumption KWH / Month
1	Apr-18	2160
2	May-18	2155
3	Jun-18	2160
4	Jul-18	2075
5	Aug-18	2100
6	Sep-18	2160
7	Oct-18	2120
8	Nov-18	2160
9	Dec-18	2145
10	Jan-19	2072
11	Feb-19	2130
12	Mar-19	2160
Total		25597

ETP Flow Diagram

ANNEXURE -8
QUALITY OF EFFLUENT

Sr. No.	Parameters	Units	GPCB Norms	1 st Visit 07- 08/06/2018	2 nd Visit 11- 12/12/2018	3 rd Visit 13- 14/02/2019
1	pH	pH Units	6.5 to 8.5	7.22	7.11	7.25
2	Colour	Pt.Co.Scale	100 units	6	10	5
3	Temperature	Centigrade	40	30	28	28
4	Total Dissolved Solids	mg/l	2100	845	880	924
5	Suspended Solids	mg/l	100	22	25	32
6	Ammonical Nitrogen	mg/l	50	2.6	3.5	2.9
7	Chlorides	mg/l	600	440	420	516
8	Sulphides	mg/l	1000	250	220	260
9	BOD (3 days 27 ⁰ C)	mg/l	30	22	19	26
10	COD	mg/l	100	68	62	74
11	Oil & Grease	mg/l	10	ND	ND	ND
12	Sodium Absorption Ratio	--	26	21	19	18
13	Total Chromium	mg/l	0.2	0.09	0.08	0.05
14	Hexavalent Chromium	mg/l	0.1	0.08	0.07	0.09
15	Copper	mg/l	1.0	ND	ND	ND
16	Cyanide	mg/l	0.2	ND	ND	ND
17	Zinc	mg/l	1.0	ND	ND	ND
18	Phenolic Compound	mg/l	2.0	ND	ND	ND
19	Bio-Assay Test	mg/l	90% survival of fish after 96 hours is 100% effluent	92%	94%	95%

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ANNEXTURE - 9
DETAILS OF ETP OPERATORS.

Sr. No.	Name	Qualification	Experience (Years)
1	Mr. Sanjay sharma	B.Sc	18
2	Mr. Nilesh dargi	B.Sc	8
3	Mr. Arjun Kamliya	B.Sc	3

ANNEXURE – 10
DETAILS OF FLUE GAS STACKS

Nos. of the flue gas stacks, their height (from ground level), nature & consumption of fuel

Sr. No.	Stack attached to	Stack height (m)	Stack Diameter (m)	Type of Fuel used	Fuel consumption (Cu. M/Day)	Pollutant
1	Reheating furnace	30 m	2.0	Furnace oil	1000 L/day	PM SO ₂ NO _x
2	Quantifier	25 m	....	....	....	....
3	AFBC Boiler 1&2 (Power Plant)	90 m	5.4	Imported coal Lignite Char Coal Waste Heat	Imported coal: 25 MT/day Lignite: 550 MT/day Char coal: 144 MT/day Waste heat: 85000 m3/day	PM SO ₂ NO _x
4	D. G set	12 m	0.3	Diesel	1800 Liter/day	PM SO ₂ NO _x
5	Rotary Kiln No. 1 (WHRB)	65 m	3.75	....	3.0 MT/Hr	PM SO ₂ NO _x
6	Induction (melting furnace) 1	30 m	2.9	Electricity	....	PM
7	Boiler	30 m	1.5	Coal	03 MT/Day	PM SO ₂ NO _x
8	Blast furnace	30 m	2.4	Cock	....	PM SO ₂ NO _x
9	Annealing furnace	30 m	0.6	FO	2700 Liter/day	PM SO ₂ NO _x
10	D.G Set KVA	12 m	0.2	Diesel	120 Liter/day	PM SO ₂ NO _x
11	Induction furnace - 2	30 m	3.0	Electricity	.....	PM
12	Sinter	30m	2.0	....	.....	PM SO ₂ NO _x

Nos. of process stacks, their height (from ground level), source, expected pollutants & the details pertaining to the provision of stack monitoring facilities.

Sr. No.	Stack attached to	Stack Height (m)	Stack Diameter (m)	Pollutant
1	Gas exits (Pilot burner stack)	30	1.0	Not Applicable
2	Gas exits (Coal crusher)	30	0.9	Not Applicable
3	Meg Convertor	16	0.8	Not Applicable
4	Zinc coating	16	0.6	Not Applicable
5	Barrel grinding and De dusting	16	0.6	Not Applicable
6	Bitumin drying oven	30	0.5	Not Applicable
7	Core cleaning section	16	0.4	Not Applicable
8	Iron ore circuit (Crusher & Screen)	25	0.5	Not Applicable
9	Stock house (Day bin)	15	0.5	Not Applicable
10	Injection coal (Transfer house)	15	0.5	Not Applicable
11	Production storage bunker (Production house)	15	1.2	Not Applicable
12	Intermediate bin & product separation bin	25	1.2	Not Applicable

ANNEXURE- 11
ANALYSIS OF STACK GAS EMISSIONS

Analysis of Process Stacks Emission:

Stack No.	Stack Attached To	07- 08/06/2018 PM (mg/Nm ³)	11-12/12/2018 PM (mg/Nm ³)	13-14/02/2019 PM (mg/Nm ³)
	GPCB Norms	50	50	50
1	SMS - 1	26	35	40
2	SMS - 2	29	32	27

Details of Flue Gas Stack Emissions:**1st Visit: 07- 08/06/2018**

Sr. No	Location	PM (mg/Nm ³)	SO _x (PPM)	NO _x (PPM)
	GPCB Norms	100	100	50
1	Annealing Furnace - 1	83	15.2	28.3
2	Blast Furnace – 1	62	13.2	13.6
3	Blast Furnace – 2	57	11.5	13.7
4	AFBC Boiler 1 & 2 (Power	60	22.3	20.1
5	Kiln – 1	79	56.2	41.2
6	Kiln – 2	78	45.6	33.5
7	Sinter Head	45	27.3	33.1
	GPCB Norms	100	40	25
8	Mg coating	48	2.1	17.6
9	Zn coating	39	2.5	12.2

2nd Visit: 11-12/12/2018

Sr. No	Location	PM (mg/Nm ³)	SO _x (PPM)	NO _x (PPM)
	GPCB Norms	100	100	50
1	Annealing Furnace - 1	75	21.6	19.1
2	Blast Furnace – 1	72	18.1	15.7
3	Blast Furnace – 2	62	18.3	14.2
4	AFBC Boiler 1 & 2 (Power	65	23.2	21.1
5	Kiln – 1	83	55.2	30.9
6	Kiln – 2	75	38.1	28.6
7	Sinter Head	53	22.3	35.1
	GPCB Norms	100	100	40
8	Mg coating	58	5.7	14.6
9	Zn coating	42	3.2	13.8

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3rd Visit: 13-14/02/2019

Sr. No	Location	PM (mg/Nm ³)	SO _x (PPM)	NO _x (PPM)
GPCB Norms		100	100	50
1	Annealing Furnace - 1	73	14.9	14.2
2	Blast Furnace – 1	65	19.7	16.4
3	Blast Furnace – 2	74	15.5	12.8
4	AFBC Boiler 1 & 2 (Power	75	25.9	18.2
5	Kiln – 1	80	46.2	27.6
6	Kiln – 2	78	38.5	29.2
7	Sinter Head	56	24.3	31.5
GPCB Norms		100	40	25
8	Mg coating	69	5.9	13.7
9	Zn coating	43	5.5	17.7

ANNEXURE- 12
AMBIENT AIR ANALYSIS REPORT

1st Visit: 07- 08/06/2018

Sr. No	Location	PM _{2.5} (µg/m ³)	PM ₁₀ (µg/m ³)	SO _x (µg/m ³)	NO _x (µg/m ³)
	GPCB Norms	60	100	80	80
1	Near Main Gate	37	55	11.2	14.9
2	At DIP Canteen	37	62	12.6	14.5
3	Near Material Gate	32	51	15.6	14.2
4	Near Oxygen Plant	36	61	11.3	14.6

2nd Visit: 11-12/12/2018

Sr. No	Location	PM _{2.5} (µg/m ³)	PM ₁₀ (µg/m ³)	SO _x (µg/m ³)	NO _x (µg/m ³)
	GPCB Norms	60	100	80	80
1	Near Main Gate	39	68	12.8	17.9
2	At DIP Canteen	30	70	16.2	15.7
3	Near Material Gate	34	55	10.1	13.9
4	Near Oxygen Plant	34	65	14.1	15.6

3rd Visit: 13-14/02/2019

Sr. No	Location	PM _{2.5} (µg/m ³)	PM ₁₀ (µg/m ³)	SO _x (µg/m ³)	NO _x (µg/m ³)
	GPCB Norms	60	100	80	80
1	Near Main Gate	37	60	8.5	16.1
2	At DIP Canteen	35	63	14.2	15.9
3	Near Material Gate	38	59	12.2	14.8
4	Near Oxygen Plant	45	58	16.9	14.8

ANNEXURE – 13
AIR POLLUTION CONTROL MEASURES

Electrotherm (India) Limited, one of India's leading steel company is one of the environmentally managed steel units. Electrotherm in under implementation of IS/ISO – 14001: 2004 international certification for **Environment Management System**

The salient features of the Environmental Management Practices adopted by the Electrotherm are as follows:

- Installation of most modern and efficient air pollution control equipment like “Glass Bag Houses” and “Electrostatic Precipitators”.
- Installation of bag filters at all transfers points to control the fugitive dust emission.
- Covered belt conveyors for handling raw material in plant premises
- Continuous water spraying at material handling sections and sprinkling of water along the road sides as well as on the roads to control the dust generation.
- Storage of raw material under the shed to stop the dust generation.
- Periodic maintenance of pollution control equipments.
- Electrotherm has established Environmental Management Division having professionals from various disciplines for monitoring of all aspects of the environment for preventive and corrective action.
- Electrotherm has established 04 Ambient Air Quality monitoring stations in premises and two in the surrounding areas to measure the ambient air quality.
- WHRB system installed in Sponge iron kiln and generated waste heat being used for power generation.
- BF waste gas is being utilized in Stove, Annealing furnace as alternative fuel.
- Adequate Stake height provided as per GPCB norms.
- Hood, cyclone and bag filter installed in furnace area for Control of fugitive & source emission during charging of material
- Lime addition with lignite coal and coke is in practice for capturing of sulfur content available in the fuels.
- 26 Nos. bag filters installed in different transfer points
- Mechanized Water sprinkling install in plant & deployed water tankers for sprinkling water on internal haul roads for controlling of fugitive emission
- Pneumatic system for handling of fly ash
- Silo for storage of the ash, internal approach roads made from RCC for controlling of ground dust, during vehicle movement

ANNEXURE 14**GENERATION AND DISPOSAL OF SOLID / HAZARDOUS WASTE**

Name Of Item:- Zinc Dust							
Sr. No.	Month	Opening Stock	Production/Other Receipt	Home Consumption	Export	Captive	Closing Stock
1	Apr-18	5.213	22.56	10.493	0	0	17.28
2	May-18	17.28	21.954	30.458	0	0	8.776
3	Jun-18	8.776	30.788	19.268	0	0	20.296
4	Jul-18	20.296	14.671	24.488	0	0	10.479
5	Aug-18	10.479	14.972	22.998	0	0	2.453
6	Sep-18	2.453	21.276	10.099	0	0	13.63
7	Oct-18	13.63	23.446	22.573	0	0	14.503
8	Nov-18	14.503	22.948	25.383	0	0	12.068
9	Dec-18	12.068	24.526	18.898	0	0	17.696
10	Jan-19	17.696	21.437	24.296	0	0	14.837
11	Feb-19	14.837	29.449	39.294	0	0	4.992
12	Mar-19	4.992	27.026	19.613	0	0	12.405

Item Name: Mg dust Waste

Brief Summary of Mg. Dust waste generation & its use: 2018- 19

Sr. No.	Month	Quantity of generate (MT)	Reuse Quantity (MT)	Quantity of sale/dispose (MT)	Name of Authorized Recycler
Opening balance- 06 MT					
1	Apr-18	3.5	3		Process waste generated from all bag houses and it's used in SINTER Plant. after aug. 2018 to change and send to TSDF site(18.03.2019)
2	May-18	3	3.5		
3	Jun-18	3.5	3		
4	Jul-18	3	3		
5	Aug-18	4	3.5		
6	Sep-18	3.5	5		
7	Oct-18	3			
8	Nov-18	3			
9	Dec-18	4			
10	Jan-19	2.5			
11	Feb-19	3			
12	Mar-19	3		1.72	
	Total	39	21		
	Opening Balance	6			
	Present	22.28 MT			

Item Name: Used Oil

Brief Summary of Used Oil generation & its use: 2018- 19

Sr. No.	Month	Quantity of Generate (KL)	Reuse Quantity (KL)	Quantity of Sale (KL)	Name of Authorized Recycler
Opening balance- 6.883 KL					
1	Apr-18	0.044	0.042		Out of Which 7.419 KL, 0.490 KL was self-reused for lubrication in Conveyor belts for transportation of raw materials. After total balance is 6.929 KL.
2	May-18	0.041	0.038		
3	Jun-18	0.039	0.038		
4	Jul-18	0.042	0.039		
5	Aug-18	0.044	0.038		
6	Sep-18	0.048	0.045		
7	Oct-18	0.046	0.038		
8	Nov-18	0.048	0.042		
9	Dec-18	0.046	0.041		
10	Jan-19	0.048	0.042		
11	Feb-19	0.042	0.04		
12	Mar-19	0.048	0.047		
	Total	0.536	0.49		
	Previous Balance	6.883			
	Total Balance	7.419			
	Total Closing Balance	6.929			

305-

Item Name: Process Waste (APCD)

Brief Summary of process dust generation & its use: 2018- 19

Sr. No.	Month	Quantity of generate (MT)	Reuse Quantity (MT)	Quantity of Sale (MT)	Name of Authorized Recycler
Opening balance- NIL					
1	Apr-18	21	20		Process dust 234.5 MT generated and reuse 104 MT and 86.18MT send to recycler. After total balance is 44.32 MT.
2	May-18	20.5	20		
3	Jun-18	21	21		
4	Jul-18	23.5	23		
5	Aug-18	20	20		
6	Sep-18	17.5	0		
7	Oct-18	21.5	0		
8	Nov-18	22.5	0	23.4	
9	Dec-18	18			
10	Jan-19	19		62.78	
11	Feb-19	16			
12	Mar-19	14			
	Total	234.5	104	86.18	
	Previous Balance	0			
	Total Balance	44.32			

Item Name: Drum/Barrels Waste

Brief Summary of Drum /Barrel waste generation & its use: 2018- 19

Sr. No.	Month	Quantity of generate (Nos.)	Reuse Quantity (Nos.)	Quantity of Sale (Nos.)	Name of Authorized Recycler
Opening balance- NIL					
1	Apr-18	80		750 Nos. sell off approved recyclers	Drum waste generated send to approved vender
2	May-18	90			
3	Jun-18	60			
4	Jul-18	70			
5	Aug-18	110			
6	Sep-18	50			
7	Oct-18	40			
8	Nov-18	60			
9	Dec-18	70			
10	Jan-19	60			
11	Feb-19	72			
12	Mar-19	65			
	Total	827		750	
	Previous Stock	0			
	Present	77 Nos.			

Details of Hazardous Waste Generation: 2018- 19

Sr. No.	Month	Generated ETP Sludge (Kg)
1	Apr-18	05
2	May-18	04
3	Jun-18	05
4	Jul-18	6
5	Aug-18	04
6	Sep-18	8
7	Oct-18	10
8	Nov-18	07
9	Dec-18	05
10	Jan-19	04
11	Feb-19	6
12	Mar-19	05
Total		69

The quantity: sources & composition of hazardous waste / solid waste from each process / sources. (The total generation of the sludge per tonne of product manufactured.)

ANNEXURE- 15
NOISE LEVEL ANALYSIS REPORT

Sr. No.	Location	GPCB Norms	07- 08/06/2018 Noise Level in dB (A)	11-12/12/2018 Noise Level in dB (A)	13-14/02/2019 Noise Level in dB (A)
1	Main Gate	75	71.3	72.3	70.5
2	TMT Storage	75	72.5	71.9	69.2
3	Sinter Plant	75	69.3	67.6	68.5
4	SMS - 1	75	70.2	71.6	71.2
5	SMS - 2	75	71.6	72.5	70.5

ANNEXURE 16**The Compliance Report With Respect To The Conditions of NOC/Consent
(Under All The Act)****CCA Compliance Report.**

**Ref: Consent order No. AWH-77789 dated 31.03.2016 & H 98296 dated 29.12.2018
valid up to 22/03/2021.**

Sr. No.	Particulars	Compliance / Action Taken																																										
1.	Consent Order No. AWH – 77789 date of Issue: 31.03.2016 . Earlier consent order No. AWH – 33396 issued vide letter number PC / AAC / - KUTCH – 294 (4) ID 17826 / 64571 dated 02 / 12 / 2010 having validity up to 26 /07/2011 shall be read as merged here with this order.	Noted.																																										
2.	The consent order No.: AWH – 77789 & AW- 91426 shall be valid up to 22/03/2021 for use of outlet for the discharge of trade effluent and emission due to operation of industrial plant for manufacture of the following items / products at Plot No. 325, Village : Samakhiyali, Tal: Bhachau, Dist : Kutch East-370 140	Noted.																																										
3.	The consent order No.: CCA Amendment order No. H – 98296 issue date 29/12/2018 shall be valid up to 22/03/2021 for use hazardous waste material proper collection, storage, disposal and trans boundary under EPA act 1986 due to operation of industrial plant for manufacture of the following items / products at Plot No. 325, Village : Samakhiyali, Tal: Bhachau, Dist : Kutch East-370 140 . <table border="1"> <thead> <tr> <th>Sr. No.</th><th>Products</th><th>Production Capacity (MTPM)</th></tr> <tr> <th></th><th></th><th>Existing</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Sponge Iron</td><td>24,000</td></tr> <tr> <td>2.</td><td>D. I. Pipes</td><td>16, 000</td></tr> <tr> <td>3.</td><td>Captive Power</td><td>WHRB 21 MWH FBC 24 MWH</td></tr> <tr> <td>4.</td><td>Pig Iron (Blast Furnace)</td><td>23,100</td></tr> <tr> <td>5.</td><td>Sinter Plant</td><td>32,400</td></tr> <tr> <td>6.</td><td>Steel Rolling Mill (TMT Plant)</td><td>52166</td></tr> <tr> <td>7.</td><td>MS Billets/ Bars</td><td></td></tr> <tr> <td>8.</td><td>Stainless steel billets(MS/SS)</td><td>25,000</td></tr> <tr> <td>9.</td><td>Alloy Nickel</td><td>416</td></tr> <tr> <td>10.</td><td>Induction Furnaces</td><td>17 sets / Month</td></tr> <tr> <td>11.</td><td>Epoxy coating TMT</td><td>52166</td></tr> <tr> <td>12.</td><td>Electric cycle and Vehicle</td><td>All model (Yo bike) 1500 sets/month E- Rickshaw & E-Winner 650 Sets/month</td></tr> </tbody> </table>	Sr. No.	Products	Production Capacity (MTPM)			Existing	1.	Sponge Iron	24,000	2.	D. I. Pipes	16, 000	3.	Captive Power	WHRB 21 MWH FBC 24 MWH	4.	Pig Iron (Blast Furnace)	23,100	5.	Sinter Plant	32,400	6.	Steel Rolling Mill (TMT Plant)	52166	7.	MS Billets/ Bars		8.	Stainless steel billets(MS/SS)	25,000	9.	Alloy Nickel	416	10.	Induction Furnaces	17 sets / Month	11.	Epoxy coating TMT	52166	12.	Electric cycle and Vehicle	All model (Yo bike) 1500 sets/month E- Rickshaw & E-Winner 650 Sets/month	Noted.
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→		SPECIFIC CONDITION :																																								
	1.	Applicant shall strictly comply with all the conditions stipulated by MOEF in the order of Environment Clearance issued vide letter No. F. No. : J/11011/503/2006-IA II (I) Dated : 20/02/2008 & vide No. F. No. J/11011/899/2008 & vide letter No. F. No.: J/11011/899/2008-IA II (I) dated 27/01/2010.		Compliance Assured.																																						
	2.	No ground water shall be used for the project coming under Dark zone without permission of competent authority.		Complied.																																						
	3.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants should be implemented.		Noted.																																						
1.		CONDITIONS UNDER THE WATER ACT :																																								
	1.1	The generation and discharge of industrial effluent from the manufacturing process and other ancillary industrial operation shall not exceed 284 m³/Day.		Compliance Assured.																																						
	1.2	The quantity of the domestic waste water (sewage) shall not exceed 30 m³/Day.		Compliance Assured.																																						
	1.3	The quality of the industrial effluent shall confirm to the following standard.		Compliance Assured.																																						
	1.4	No wastewater shall be discharged from Sponge iron plant, Sinter plant, WHRB power plant, TMT bar		Complied.																																						
	1.5	The unit shall install meters for measuring category wise consumption of water. (Category as given in Water Cass Act - 1977 schedule - II)		Compliance Assured.																																						
	1.6	TRADE EFFLUENT :																																								
	1.6.1	The applicant shall provide adequate effluent treatment in order to achieve the quality of the treated effluent as per GPCB norms mentioned in Column No-2.		Compliance Assured.																																						
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		All efforts shall be made to remove colour & unpleasant odour as far as practicable																																								
	1.6	The treated effluent conforming to the above standards shall be utilized for gardening of sprinkler in ash disposal area or used for cooling in sponge iron plant within the premises of the industry.		Complied.																																						

2.		CONDITION UNDER AIR ACT 1981 :																																																																		
	2.1	The applicant shall install & operate air pollution control system in order to achieve flue gas emission norms as prescribed below. (As per GPCB Norms, whichever is applicable)							Complied.																																																											
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		Sr. No.	Product	Stack Attached to	Stack height	Air pollution Control device	Fuel used (Qty.)	Parameter	Permissible limit	Complied.
		1	Sponge Iron	Rotary kiln Attached with WHRB (2 nos. stack)	50 m	ESP	Coal: 720 MT/day Waste heat: 64 TPH	PM SO ₂ NO _x	100 mg/Nm ³ 100 ppm 50 ppm	
		2	DI Pipe	Annealing Furnace (02 Nos)	30 m	--	Alternative Fuel from CO From Blast Furnace			
		3	Pig Iron	Blast Furnace (02 Nos.)	50 m	Bag Filters /Wet cleaning system	Cock : 95 MT/day			
		4	Sinter	Sinter Stack (02 Nos)	30 m	ESP	Coke Breeze 108 MT/day			
		5	Steel Rolling Mill	Reheating furnace	30 m	Multi cyclone	Furnace oil: 1000 Liter/day			
		6	Stainless Steel billet / Alloy Nickel	Organ Oxygen Decarbon-ization System AOD (02 Nos)	30 m	Fumes Extraction System, Cyclone Separator and Jet pulse bag filter System	Electro-cution			
		7	MS Billet	Induction furnace 02 Nos	30 m	Bag filter	Electricity			
	2.2	The process emission through various stacks/vent of reactors, process shall conform to the following standards : (As per GPCB Norms, whichever is applicable)								
		(The Existing process emissions through various stacks / vent of restores, process, vessel)								

			Sr. No.	Stack Attached To	Stack Height	Air Pollution Control Device	Parameter	Permissible Limit	Complied.
			1.	Gas exits (Pilot burner stack)	30 m	--	PM SO ₂ NOx	100 mg/Nm ³ 40 mg/Nm ³ 25 mg/Nm ³	
			2.	Gas exits (Coal crusher)	30 m	Bag filter			
			3.	Meg Convertor	16 m	Cyclone separator & Bag filter			
			4.	Zinc coating	16 m	Cyclone separator & Bag filter			
			5.	Barrel grinding and De dusting	16 m	Cyclone separator & Bag filter			
			6.	Bilurmin drying oven	30 m	--			
			7.	Core cleaning section	16 m	Cyclone separator			
			8.	Iron ore circuit (Crusher & Screen)	25 m	Cyclone separator & bag filter			
			9.	Stock house (Day bin)	15 m	Cyclone separator and bag filter			
			10.	Injection coal (Transfer house)	15 m	Cyclone separator and bag filter			
			11.	Production storage bunker (Production house)	15 m	Cyclone separator and bag filter			
			12.	Intermediate bin & product separation bin	25 m	Cyclone separator and bag filter			
		(The Proposed process emissions through various stacks / vent of rectors, process, vessel)							

		Sr. No.	Product	Stack attached to	Stack height	Air pollution control device	Parameter	Permissible limit	Complied.	
		1.	Sponge Iron	Product Storage Bunker (02 Nos.)	15 m	Cyclone Separator with Bag Filter	PM SO ₂ NO _x	100 mg/Nm ³ 40 mg /Nm ³ 25 mg /Nm ³		
		2.		Inter-mediate Bin/ Product Separation Bin (02 Nos.)	25 m					
		3.		Coal Injection (02 Nos.)	15 m					
		4.		Day Bin / Stock House (02 Nos.)	15 m					
		5.		Iron Ore Circuit (Crusher & screen) (02 Nos.)	25 m Comm-on Stack					
		6.		Coal Circuit Crusher & screens) (02 Nos.)						
		7.	Di Pipe	Magnesium Converter	16 m					
		8.		Zinc Coating	16 m					
		9.	Blast Furnace	Blast furnace (Pilot Burner Stack (02 Nos.)	20 m					--
		10.	Sinter	Crusher / Conveyor Belt transfer Stack (02 Nos.)	15 m					Bag filter
2.3	Stack monitoring facilities like porthole, platform / ladder, etc. shall be provided with Stack / Chimney in order to facilitate sampling of gases being emitted into the Atmosphere..								Complied.	

2.4	Vehicular Pollution due to Transportation of Raw Material and Finished Product shall be controlled. Proper arrangements shall also be made to control dust emission during loading and unloading of the Raw Material and Finished Product.	Complied.															
2.5	All internal Roads shall be black topped. The Roads shall be regularly cleaned with mechanical sweepers. A 3 Tier Avenue Plantation using native species shall be developed along the Roads. Facilities for Parking of Trucks carrying Raw Coal from the linked calamines shall be created within the unit.	Compliance Assured.															
2.6	Regular Cleaning & Wetting of the Ground within Premises.	Complied.															
2.7	Covered all Storage Area for Coal Handling.	Being Complied.															
2.8	Water Sprinkling systems (Mechanized & Moving) shall be installed in Plant Area.	Complied.															
2.9	Proper Arrangement shall be made to control Dust Emission during loading and unloading of the Raw Material and Finished Product.	Complied.															
2.10	All measures for the Control of Environmental Pollution shall be provided before commencing the Production.	Compliance Assured.															
2.11	Continuous Ambient Air Quality Monitoring Station shall be set – up in Steel Plant Area.	Compliance Assured.															
2.12	Continuous Stack Monitoring Facilities for all the Stacks and sufficient Air Pollution Control devices shall be provided to keep the emissions level below 100 mg/Nm ³ .	Compliance Assured.															
2.13	The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder. <table border="1"> <thead> <tr> <th>Parameter</th><th>Time Weighted Average</th><th>Concentration in Ambient Air in µg/Nm³</th></tr> </thead> <tbody> <tr> <td>Sulphur Dioxides (SO₂)</td><td>Annual 24 Hours.</td><td>50 80</td></tr> <tr> <td>Nitrogen Dioxides (NO₂)</td><td>Annual 24 Hours.</td><td>40 80</td></tr> <tr> <td>Particulate Matter (Size Less than 10 µm)</td><td>Annual 24 Hours.</td><td>60 100</td></tr> <tr> <td>Particulate Matter (Size Less than 2.5 µm)</td><td>Annual 24 Hours.</td><td>40 60</td></tr> </tbody> </table>	Parameter	Time Weighted Average	Concentration in Ambient Air in µg/Nm ³	Sulphur Dioxides (SO ₂)	Annual 24 Hours.	50 80	Nitrogen Dioxides (NO ₂)	Annual 24 Hours.	40 80	Particulate Matter (Size Less than 10 µm)	Annual 24 Hours.	60 100	Particulate Matter (Size Less than 2.5 µm)	Annual 24 Hours.	40 60	Complied.
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2.14	The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.																
2.15	The level of Noise in ambient air within the premises of industrial unit shall not exceed following levels: Between 6 A.M. and 10 P.M. : 75 dB(A) Between 6 A.M. and 10 P.M. : 70 dB(A)																
4.0	Authorization under hazardous wastes [Management, Handling & Trans boundary movement] rule, 2008.	Being Complied															
4.1	Authorization Number: AWH – 77789 and H – 98296 issue date 29.12.2018 Valid up to 22/03/2021.																

4.2	M/s Electrotherm (India) Ltd. (Sponge Iron & D. I. Pipe Plant) is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at plot No. 325, Village : Samakhyali, Taluka: Bhachau, Dist: Kutch.				Point noted and Being Complied as per facility mentioned in Stack
	Sr. No.	Type of Waste	Quantity	Schedule/ Cat	
	1	Used oil	7.31 KL	I/5.1	
	2	Process waste	675 MT	I/7.2	
	3	Drum/ barrels.	2000 Nos.	I/33.3	
	4	Zinc Dust	208 MT	I - 6.2	
	5	Magnesium Dust	252 MT	I - 6.2	
	6	Oily cotton waste	20MT/ Yr	5.2	
4.3	7	Tar containing waste	4.8 Ton/ Yr	11.3	Complied
	8	Epoxy coating	8 MT/ Yr	6.2	
4.4	The authorization is granted to operate a facility for collection & storage within factory premises, transportation and ultimate disposal of hazardous waste at TSDF site of M/s. Saurashtra Enviro Projects Pvt. Ltd., located at : Survey No.: 415, 417, 418, Village : Juna – Kataria, Taluka : Bhachau, Dist.: Kutchh or by selling out to registered recyclers.				Compliance assured
4.5	TERMS AND CONDITIONS OF AUTHORIZATION :				
	a) The applicant shall comply with the provisions of the Environment (Protection) Act				Compliance

	1986 and rules made there under.	assured
	b) The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.	Noted
	c) The persons authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.	Noted
	d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.	Noted
	e) It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.	Noted
	f) An application for the renewal of an authorization shall be made as laid down in rule 7.	Compliance Assured
	g) Industry shall submit annual report within 15 days and subsequent by 31 st January every year.	Noted
	h) Hazardous waste shall be disposed off in accordance with the haz. Waste (Management, Handling & Transboundary Movement) rules, 2008 and unit shall have to obtain authorization of this board for all applicable categories of waste.	Compliance assured
5.	GENERAL CONDITION	
5.1	Any change in personnel, equipment or working condition as mentioned in the consent form/ order should immediately be intimated to this board.	Compliance Assured.
5.2	Applicant shall also comply with the general conditions given in annexure – I	Compliance Assured.
5.3	The waste generator shall be totally responsible for (i.e Collection, Storage, Transportation and ultimate disposal) of the wastes generated.	Compliance Assured.
5.4	Records of the waste generation, its management and annual return shall be submitted to GPCB in form – 4 by 31 st January of every year	Compliance Assured.
5.5	In case of any accident details of the same shall be submitted in form - 5 of GPCB	Compliance Assured.
5.6	As per “Public liability Insurance Act – 91” company shall get insurance policy, if applicable.	Complied
5.7	Empty drums and containers of toxic and hazards material shall be treated as per guidelines published for “management & Handling of discarded container”. Records of same shall be maintained and forwarded to GPCB regularly.	Compliance Assured.
5.8	In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority	Compliance Assured.
5.9	In case of transport of hazardous waste to a facility for (i.e treatment, storage and disposal) existing in a state other than the state where hazardous waste are generated the occupier shall obtain “ No objection certificate” from the state pollution control board, the committee of the concerned state or union territory administration where the facility exists.	Compliance Assured.
5.10	Unit shall take all concrete measures to show tangible results in waste generation	Compliance

	reduction avoidance reuse and recycle. Action taken in this regards shall be submitted within 03 months and also along with form 4.	Assured.
5.11	industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon Supreme Court's order in W. P no. 657 of 1995 dated 14 th October – 2003.	Compliance Assured.
5.12	Industry shall have to display on line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.	Compliance Assured.

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ANNEXURE – 17
HAZARDOUS CHEMICALS

Details of Hazardous Chemicals Are As Under:

Sr. No.	Name of Chemical	Type of Container / Bag	Capacity (MT)
1	HCl	Tank	02 KL
2	FO	Tank	05 KL
3	Diesel	Tank	18 KL

The unit has established onsite off site emergency plan to provide safety in the premises. Copy of the plan is attached.

ANNEXURE – 18
ON SITE – OFF SITE EMERGENCY PLAN

Risk Assessment and environmental management plan

General

In spite of various preventive and precautionary measures taken in the plant, the possibility of mishap cannot be ruled out. Accidents can occur in any industry in spite of all efforts to prevent them. Frequently they give rise to suffering and damage, the extent of which is determined by the potential for loss surrounding the event. Many parts of the industries have a high potential for loss and there have been cases, where the loss, measured in both human and monetary terms, has been severe, it is equally true to say that there have been other cases where because of effective action at the time, the full potential loss has been largely avoided, effective action, in these cases have been possible due to the existence of a preplanned and practiced procedure for handling major emergencies utilizing the combined resources of the industry and the outside services.

M/s. Electrotherm India Ltd. is aware of their obligation to protect all persons at worked and others in the neighborhood, who may affected by an unfortunate incidence occurring if any at its unit.

Any hazard either to employees or others, arising from activities at the industrial unit shall as far as possible, be notified, warned and steps taken to handle and prevent escalation by procedures contained herein.

It will be the responsibility of senior most persons present to make an initial assessment of emergency.

1. Instruction

A major emergency in the plant is one, which may cause serious injury or loss of life and damage to the property. This On-site Emergency Plan explains the code of conduct of all personnel in the plant along with the action to be carried out in the event of not only defines responsibilities but also informs about prompt rescue operations.

The emergency procedures outlined are suitable for round the clock coverage including holidays. This emergency procedure shall be followed as outlined in this DMP during general shifts as well.

A. Definition of Emergency

An emergency may be defined as sudden occurrence of such magnitude so as to bring about a disruption in the normal activities inside plant with a potential cause to injury, loss of life, damage to property within or outside the working premises.

B. Potential Emergency Situation

Considering the location and the type of activities carried out on site, four different types of emergency situations are envisaged for drawing up this plan:

- Fire explosion or toxic release.
- Accidents involving human beings or property.
- Emergency situations due to social reasons such as public unrest, terrorism etc.
- Natural Calamities/ disasters such as cyclones and consequent flooding.

C. Emergency Situations

Broadly the emergency situation can be classified in two categories

1. Localized Emergency Situation (site specific) in which the area surrounding the site would be evacuated.
2. Generalized Emergency situation in which whole plant would have to be evacuated.

Accident, fire, Explosion, Commotion will be considered as localized emergency situation in which security people will be called and they will be try to control the situation with the help of the site personnel (siren blowing may not be necessary)

2. Objective

All the aforesaid situations cannot be anticipated, since there are many factors like nature of product, human error, equipment failure, act of God, environmental risk etc. it may be noted that the rescue activity, to save life and property must be given overriding priority.

The DMP, the objective of which is to tackle such emergencies is based on the concept of comprehensive emergency management e.g. one must, not only manage the emergency effectively but also plan to prevent for, respond to and recover from such situations.

The plan provides an organizational and procedural framework.

- To control the emergency,
- To properly co- ordinate between the Jetty, government, emergency departments, mutual aid member's etc.
- To protect life a properly of Jetty, neighboring organization and environment.
- To avoid confusion, panic and to handle the emergency with clear-cut action
- To make head count and carry out rescue operations.
- To treat the injure persons.
- To preserve record and to take steps to prevent recurrence.
- To restore normalcy.

The quantitative and qualitative efforts to control a disaster do vary, depending upon the activities. However the activities required as per the plan can be grouped into the following four stages:

Prevention: Steps to eliminate/ minimize probability of a disaster.

Preparedness: Measures to accomplish optimum readiness so that the response to an emergency is swift and effective.

Response: Activities carried out during an emergency to prevent loss of life and minimize damages in the jetty/ surroundings.

Recovery: Activities for restoring normally.

Priority of emergency Protection:

1. Life safety
2. Preservation of property
3. Restoration of normally.

1. Procedures

a) Reporting

The primary reporting point for emergency, such as an injury, fire or gas leak, is the emergency Control Center (ECC) (i.e. time Office) to the time keeper to the best of your ability, provide the following information.

- Location
- Type of Emergency
- Degree of emergency (potential or actually happening?)
- Extent of injuries (if any)
- Current situation

b) Personal Injury or Sudden Illness

1. Preparation

A. ECC will maintain a list of those personal trained and currently qualified to provide first-aid. At least two such personnel should normally be available during office hours.

B. First-aid kits will be positioned and maintained at appropriate locations.

2. Response

A. The first person on the scene should, when able, notify or have someone notify the Timekeeper, ask the Timekeeper to call for outside medical assistance, as required.

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B. The Timekeeper will notify any available first aiders.

1. On- scene

A. Provide appropriate aid and comfort. Move a seriously injured person under the supervision of a person trained in first- aid. Position people to direct arriving responders as needed. All other personnel should remain clear of the area.

C. Facility Emergency (Fire, explosion)

1. Preparation

- a. Security department will survey quarterly for the adequate and state of firefighting equipment and controls such extinguisher, shutdown controls and alarms.
- b. Maintenance dept. will clearly mark the major shutdown controls for electricity, water and gas, fuel handling system.
- c. The supervisor/ engineer closest to the area of the shutdown controls will ensure that all personnel in that area are familiar with the location and operation of the controls.

2. Response

- a. The person first noticing a hazardous condition (fire, gas leak or explosion) will immediately notify the people in the surrounding area and ensure notification of the Timekeeper.
- b. If the fire is small enough and the person has been trained in its use, a fire extinguisher may be used to put out the fire. If in doubt, EVACUATE.
- c. The timekeeper will immediately announce over the PA system. "THERE IS A (FIRE, GAS LEAKAGE, EXPLOSION) IN THE (PART OF THE BUILDING) PLEASE EVACUATE." Repeat THREE times.
- d. The Timekeeper will when notify the Fire/Security department (and utility department) as necessary.

3. Evacuation

- a. Upon hearing the announcement of the emergency, unless actually involved in controlling the fire or leak, all personnel in the building will evacuate through the nearest SAFE exit to the Assembly point. While evacuation, check to see if rooms are occupied to ensure that all personnel, especially visitors, contractors are also evacuating the building. After ensuring that rooms are empty, close the door to reduce drafting of the fire or the gas.

- b. Supervisors/ Engineers should perform a head count of the personnel in their areas to ensure that everyone has evacuated safely.

4. On-scene Control Center

- a. The site controller on the scene shall assume control of _____ evacuated personnel and the emergency response.
- b. Upon arrival of the emergency responders, advise them of the situation, layout of the building, shut off controls, etc.

5. All Clear/ Reconstitution

- a. After confirmation by the emergency responders, the security team will clear personnel to return to the building, remove vehicle, or being clean-up activities DIRECTION INCLUDING WHAT CAN AND WILL BE DONE SHOULD BE ABSOLUTELY CLEAR.
- b. If damage is sufficient to require reconstitution or resumption of business at another site, the site controller will communicate with the Dy. Chief Controller and will establish a telephone chain for passing on information.

6. Natural Disaster (tornado, heavy thunderstorm, blizzards, ice storm of flood threat): Earth quake shakes.

1. Notification

- a. Anyone hearing of a natural disaster warning or situation should inform ECC at the earliest.

2. Response

- a. If appropriate, the Timekeeper really the warning signal through PA system
- b. Under cyclonic storm warnings and when outside either conditions continue to Detroit the Timekeeper will broadcast the following: "A CYCLONING STROM WARNING IS IN EFFECT FROM OUR AREA. ALL PERSONNEL PLEASE ASSEMBLE IN THE ASSEMBLY POINT."
- c. Upon hearing the warning, all personnel will move quickly to the assembly point, close the doors you passed by.
- d. If thunder storm, cyclonic storm or potential flooding pose a hazard, the chief/ Dy. Chief Controller will consider:
 - i. Shutting off conveyors, all computers, utilities or other equipments.
 - ii. Early disposal of all personnel.
 - iii. All clear.

e. The site Controller will be responsible for determining when the threat has passed and advising everyone to return to work or depart for the day.

d. Illegal Civil Activities(theft, bomb threat or civil disturbance)

1. Notification

a. Anyone having any knowledge of an illegal activity affecting the Plant should inform the site in-charge.

2. Response

a. If appropriate, the site controller should relay the information on the situation over the PA system .

b. If a bomb or other threat is received, the Timekeeper will inform the Chief Controller.

c. The Timekeeper will notify the Police and/or emergency services, as appropriate.

3. Evacuation-Reconstitution

- Evacuation through Reconstitution will be the same above.

7. Hazard Assessment

The purpose of Hazards assessment is to identify such hazards, which could be dangerous of Human lives and/or could damage the property.

The Hazard shall be identifies as:-

- ♦ Point And Place Wise Hazards:
- ♦ Structural Stability Hazard:
- ♦ Natural Disaster

7.1 Point And Place Wise Hazards

7.2 Structural Stability Hazard

By looking in to the geographical situation of the plant is the most important aspect from the safety point of view as the rate of the corrosion is very rapid.

It is advisable to obtain a Stability Certificate form the competent person as well s get all the metallic structures check by the competent person at least once in five years.

8. Natural Disaster

Lightening: All the structures like preheater, Clinker silo, Cement silo, Chimneys, Core Building etc. should have lightening arrester to earth the lightning stroke effectively, it is very Important that it should be checked periodically for its effectiveness i.e. earth resistance (elect. Conductivity)

9. Action Plan To Prevent Major Emergencies

- ◆ Preventive maintenance schedule shall be prepared for all critical equipment, safety devices etc. with a fixed responsibility, testing, checking and verification reports with a fix responsibility of person and duration of period.
- ◆ Logbook shall be prescribed for time bound inspection, testing, checking and verification reports with a fix responsibility of person and duration of period.

10. Identification Of Hazardous Areas

- ◆ Preheater section
- ◆ Coal storage area(Coal yard)
- ◆ Compressor houses Lubricant store
- ◆ Industrial canteen
- ◆ Switch yard
- ◆ Belt conveyor

11. Emergency Control Centre (ECC)

For the purpose of handling Emergency (Generalized), the Time Office (TO) at the Factory Main Gate is declared as the Emergency control Centre (ECC). CCR will be an alternative ECC.

However, Office of shift In-charge in Main and Control Room in the captive Berth will be acting as an On-scene Emergency Control Centre.

The personal Protective Equipment (Safety belt, helmet, face shield, Goggles, Hand gloves, Barricaded tape etc.) Fire Suit, Breathing Apparatus will be kept in the ECC (TO) & will be shifted to the spot of emergency depending on the requirements.

12. Organization and Responsibilities**12.1 Chief Controller:**

- On getting information about the emergency he proceeds to the emergency Control Centre and takes the overall charge of all the activities for dealing with the emergency.

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- He remains in the ECC till the emergency is called off so that all concerned are aware of the location of his availability during the emergency.
- He communicate and co-ordinate amongst various Team Leaders.
- He is the final authority on all matters related with Management of emergency such as firefighting, emergency control, rescue operations, calling outside agencies for assistance welfare, evacuation, transportation, rehabilitation, liaison, public relation etc.
- He contacts all mutual aid agencies for their help if he is in opinion/ feels that site controller fail to control the emergency like major fire etc.

12.2 Deputy Chief Controller:

1. He assists the Chief Controller.
2. He assumes charge of the Chief Controller in his absence.
3. He will ascertain with the and Site Controller whether fire station/ security have been informed and rush to the scene of the emergency.
Ascertain whether any person is trapped inside and arrange for his/her rescue.
4. Informed medical centers as well as residence in case of necessity on telephone number 5258 (D) and P&T number 245362. (D), P&T number 245130 (R).
5. Execute all job to control the emergency such a diversion of the process form other areas, arrange for removal of combustibile/ inflammable/ explosive chemicals, brumes, begs, cartoons etc. from the scene of the emergency.
6. Shutdown process/ operation or loading/ unloading activities.
7. Direct the fire and rescue team.
8. Arrange to inform promptly about the emergency to Chief Controller/ Site controller.
9. He will ask for Assistance from the Engineers/ Supervisors of operation and maintenance department present in the shift for rendering service as may be required for the effective control of the situation.
10. He will communicate and co-ordinate various activities with the supervisors.
11. He will also take full responsibility of the following.
12. Supplying cranes, lifting tackles, welding/gas cutting accessories, trucks, tool or material that may be needed for the control of the emergency operation in liaison with the Site Controller.

12.3 Site Controller:

1. Co-ordinate the activities of all the teams.
2. Evaluates the safety had health hazards,
3. Co-ordinates the transport services, arrange for temporary shelter in consultation with the Liaison Officer.

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4. He rushes immediately to the scene of the emergency, select and set up the appropriate emergency equipment. He takes the following action at the earliest, if the emergency is not controlled.
5. Report to the Chief Controller/ Dy. Chief Controller about the emergency.
6. Calls the security personnel from their residence for additional manpower if required,
7. Make available extra security personnel for residence for maintaining law and order.
8. Regulates entry and exit of personnel required for controlling the fire/ Chief Controller.
9. Restrict entry of the person other than authorized by the Chief Controller/ Dy. Chief Controller.
10. Direct the firefighting operations/ emergency control.
11. Takes command of the fire team.
12. Arrange of PPE required for emergency.
13. Takes all possible steps necessary to control the emergency.
14. Calls the local fire Brigade and Police in case of necessity in consultation with the Chief Controller/ Dy. Chief Controller.
15. Provides transport for evacuation of personnel in case the area is to be evacuated.
16. Works in consultation with the Dy. Chief Controller.
17. Takes responsibility of law and order and keeps a liaison with Police and fire Brigade.
18. He collects and disseminates information is require to all concerned.
19. He keeps detailed record of the incident and progress of operations to fight the emergency.
20. In case of power failure/ Telephone services disruption he arranges for messenger for purpose of communications.

12.4 Liaison Officer:

1. Maintains liaison with the press, government agencies and neighborhood regarding the emergency under the instructions from the Chief Controller/ Dy. Chief Controller.
2. Discloses all the necessary information in the jetty so as to avoid rumors and confusion.

12.5 Medical Officer:

1. He assumes complete responsibility of providing medical assistance and treatment during the emergency.
2. He provides and arranges for ambulance service and medical facilities form outside agencies and hospitals, if so required.

12.6 Medical/ Welfare Team:

1. This Team is responsible for providing first Aid and canteen facilities such as tea/ coffee and snacks to the injured as and when required.
2. The leader on receiving the emergency information will mobilize his team and rush to the site of the emergency and reports to the Chief/ Dy. Chief Controller.
3. Some of the team members accompany the injured to the Medical Centre.
4. Any insured person brought to the ECC/ Medical Centre is attended by the first aiders. If the numbers of injured persons are more, the team does not move out of the Medical Centre till the emergency is over. They will keep continuous communication with the Dy. Chief Controller and direct the injured to the outside hospital if necessary.
5. In case where hospital treatment is required, the leader arranges for transport through the site controller and informs the hospitals in advance so that they are prepared for the emergency.
6. They list the names of all the injured persons to whom treatment has been given and other who have been direct to the hospital.

12.7 Rescue/ Evacuation Team:

1. This team directly fights the emergency under the instruction from Dy. Chief Controller.
2. On hearing the emergency the group leader establishes communication with Dy. Chief Controller and start handling the emergency directly.
3. He takes the help of security team to cordon off the area.
4. He ensures that the emergency does not escalate, but it is contained within the spot of occurrence.
5. The leader mobilizes his team and establishes contact with the Liaison Officer, regarding manpower accounting and starts the search operations, if required.
6. He is also responsible for the head account at the Assembly Point.

12.8 Engineering Team:

1. The team ensures that the remaining part of the plant is safe.
2. The leader of the team will cease the manufacturing activities in consultation with the Dy. Chief Controller/ Side Controller.
3. Carries out civil work that may become necessary during the emergency.
4. Remains in continuous touch with the Dy. Chief Controller.
5. Carry out necessary repairing of the communication system.
6. Mobilize necessary tools and tackles to handle any repair work on emergency basis.

12.9 Security/ Fire Team:

1. Assist the Site Controller in carrying out his duties.

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2. On hearing the siren, the team ensures that the main gate is closed and movement restricted.
3. The team leader arranges to provide security coverage at the main gate, site of occurrence of emergency.
4. The team effectively cordons off the emergency area and prevents unauthorized people entering the scene.
5. Fire Engine or Ambulance requisitioned by the Site Controller/ Medical Officer is to be permitted inside the plant.
6. Other officers from state Government or Local Authorities should be courteously conducted to the Reception room and the Liaison officer is informed, so that they can be taken care off.
7. The team leader will ensure that all Vehicles carrying H.S.D./L.D.O. or any other flammable or explosive material are being sent outside the factory gate and parked to far off the factory.

12.10 Time Keeper:

1. On hearing the siren/ emergency alarm, he immediately contacts Chief Controller and other Team Leader of the DMP.
2. On the advice of the side controller call the local fire brigade or police during the emergency.
3. Operator should follow instructions only from Chief Controller/ Dy. Chief Controller.
4. He keeps the telephone free for urgent communications.

ANNEXURE – 19
OBSERVATIONS & SUGGESTIONS

- Waste water generation is in term of cooling tower blow down and boiler blow down and same will be utilized for dust suppression and water sprinkling within premises.
- Unit has installed MAMBRANE TYPE -Aeration system is for improving performance of ETP.
- Mill Scale/slag is being used in the low line area for the filling of soil. Process waste(Dust) is Stored for the future use in manufacturing of bricks
- Maintenance of data was found quite systematic and good.
- The unit has prepared onsite off site emergency plan.
- In general, the housekeeping inside the factory premises is satisfactory; however there is still further scope of improvement in this area.
- Ambient Air Quality measurement stations are provided. Ambient air quality complies with the stipulated norms.
- The unit has provided adequate safety gadgets to the workers. The workers should be trained and encouraged to use such gadgets.
- Unit has ISO 9001: 2008 & ISO 14001, OHASA 18001 & ISO 50001.

APPENDIX - 1
C. C. & A.

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY R.P.A.D.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 & as amended from time to time framed under the Environment (Protection) Act-1986 board has granted the Consent order board has granted the Consent order AWH-39212 vide letter No. PC/CCA-KUTCH-250/GPCB ID: 29685/62672 dated 03-11-2010 for a validity up to 11-05-2015

And whereas Board has received application vide Inward I.D.NO.104027 dated 12-02-2016 for the renewal of Consolidated Consent and Authorization (CC & A) of this Board and under the provisions/rules of the aforesaid acts. Consents & Authorization are hereby further amended as under:

CONSENTS AND AUTHORISATION:

(Under the provisions /rules of the aforesaid environmental acts)

To,

M/s.Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant),

Plot No: 325,

Village: Samakhlyali,

Taluka: Bhachau,

Dist: Kutch East- 370 140.

1. Consent Order No.: AWH - 77789....Date of decision.... 31/03/2016.
2. The consent order shall be valid up to 22/03/2021 for use of outlet for manufacturing of the following items/ products at Plot No: 325, Village: Samakhlyali, Taluka: Bhachau, Dist: Kutch East- 370 140.

NO.	PRODUCT		PRODUCTION CAPACITY(MT/M)
1	Sponge Iron		24,000
2	D.I. Pipes		16,000
3	Captive Power	WHRB	21 MWH
		FBC	24 MWH
4	Pig Iron (Blast furnace)		23,100
5	Sinter Plant		32,400
6	Steel Rolling Mill(TMT Plant)		52166
7	MS Billets/Bars		
8	Stainless steel billets		25000
9	Alloy Nickel		416
10	Induction Furnaces		17 Sets/Month
11	Electric cycle & vehicles	All Model (Yo Bike)	1500 sets/Month
		E-Rickshaw & E. Winner	650 sets/Month

1

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SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS:

1. Applicant shall strictly comply with all the conditions stipulated by MoEF in the order of Environment Clearance issued vide letter no. F.No.J-11011/503/2006-IA II (I) dtd. 20/02/2008 & vide letter no. F.NO J/11011/899/2008-IA II (I) dtd. 27/01/2010.
2. No ground water shall be used for the project coming under Dark zone without permission of competent authority.
3. All the recommendation made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel Plants should be implemented.

1. CONDITIONS UNDER WATER ACT 1974:

- 1.1 The generation and discharge of industrial effluent from the manufacturing process and other ancillary Industrial operations shall not exceed **284 m³/Day**.
- 1.2 The quantity of the domestic waste water (Sewage) shall not exceed **30 m³/Day**.
- 1.3 The quality of the Industrial effluent shall confirm to the following standards

PARAMETER	PERMISSIBLE LIMIT
pH	6.5 to 8.5
Temperature	40°C
Colour (pt.co. scale units)	100 units
Suspended Solids	100 mg / l
Oil & Grease	10 mg / l
Phenolic Compound	01 mg / l
Ammonical Nitrogen	50 mg / l
BOD (3Days at 27 °C)	30 mg / l
COD	100 mg / l
Chlorides	600 mg / l
Sulphates	1000 mg / l
Total Dissolved Solids	2100 mg / l
Sodium Absorption Ratio	26
Percent Sodium	60 %
Sulphides	02 mg / l
Total Chromium	02 mg / l
Hexavalent Chromium	0.1 mg / l
Copper	03 mg / l
Lead	0.1 mg / l
Mercury	0.01 mg / l
Nickel	03 mg / l
Zinc	05 mg / l
Cadmium	02 mg / l
Cyanides	0.2 mg / l
Arsenic	0.2 mg / l



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Fluorides	02 mg / l
Insecticides / Pesticides	Absent

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

1.4 No wastewater shall be discharged from sponge iron plant, Sinter plant, WHRB power plant, TMT bar plant, DI pipes and induction/arc furnace. The wastewater generated from power plant will be treated and used for dust suppression and green belt development within premises only.

1.5 The unit shall install meters for measuring category wise (Category as given in Water -Cess Act-1977 schedule II) consumption of water.

1.6 The treated effluent conforming to the above standards shall be utilized for gardening or sprinkled in ash disposal area or used for cooling in sponge iron plant within the premises of the industry.

1.7 The quality of the sewage shall conform to the following standards.(As per GPCB Norms, whichever is applicable).

PARAMETER	PERMISSIBLE LIMIT
BOD (5 days at 20° C)	20 mg/liter
Suspended Solid	30 mg/liter
Residual Chlorine	Minimum 0.5 mg/liter

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

1.8 The unit shall install meters for measuring category wise (Category as given in Water -Cess Act-1977 schedule II) consumption of water.

2. CONDITIONS UNDER AIR ACT 1981:

2.1 The flue gases emission through various stacks/vent of DG sets /boiler / furnace / heater shall conform to the following standards:

Sr. no.	Stack attached to	Stack height in Meter	Air Pollution Control System	Fuel used and its Quantity	Parameter	Permissible limit
1	Reheating furnace	30	Bag filter	Furnace oil:1000 liter/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
2	Quantifier	25	--	--		
3	AFBC Boiler 1 & 2 (Power plant)	90	ESP	Imported coal:25MT/day, Lignite:550MT/day, Char coal:144MT/day, Waste heat:85000m ³ /day		
4	D.G set	12	--	Diesel:1800Liter/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
5	Rotary Kiln No.1(WHR 8)	65	ESP	3.0MT/hr		
6	Boiler	30	Dust collector	Coal 03 MT/day		

3

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7.	Blast furnace	30	Bag Filter with Gas Cleaning Plant	Coke		
8.	Annealing furnace 30	30	—	FO:2700 Liter/hour		
9.	D.G Set 1000 KVA	12	—	Diesel:120 Liter/day		
10.	Induction (melting Furnace)1	30	Cyclone separator and bag filter	Electricity	PM	50 mg/NM ³
11.	Induction Furnace 02	30	Cyclone separator and bag filter	Electricity		
12.	Rotary Kiln Attached with WHRB (2 nos. stack)	50	ESP	Coal:720 MT/day, Waste Heat: 64TPH	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
13.	Annealing Furnace (02 Nos)	30	—	Alternative Fuel from CO from Blast Furnace		
14.	Blast furnace (02 Nos)	50	Bag Filters/Wet cleaning system	Coke:95MT/day	P M SO ₂ NOx	100mg/NM ³ 100 ppm 50 ppm
15.	Sinter Stack (02 Nos)	30	ESP	Coke Breeze 108 MT/day		
16.	Reheating furnace	30	Multi cyclone	Furnace oil: 1000 Liter/day		
17.	Organ Oxygen Decarbonization System AOD (02 Nos)	30	Fumes Extraction System, Cyclone Separator and Jet pulse bag filter System	Electricity		
18.	Induction furnace (02 Nos)	30	Bag filter	Electricity	PM	50mg/NM ³



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2.2 The Process emission through various stacks/vent of reactors, process vessel shall conform to the following standard:

Sl. no.	Stack attached to	Stack height in meters	Air Pollution Control System	Parameter	Permissible limit
1	Gas exits (Pilot burner stack)	30	—	P M	100
2	Gas exits (Coal crusher)	30	Bag Filter	SO ₂	mg/NM ³
3	Meg Convertor	16	Cyclone separator & Bag filter	NO _x	40 mg/NM ³ 25 mg/NM ³
4	Zinc coating	16	Cyclone separator & Bag Filter		
5	Barrel grinding and De dusting	16	Cyclone separator & Bag Filter		
6	Bilumin drying oven	30	—		
7	Core cleaning section	16	Cyclone separator		
8	Iron ore circuit (Crusher & Screen)	25	Cyclone separator & Bag Filter		
9	Stock house (Day bin)	15	Cyclone separator & Bag Filter		
10	Injection coal (Transfer house)	15	Cyclone separator & Bag Filter		
11	Production Storage bunker (Production house)	15	Cyclone separator & Bag Filter		
12	Intermediate bin & product separation bin	25	Cyclone separator & Bag Filter		
13	Product Storage Bunker (02Nos)	15	Cyclone separator & Bag Filter		
14	Intermediate Bin/Product Separation Bin (02 Nos)	25	Cyclone separator & Bag Filter		
15	Coal Injection (02Nos)	15	Cyclone separator & Bag Filter		
16	Day Bin/Stock House (02 Nos)	15	Cyclone separator & Bag Filter		
17	Iron Ore Circuit (Crusher & screen) (02Nos)	25m Common Stack	Cyclone separator & Bag Filter		
18	Coal Circuit (Crusher & screen) (02Nos)				
19	Magnesium Convertor	16	Cyclone separator & Bag Filter		
20	Zinc Coating	16	Cyclone separator & Bag Filter		
21	Blast furnace (pilot Burner Stack 02 Nos)	20	Cyclone separator & Bag Filter		

5

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22	Crusher/Conveyor Belt transfer Stack (02 Nos)	15	Bag Filter		

- 2.3 Stack monitoring facilities like porthole, platform/ladder etc. shall be provided with stacks/vents chimney in order to facilitate sampling of gases being emitted into the atmosphere.
- 2.4 Vehicular pollution due to transportation of raw material and finished product shall be controlled. Proper arrangements shall also be made to control dust emissions during loading and unloading of the raw material and finished product.
- 2.5 All internal roads shall be block topped. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using native species shall be developed along the roads. facilities for parking of trucks carrying raw coal from the linked calamines shall be created within the Unit.
- 2.6 Regular Cleaning & wetting of the Ground within premises.
- 2.7 Covered all storage area for coal handling.
- 2.8 Water sprinkling systems (mechanized & moving) shall be installed in plant area.
- 2.9 Proper arrangement shall be made to control dust emission during loading & unloading of the raw material & finished products.
- 2.10 All measures for the control of environment pollution shall be provided before commencing production.
- 2.11 Continuous Ambient air quality monitoring station shall be set up in Steel Plant area.
- 2.12 Continuous stack monitoring facilities for all the stacks and sufficient air pollution control devices shall be provided to keep the emissions level below 100 mg/NM³.
- 2.13 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder as per national Ambient Air Quality Emission Standards issued by Ministry of Environment and Forest dated 16th November-2009.

Sr. No.	Pollutant.	Time Weighted Average	Concentration in Ambient air in $\mu\text{g}/\text{M}^3$
1.	Sulphur Dioxide (SO ₂)	Annual 24 Hours	50 80
2.	Nitrogen Dioxide (NO ₂)	Annual 24 Hours	40 80
3.	Particulate Matter (Size less than 10 μm) OR PM ₁₀	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5 μm) OR PM _{2.5}	Annual 24 Hours	40 60

- 2.14 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.



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2.15 The level of Noise in ambient air within the premises of industrial unit shall not exceed following levels:

Between 6 A.M. and 10 P.M. : 75 dB(A)

Between 10 P.M. and 6 A.M. : 70 dB(A)

4. Authorization under Hazardous Waste [Management, Handling & Transboundary Movement] Rules, 2016.

4.1 Authorization Number: AWH-77789 Valid up to 22.3.2021

M/s. Electrotherm (INDIA) Limited (Sponge Iron & DI Pipe Plant) is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated Plot No - 325, Village: Samakhiyali, Taluka: Bhachau, Dist: Kutch - 370 201.

Sr. No.	Waste	Quantity per Year	Category	Facility
1.	Used Oil/Spent Oil	7.31 KL	5.1	Collection, Storage, Transportation and disposal by utilized for Lubrications of machines & remains & selling out to registered recyclers/ reprocessor
2.	Process Waste	675 MT	7.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
3.	Discarded Container	24 Nos	33.3	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
4.	Zinc Dust	108 MT	6.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch
5.	Magnesium Dust	252 MT	6.2	Collection, Storage, Transportation and disposal at TSDF site of M/s Saurashtra Enviro Projects Pvt. Ltd, located at Survey No 415,417,418, Village: Juna Katariya, Taluka: Bhachau, Dist: Kutch

4.2 The authorization is granted to operate a facility for collection, storage, within factory premises, transportation, and ultimate disposal of Hazardous wastes by selling out to registered recyclers.

4.3 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

4.4 **TERMS AND CONDITIONS OF AUTHORISATION:**

- The applicant shall comply with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.
- The authorisation shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.

7

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- c) The persons authorized shall not rent, lend, sell, and transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorisation order by the persons authorized shall constitute a breach of this authorisation.
- e) It is the duty of the authorised person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
- f) An application for the renewal of an authorisation shall be made as laid down in rule 7.
- g) Industry shall submit annual report within 15 days and subsequent by 31st January every year.
- h) Hazardous waste shall be disposed off in accordance with the Haz. Waste (Management, Handling & Transboundary Movement) rules, 2016 and unit shall have to obtain Authorization of this Board for all applicable categories of waste.

5. GENERAL CONDITIONS: -

- 5.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 5.2 Applicant shall also comply with the general conditions given in annexure I.
- 5.3 The waste generator shall be totally responsible for (I.E. Collection, storage, transportation and ultimate disposal) of the wastes generated.
- 5.4 Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form - 4 by 31st January of every year.
- 5.5 In case of any accident, details of the same shall be submitted in Form - 5 to Gujarat Pollution Control Board.
- 5.6 As per "Public liability Insurance Act - 91" company shall get insurance policy, if applicable.
- 5.7 Empty drums and containers of toxic and hazards material shall be treated as per guideline published for "management & handling of discarded containers". Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.
- 5.8 In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority.
- 5.9 In case of transport of hazardous waste to a facility for (I.E. Treatment, Storage and disposal) existing in a state other than the state where hazardous waste are generated, the occupier shall obtain "No Objection certificate" from the state pollution Control Board, the Committee of the concerned state or Union territory Administration where the facility exists.
- 5.10 Unit shall take all concrete measures to show tangible results in waste generation reduction, avoidance, reuse and recycle. Action taken in this regards shall be submitted within 03 months and also along with Form 4.
- 5.11 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon Supreme Court's order in W.P. No.657 of 1995 dated 14th October 2003.

340



GPCB

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 010

Phone : (079) 23226295

Fax : (079) 23232156

Website : www.gpcb.gov.in

5.12 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.

For and on behalf of
GUJARAT POLLUTION CONTROL BOARD

(Sushil Vegda)

Senior Environment Engineer

NO: GPCB/CCA-KUTCH-294 (10)/ GPCB ID 17826/ 355742

Date:- 11/05/16

To,

M/s Electrotherm (India) Ltd (Sponge Iron & DI Pipe Plant),

Plot No: 325,

Village: Samakhiyali,

Taluka: Bhachau, Dist: Kutch East- 370 140.

9

Clean Gujarat Green Gujarat

ISO - 9001 - 2008 & ISO - 14001 - 2004 Certified Organisation

341

APPENDIX 2

GPCB ANALYSIS RESULTS

	ANALYSIS REPORT FOR AIR TYPE : Stack-Flue Gas	Gujarat Pollution Control Board Kutch West Katira Commercial Complex-1, First Floor Near Income Tax office, Manglam Char rasta, Sanskar nagar, BHUJ - 370 001
	Sample ID: 255600 - Analysis Completion: 05/04/2019 Iron & Steel (involving processing from ore/integrated steel plants) and or Sponge Iron units / LAB Inward : 5192	

1. Name &	: Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant) - 17826
2. Address of the Unit	: 325, VILLAGE: SAMAKHIYALI, Not Applicable SAMAKHIYALI - 370140, Taluka : Bhachau, District : Kutch East, GIDC : Not In Gide
3. Nature of Sample	: REP-Representative/Grab, (Insp Type : HOR-H.O.Reference)
4. Sample Collected By	: R.H. JIVANI, SO
5. Date & Time of Collection & Receipt	: 26/03/2019, (1500 to 1530)
6. Date of Start & Completion of Analysis	: 29/03/2019 & 05/04/2019
7. Sampling Point	: Stack attach to Boiler ~ Common stack attached to AFBC Boiler 1&2
8. Fuel	: Coal
9. APCM	: ESP
10. Thimble & Weight (gm)	: Thimble no E 45, wt 1.75177 gm
11. Temperature on Collection	: 115 & Volume-Absorb Media : 50 ml each
12. Volume-Gas Passed	: 420 lit for pm, 60 lit for so ₂ , nox
13. Parameters	: 3 & Oper Time(Min) : 30

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	PM-Stack	MG/NM3	IS: 11255 (Part - 1), 1985 (Reaffirmed 1999)	1 - 5000 mg/NM3	94
2	SO ₂ -Stack (PPM)	PPM	IS: 11255 (Part - 2), 1985 (Reaffirmed 2009)	5 - 500 mg/NM3	84
3	NOX-Stack	PPM	IS: 11255 (Part-7), 2005	5 - 500 mg/NM3	1.61

Laboratory Remarks : Sample Freeze By: 682-ae_682 Dt: 10/04/2019


Dr. S. N. Agravat, Lab Head

Field Observation :

20/04/2019

342


ANALYSIS REPORT FOR AIR
TYPE : Stack-Flue Gas

 Gujarat Pollution Control Board
 Kutch West

Katira Commercial Complex-1, First Floor

Sample ID: 255599 - Analysis Completion: 05/04/2019 - Near Income Tax office, Manglam Char rasta, Sanskar

 Iron & Steel (involving processing from ore/integrated steel plants) and
 or Sponge Iron units / LAB Inward : 5191

 nagar,
 BHUJ - 370 001

1. Name & : Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant) - 17826
2. Address of the Unit : 325, VILLAGE: SAMAKHIYALI, Not Applicable
SAMAKHIYALI - 370140, Taluka : Bhachau, District : Kutch East, GIDC : Not In Gide
3. Nature of Sample : REP-Representative/Grab , (Insp Type : HOR-H.O.Reference)
4. Sample Collected By : R.H.JIVANI, SO
5. Date & Time of Collection & Receipt : 26/03/2019, (1335 to 1405)
6. Date of Start & Completion of Analysis : 29/03/2019 & 05/04/2019
7. Sampling Point : Stack attach to Any Other ~ Stack attached to SI Kiln no. 2
8. Fuel : Coal
9. APCM : ESP
10. Thimble & Weight (gm) : Thimble no E 44, wt 1.77509 gm
11. Temperature on Collection : 122 & Volume-Absord Media : 50 ml each
12. Volume-Gas Passed : 450 lit for pm , 60 lit fo so₂, nox
13. Parameters : 3 & Oper Time(Min) : 30

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	PM-Stack	MG/NM3	IS: 11255 (Part - 1), 1985 (Reaffirmed 1999)	1 - 5000 mg/NM3	82
2	SO ₂ -Stack (PPM)	PPM	IS: 11255 (Part - 2), 1985 (Reaffirmed 2009)	5 - 500 mg/NM3	94
3	NOX-Stack	PPM	IS: 11255 (Part-7), 2005	5 - 500 mg/NM3	1.35

Laboratory Remarks : Sample Freeze By: 682-ae_682 Dt.: 10/04/2019

 Dr. S. N. Agravat, Lab Head

Field Observation :

n i c

20/04/2019

343

VYAVASAYI VIDYA PRATISHTHAN ENGINEERING COLLEGE, RAJKOT



ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Sample ID: 255601 - Analysis Completion: 16/04/2019

Iron & Steel (involving processing from ore/integrated steel plants)
and or Sponge Iron units / LAB Inward : 5189

Gujarat Pollution Control Board, Kutch West
Katira Commercial Complex-1, First Floor
Near Income Tax office, Manglam Char rasta, Sanskar
nagar,
BHUJ - 370 001

TEST REPORT

Test Report No. : 5189

Date: 18/04/2019

1. Name of the Customer : Electrotherm (India) Ltd (Sponge Iron & Di Pipe Plant) - 17826
2. Address : 325, VILLAGE: SAMAKHIYALI, Not Applicable
SAMAKHIYALI-370140, Taluka : Bhachau, District : Kutch East, GIDC : Not In Gide
3. Nature of Sample : REP-Representative/Grab, (Insp Type : HOR-H.O.Reference)
4. Sample Collected By : R.H.JIVANI, SO
5. Quantity of Sample Received : 5 ltr
6. Code No. of the Sample : 255601
7. Date & Time of Collection & Inwarding : 26/03/2019, (1310 to 1312) & 29/03/2019
8. Date of Start & Completion of Analysis : 29/03/2019 & 16/04/2019
9. Sampling Point : ## Final Outlet of the ETP ~
10. Flow Details (Remarks) : -
11. Mode of Disposal : On land for gardening
12. Ultimate Receiving Body : Not Applicable.
13. Temperature on Collection : 28 & pH Range on pH Strip : 7 to 8 on pH strip
14. Carboys Nos for : W 1 & Color & Appearance : Colourless
15. Water Consumption & W.W.G (KLPD) : Ind : 2155.000, Dom : 10.000 & Ind : 60.000, Dom : 7.000

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part - 9) - 1984 (Reaffirmed 2006)	Ambient oC - 60 oC	28
2	pH	pH Units	4500 H+ B APHA Standard Methods 22nd edi. 2012	1 - 14 pH value As or	8.37
3	Colour	Pl.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-500	less
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Methoc	10 - 200000 mg/L	1250
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Methoc	2 - 10000 mg/L	10
6	Ammonical Nitrogen	mg/l	1). Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	0.56
7	Percent Sodium	%Na	IS11624-1986 (Reaffirmed 2009)	0.01 - 100%	57.40
8	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard ?	1 - 50000 mg/l	480
9	Sulphate	mg/l	APHA (22nd edi) 4500 SO4 E	2-40mg/l	93
10	Chemical Oxygen Demand	mg/l	APHA (22nd Edition)- 5520 B Open Reflux Method-2	5.0- 50000 mg/l	29
11	Oil & Grease	mg/l	Liquid - Liquid Partition Gravimetric method. (5520 B	01 - 1000 mg/l	0.4
12	Phenolic Compounds	mg/l	4 Amino Antipyrine method without Chloroform Extra	0.1 - 50 mg/l	0.0
13	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	BDL
14	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	BDL
15	Hexavalent Chromium	mg/l	APHA (22nd Edition) -3500 - Cr B : -2012 Colorimet	0.1 - 100 mg/l	0.0
16	Copper	mg/l	3111 B APHA Standard methods 21st edi)	0.01-150 mg/l	BDL
17	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	BDL
18	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	BDL
19	Cadmium	mg/l	(3111 B APHA Standard methods 21st edi)	0.002-100 mg/l	BDL
20	B.O.D (3 Days 27oC)	mg/l	3 - Day BOD test. (IS 3025 (Part 44) 1993 Reaffirm	05-50000 mg/l	08

344

VYAVASAYI VIDYA PRATISHTHAN ENGINEERING COLLEGE, RAJKOT

Laboratory Remarks : Sample Freeze By:682-ae_682 Dt: 18/04/2019*Agrawat S. N.*

Dr. S. N. Agrawat, Lab Head

Field Observation :

Note :

1. * - These parameters are NOT covered under the scope of NABL.
2. The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
3. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
4. This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
5. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
6. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
7. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
8. Physicochemical and microbiological parameters, Std. Methods for Water and Waste Water- 22nd Edition by APHA.
9. Bioassay test (for toxicity) -IS:6582-Part-2:2001; Reaffirmed 2007.

N I C

20/04/2019



APPENDIX – 4
TSDF MEMBERSHIP CERTIFICATE

 DETOX GROUP	Saurashtra Enviro Projects Pvt. Ltd. Integrated Common Hazardous Waste Management Facility
Certificate	
Certificate No : 1200000304	
<i>To Whomsoever it may concern</i>	
<i>This is to certify that</i>	
ELECTROTHERM INDIA LIMITED	
SURVEY NO - 325, N.H.NO. 8A VILL - SAMAKHYALL, TAL: BHACHAU KUTCH	
<i>is a valid member of</i>	
SAURASHTRA ENVIRO PROJECTS PVT. LTD.	
<i>for Integrated Common Hazardous Waste Management Facility.</i>	
<i>This membership is valid for a period of</i>	
5 Years	
Date of issue : 24.12.2014	For, Saurashtra Enviro Projects Pvt. Ltd.
Date of expiration : 23.12.2019	
Place of issue : Surat	Director
SUBJECT TO SURAT JURISDICTION	
Corporate Address: K. G. Chambers, Udhana Darwaja, Ring Road, Surat - 395 002 P. +91 261 2351248, 2354191 F. +91 261 2394048 E. info@saurashtrapvtl.com W. www.saurashtrapvtl.in CIN :- U51100GJ2009PTC047639	

**APPENDIX – 5
ISO CERTIFICATES**



CERTIFICATE

**Management system as per
BS OHSAS 18001 : 2007**

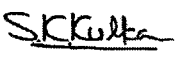
In accordance with TÜV NORD CERT procedures, it is hereby certified that

ELECTROTHERM (INDIA) LIMITED
STEEL & PIPE DIVISION
 HO: Survey No.72, Palodia, via Thaltej,
 Ahmedabad - 382 115,
 WORKS: Survey No. 325, N.H.No. 8A,
 Nr. L & T Toll Naka, Village - Samakhiali,
 Tal. Bhachau, Kutch - 370 140, Gujarat,
 India

applies a management system in line with the above standard for the following scope

**Manufacture and Sale of Sponge Iron, Steel Billets and TMT Bars from Iron
 Ore and Manufacture and Sale of Different Grades and Size of Centrifugally
 Cast (Spun) Ductile Iron Pressure Pipe for Water and Sewage**

Certificate Registration No. 44 116 16391121 Valid until 25.10.2019
 Audit Report No. 2.5 - 3380/2006


 Certification Body Issue 26.10.2016
 at TÜV NORD CERT GmbH Place : Mumbai

This certification was conducted in accordance with the TÜV NORD CERT auditing and
 certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com
 TÜV India Pvt. Ltd., 801, Raheja Plaza - 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in


 Deutsche
 Akkreditierungsstelle
 D-24112 Kiel

TÜV NORD

CERTIFICATE

Management system as per
ISO 14001 : 2015

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**ELECTROTHERM (INDIA) LIMITED
STEEL & PIPE DIVISION**

HO: Survey No.72, Palodia, via Thaltej,
Ahmedabad - 382 115,

WORKS: Survey No. 325, N.H.No. 8A,
Nr. L & T Toll Naka, Village - Samakhiyali,
Tal. Bhachau, Kutch - 370 140, Gujarat,
India

applies a management system in line with the above standard for the following scope

**Manufacture and Sale of Sponge Iron, Steel Billets and TMT Bars from Iron
Ore and Manufacture and Sale of Different Grades and Size of Centrifugally
Cast (Spun) Ductile Iron Pressure Pipe for Water and Sewage**

Certificate Registration No. 44 104 16391121
Audit Report No. 2.5 - 3380/2006

Valid until 25.10.2019

S.K. Kulkarni

Certification Body
at TÜV NORD CERT GmbH

Issue 26.10.2016
Place : Mumbai

This certification was conducted in accordance with the TÜV NORD CERT auditing and
certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH

Langemarckstrasse 20

45141 Essen

www.tuev-nord-cert.com

TUV India Pvt. Ltd., 801, Raheja Plaza - 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in



APPENDIX – 6

PLI POLICY



Attached & forming part of
Policy no.4007/132865111/01/000

PUBLIC LIABILITY INSURANCE (UNDER PUBLIC LIABILITY INSURANCE ACT 1991)

Policy No. 4007/132865111/01/000

PREAMBLE

ICICI Lombard General Insurance Company Limited ("the Company"), having received a Proposal and the premium from the proposer named in the Schedule referred to herein below, and the said Proposal and Declaration together with any statement, report or other document leading to the issue of this Policy and referred to therein having been accepted and agreed to by the Company and the Proposer as the basis of this contract do, by this Policy agree, in consideration of and subject to the due receipt of the subsequent premiums, as set out in the Schedule with all its Parts, and further, subject to the terms and conditions contained in this Policy, as set out in the Schedule with all its Parts that on proof to the satisfaction of the Company of the compensation having become payable as set out in Part I of the Schedule to the title of the said person or persons claiming payment or upon the happening of an event upon which one or more benefits become payable under this Policy, the Sum Insured/ appropriate benefit will be paid by the Company.

PART I OF SCHEDULE		
1	Name of the insured	Electrotherm India Limited
2	Mailing Address of the insured	Survey No.72, Village : Palodia, Taluka Kalol, India Gujarat, Ahmedabad - 382115
3	Trade or Business of the insured	Steel Manufacturing
4	Address of Premises insured	All India Locations
5	Paid Up Capital	INR 24.74 Crores
6	Policy period	June 09, 2018 June 08, 2019
		Time: 00:00 hrs 23.59 hrs
7	Turnover	INR 2,500 Crores
8	Limit of Indemnity	
	Aggregate One Year (AOY)	INR 150,000,000
	Any One Accident (AOA)	INR 50,000,000
9	Compulsory Excess	Nil

Attached & forming part of
Policy no. 4007/13286511/01/000

10	Total Premium	INR 23,600/- (Premium value mentioned above is inclusive of taxes applicable)		
	ERF Contribution	INR 20,000/-		
	Total Payable	INR 43,600/-		
11	Co-insurance details	Co-Insurer Name	Co-Insurer share	
		NA	NA	
12	Special conditions	Policy shall stand cancelled ab initio in the event of non-realization of the premium		
13	Intermediary Details	Intermediary Code: 201496670773 Intermediary Name: Parth Nileshbhai Desai Intermediary contact no.: 9909559969 Intermediary email id: shubhconsultancy@yahoo.co.in		
14	GSTIN Reg. No			
	ILGIC GSTIN Address			

The stamp duty of Rs. 0.50/- (Fifty Paise Only) paid in cash or by demand draft or by pay order, vide Receipt/Challan No. MH001629654201819M dated 17th May 2018.

Signed for and on behalf of **ICICI Lombard General Insurance Company Limited**, at **Mumbai** on this date **JUNE 13, 2018**.



Mr. Sanjay Datta
Authorised Signatory

GSTIN Reg. No : 24AAACI7904G1ZT

IL GIC GSTIN Address: Third Floor, Zodiac Square, S G road, Ahmedabad, Gujarat 380054

Description of services: General Insurance Business

HSN/SAC : 9971

Policy shall stand cancelled ab initio in the event of non-realization of the premium."



ICICI Lombard General Insurance Company Ltd.
 ICICI LOMBARD HOUSE, 414, Veer Savarkar Marg,
 Near Siddhi Vinayak Temple, Prabhadevi, Mumbai - 400 025.
 Attached & forming part of
 Policy no. 4007/132865111/01/000

PART II OF SCHEDULE

1. Definitions

For the purpose of this policy, the following terms shall have the meaning as set forth hereunder:

- i. "Act" unless otherwise specifically mentioned shall mean the Public Liability Insurance Act 1991 as amended from time to time.
- ii. "Accident" means an accident involving a fortuitous, sudden or unintentional occurrence while handling any hazardous substance resulting in continuous, intermittent or repeated exposure to death of, or injury to any person or damage to any property but does not include an accident by reason only of war or radioactivity.
- iii. "Handling" in relation to any hazardous substance means the manufacture, processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substance.
- iv. "Hazardous Substance" and group means any substance or preparation which is defined as hazardous substance under the Public Liability Insurance Act, 1991 and the Rules framed there under
- v. "Owner" or "Insured" means a person who owns, or has control over handling of any hazardous substance at the time of accident and includes:
 - a. in the case of a firm, any of its partners
 - b. in the case of an association, any of its members, and
 - c. in the case of a company, any of its directors, managers, secretaries or other officers who is directly in charge of, and is responsible to the company for the conduct of the business of the company
- vi. "Turnover" shall mean
 - a. In case of Manufacturing Units - Entire annual gross sales turnover including all levies and taxes of manufacturing units handling hazardous substance as defined in the Public Liability Insurance Act, 1991. For the purpose of this insurance, the term "Units" shall mean all operations being carried out in the manufacturing complex in one location.
 - b. In case of Godowns/ Warehouse Owners - Total annual rental receipts of premises handling hazardous substance as defined in the Public Liability Insurance Act, 1991.
 - c. In case of Transport Operators - Total annual freight receipts
 - d. In all other cases - Total annual gross receipts

(2) Scope of Cover

The Company hereby agrees, subject to the terms, conditions and exclusions herein contained or endorsed or otherwise expressed herein, to indemnify the Insured or Owner as defined above for the purpose of this policy against the statutory liability arising out of Accidents occurring during the currency of the Policy due to handling of hazardous substances as provided for in the Act as defined above, and the Rules framed there under.

(3) Exclusions

The Company shall not be liable:

- i. For any willful or intentional non-compliance of any statutory requirements;
- ii. In respect of fines, penalties, punitive and /or exemplary damages;
- iii. Under any law or legislation except in so far as provided for in Section 8 (1) & 8 (2) of



ICICI Lombard General Insurance Company Ltd.
 ICICI LOMBARD HOUSE, 414, Veer Savarkar Marg,
 Near Siddhi Vinayak Temple, Prabhadevi, Mumbai - 400 025.
 Attached & forming part of
 Policy no. 4007/132865111/01/000

- the Act;
- iv. In respect of damage to property owned, leased or hired or under hire purchase or on loan to the Insured or otherwise in the Insured Owner's control, care or custody;
 - v. For any liability directly or indirectly occasioned by, happening through or in consequence of war, invasion, act of foreign enemy, hostilities (whether war be declared or not) civil war, rebellion, revolution, insurrection or military or usurped power;
 - vi. For any liability directly or indirectly caused by or contributed to by:
 - a. Ionizing radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel.
 - b. The radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof;
 - vii. For matter outside the scope of Public Liability Insurance Act, 1991.
 - viii. In respect of losses/liability arising outside India.

(4) Basis of Assessment of Claims

- i. The basis of assessment of claim shall be the award given by the appropriate authority under the Act.
- ii. Claim Procedures: The procedure for lodging the claim shall be as under:
 - a. On the occurrence of any Accident, whether or not the Insured receives any notice of an alleged claim / complaint, the Insured shall duly inform the Company in the manner prescribed in the 'Incident Reporting Form', detailing the Accident.
 - b. The Insured shall, upon receipt of any notice of an alleged claim / complaint from appropriate authority, forthwith furnish the same to the Company in the manner detailed in the 'Claim Application Form'. The insured shall also furnish the copies of such documents, as prescribed by the rules, which are submitted and forwarded by the appropriate authority and/or any proposed responses, if any, by the Insured to the appropriate authorities.
 - c. Upon the affixing of any legal liability upon the Insured in terms of an award of the appropriate authority, the Insured shall forthwith submit a duly filled 'Claim Settlement Form', detailing the liability accrued and the Defence Costs, if any together with any other information that the Company may require or as specified in the 'Claim Settlement Form'.
 - d. The Insured shall also at all times at his own expense produce, procure and give to the Company all such further particulars, plans, specifications, books, vouchers, invoices, duplicates or copies thereof, documents, investigation reports (internal/external), proofs, evidence and information with respect to the claim (verified by statutory declaration, if so required) and the origin and cause of the loss and the circumstances under which the loss or damage occurred, and any matter touching the liability or the amount of the liability of the Company as may be reasonably required by or on behalf of the Company together with a declaration on oath or in other legal form of the truth of the claim and of any matters connected therewith.
 - e. Subject to applicable law, rule, regulation or notification in this behalf, the Company hereby reserves the right as provided hereafter:

No claim in respect of loss equal to or exceeding twenty thousand rupees in value on the policy shall be admitted for payment or settled by the Company unless the Company has been given a report on the

353



ICICI Lombard General Insurance Company Ltd.
 ICICI LOMBARD HOUSE, 414, Veer Savarkar Marg,
 Near Siddhi Vinayak Temple, Prabhadevi, Mumbai - 400 025.
 Attached & forming part of
 Policy no. 4007/132863111/01/000

occurrence of the loss and extent of the loss, from a person who holds a license to act as a Surveyor or loss assessor, under the Insurance Act, 1938, and appointed by the company for the purpose.

Provided that nothing hereinabove shall be deemed to take away or abridge the right of the Company to pay or to settle any claim at any amount different from the amount assessed by the Surveyor or loss assessor.

- f. The Insured shall furnish the forms duly completed together with:
- i. all material documents, as specified therein or as requested by the Company or otherwise;
 - ii. particulars of all other insurances, if any
- No claim under this policy shall be payable unless the terms of this condition have been complied with

(5) Limitation Period

In no case whatsoever shall the Company be liable for any claim for relief made after the expiry of 5 years from the date of occurrence of the Accident.

(6) Policy Related Terms And Conditions

1. No admission, offer, promise or payment shall be made or given by or on behalf of the Insured under this policy without the written consent of the Company.
2. The Insured shall keep a record of their Turnover. The Company shall at all times have full rights to call for and examine such records.
3. In case the Company pays any amount to the claimant due to any statutory provision, such amount shall be recoverable from the Insured, if such amount need not have been paid but for the said statutory provision



ICICI Lombard General Insurance Company Ltd.
 ICICI LOMBARD HOUSE, 414, Veer Savarkar Marg,
 Near Siddhi Vinayak Temple, Prabhadevi, Mumbai - 400 025.
 Attached & forming part of
 Policy no. 4007/132865111/01/000

PART III OF THE SCHEDULE

Standard Terms and Conditions

1. Incontestability and Duty of Disclosure

The policy shall be null and void and no benefit shall be payable in the event of untrue or incorrect statements, misrepresentation, incorrect description or non-disclosure in any material particular in the proposal form, personal statement, declaration and connected documents, or any material information having been withheld, or a claim being fraudulent or any fraudulent means or devices being used by the Insured or any one acting on his behalf to obtain any benefit under this policy

2. Reasonable Care

The Insured shall take all reasonable steps to safeguard the interests of the Insured against accidental loss, or damage that may give rise to the claim

3. Observance of terms and conditions

The due observance and fulfillment of the terms, conditions and endorsement of this policy in so far as they relate to anything to be done or complied with by the Insured, shall be a condition precedent to any liability of the Company to make any payment under this policy

4. Material change

The Insured shall immediately notify the Company by fax and in writing of any material change in the risk and cause at his own expense such additional precautions to be taken as circumstances may require to ensure safe operation of the Insured items or trade or business practices thereby containing the circumstances that may give rise to the claim and the Company may, adjust the scope of cover and / or premium, if necessary, accordingly

5. Records to be maintained

The Insured shall keep an accurate record containing all relevant particulars and shall allow the Company to inspect such record. The Insured shall within one month after the expiry of each period of insurance furnish such information as the Company may require

6. No constructive Notice

Any of the circumstances in relation to these conditions coming to the knowledge of any official of the Company shall not be the notice to or be held to bind or prejudicially affect the Company notwithstanding subsequent acceptance of any premium

7. Notice of charge etc

The Company shall not be bound to notice or be affected by any notice of any trust, charge, lien, assignment or other dealing with or relating to this policy but the receipt of the Insured or his legal personal representative shall in all cases be an effectual discharge to the company

8. Special Provisions

Any special provisions subject to which this policy has been entered into and endorsed in the policy or in any separate instrument shall be deemed to be part of this policy and shall have effect accordingly

9. Overriding effect of Part II of the Schedule

The terms and conditions contained herein and in Part II of the Schedule shall be deemed to



ICICI Lombard General Insurance Company Ltd.
 ICICI LOMBARD HOUSE, 414, Veer Savarkar Marg,
 Near Siddhi Vinayak Temple, Prabhadevi, Mumbai - 400 025.
 Attached & forming part of
 Policy no. 4007/132865111/01/000

form part of the policy and shall be read as if they are specifically incorporated herein; however, in case of any inconsistency of any term and condition with the scope of cover contained in Part II of the Schedule, then the term(s) and condition(s) contained herein shall be read mutatis mutandis with the scope of cover/terms and conditions contained in Part II of the Schedule and shall be deemed to be modified accordingly or superseded in case of inconsistency being irreconcilable

10. Electronic Transactions

The Insured agrees to adhere to and comply with all such terms and conditions as the Company may prescribe from time to time, and hereby agrees and confirms that all transactions effected by or through facilities for conducting remote transactions including the Internet, World Wide Web, electronic data interchange, call centers, teleservice operations (whether voice, video, data or combination thereof) or by means of electronic, computer, automated machines network or through other means of telecommunication, established by or on behalf of the Company, for and in respect of the policy or its terms, or the Company's other products and services, shall constitute legally binding and valid transactions when done in adherence to and in compliance with the Company's terms and conditions for such facilities, as may be prescribed from time to time. The Insured agrees that the Company may exchange, share or part with any information to or with other ICICI Group Companies or any other person in connection with the Policy, as may be determined by the Company and shall not hold the Company liable for such use/application

11. Duties of the Insured on occurrence of loss

On the occurrence of any loss, within the scope of cover under the policy the Insured shall:

- I. Forthwith file/submit a Claim Form in accordance with Claim Procedure Clause as provided in Part II of the Schedule.
- II. Allow the Surveyor or any agent of the Company to inspect the lost/damaged properties/premises/goods or any other material items, as per the Right to Inspect Clause as provided in this Part.
- III. Assist and not hinder or prevent the Company or any of its agents in pursuance of their duties under Rights of the Company On Happening Of Loss Or Damage Clause as provided in this Part.
- IV. Not abandon the insured property/item/premises, nor take any steps to rectify/remedy the damage before the same has been approved by the Company or any of its agents or the Surveyor.

If the Insured does not comply with the provisions of this Clause or other obligations cast upon the Insured under this policy, in terms of the other clauses referred to herein or in terms of the other clauses in any of the policy documents, all benefits under the policy shall be forfeited, at the option of the Company

12. Rights of the Company on happening of loss or damage

On the happening of loss or damage, or circumstances that have given rise to a claim under this policy, the Company may:

1. enter and/or take possession of the insured property, where the loss or damage has happened
2. take possession of or require to be delivered to it any property of the Insured in the building or on the premises at the time of the loss or damage
3. keep possession of any such property and examine, sort, arrange, remove or otherwise deal with the same; and,
4. sell any such property or dispose of the same for account of whom it may concern.



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The powers conferred by this condition shall be exercisable by the Company at any time until notice in writing is given by the Insured that he makes no claim under the policy, or if any claim is made, until such claim is finally determined or withdrawn. The Company shall not by any act done in the exercise or purported exercise of its powers hereunder incur any liability to the Insured or diminish its rights to rely upon any of the conditions of this policy in answer to any claim.

If the insured or any person on his behalf shall not comply with the requirement of the Company, or shall hinder or obstruct the Company in the exercise of the powers hereunder, all benefits under the policy shall be forfeited at the option of the Company

13. Right to inspect

If required by the Company, an agent/representative of the Company including a loss assessor or a Surveyor appointed in that behalf shall in case of any loss or any circumstances that have given rise to the claim to the Insured be permitted at all reasonable times to examine into the circumstances of such loss. The Insured shall on being required so to do by the Company produce all books of accounts, receipts, documents relating to or containing entries relating to the loss or such circumstance in his possession and furnish copies of or extracts from such of them as may be required by the Company so far as they relate to such claims or will in any way assist the Company to ascertain in the correctness thereof or the liability of the Company under the policy

14. Position after a claim

The Insured shall not be entitled to abandon any insured item/property whether the Company has taken possession of the same or not. As from the day of receipt of the claim amount by the Insured as determined by the Company to be fit and proper, the Sum Insured for the remainder of the period of Insurance shall stand reduced by the amount of the compensation

15. Subrogation

In the event of payment under this policy, the Company shall be subrogated to all the Insured's rights or recovery thereof against any person or organisation, and the Insured shall execute and deliver instruments and papers necessary to secure such rights.

The Insured and any claimant under this policy shall at the expense of the Company do and concur in doing and permit to be done, all such acts and things as may be necessary or required by the Company, before or after Insured's indemnification, in enforcing or endorsing any rights or remedies, or of obtaining relief or indemnity, to which the Company shall be or would become entitled or subrogated

16. Contribution

If at the time of the happening of any loss or damage covered by this policy, there shall be existing any other insurance of any nature whatsoever covering the same, whether effected by the Insured or not, then the Company shall not be liable to pay or contribute more than its ratable proportion of any loss or damage

17. Fraudulent claims

If any claim is in any respect fraudulent, or if any false statement, or declaration is made or used in support thereof, or if any fraudulent means or devices are used by the Insured or anyone acting on his behalf to obtain any benefit under this policy, or if a claim is made and rejected and no court action or suit is commenced within twelve months after such rejection



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or, in case of arbitration taking place as provided therein, within twelve (12) calendar months after the Arbitrator or Arbitrators have made their award, all benefits under this policy shall be forfeited

18. Cancellation/termination

The Company may at any time, cancel this policy, by giving 30 days notice in writing by Registered post/Acknowledgement Due post to the Insured at his last known address in which case the Company shall be liable to repay on demand a rateable proportion of the premium for the unexpired term from the date of the cancellation. The Insured may also give 30 days notice in writing, to the Company, for the cancellation of this policy, in which case the Company shall cancel the policy from the date of receipt of notice and retain the premium for the period this policy has been in force at the Company's short period scales as shown herebelow

Period (Not exceeding)	Rate
1 week	25% of the Annual rate
1 Month	25% of the Annual rate
2 Months	35% of the Annual rate
3 Months	50% of the Annual rate
4 Months	60% of the Annual rate
6 Months	75% of the Annual rate
8 Months	85% of the Annual rate
Exceeding 8 Months	Full Annual Premium

19. Cause of Action/ Currency for payments

No Claims shall be payable under this policy unless the cause of action arises in India, unless otherwise specifically provided in Part II of the Schedule to this policy. All claims shall be payable in India in Indian Rupees only

20. Policy Disputes

Any dispute concerning the interpretation of the terms, conditions, limitations and/or exclusions contained herein is understood and agreed to by both the Insured and the Company to be subject to Indian Law. Each party agrees to submit to the exclusive jurisdiction of the High Court of Mumbai and to comply with all requirements necessary to give such Court the jurisdiction. All matters arising hereunder shall be determined in accordance with the law and practice of such Court

21. Renewal notice

The Company shall not be bound to accept any renewal premium nor give notice that such is due. Every renewal premium (which shall be paid and accepted in respect of this policy) shall be so paid and accepted upon the distinct understanding that no alteration has taken place in the facts contained in the proposal or declaration herein before mentioned and that nothing is known to the Insured that may result to enhance the risk of the company under the guarantee hereby given. No renewal receipt shall be valid unless it is on the printed form of the Company and signed by an authorized official of the Company

22. Notices

Any notice, direction or instruction given under this policy shall be in writing and delivered by hand, speed/registered post or courier to

In case of the Insured, at the address specified in Part 1 of the Schedule.



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In case of the Company:

ICICI Lombard General Insurance Company Limited
 Corporate Office: ICICI LOMBARD HOUSE, 414 VEER SAVARKAR MARG, PRABHADEVI,
 MUMBAI-400025.

Notice and instructions will be deemed served 7 days after posting or immediately upon receipt in the case of hand delivery, facsimile or e-mail

23. Customer Service

If at any time the Insured requires any clarification or assistance, the Insured may contact the offices of the Company at the address specified, during normal business hours

24. Grievances

In case the Insured is aggrieved in any way, the Insured should call the Insurers at toll free number: 1800 2666 or email the Insurer at customersupport@icicilombard.com.

If the Insured is not satisfied with the resolution, then the Insured may subsequently write to the manager- service quality, corporate manager- service quality, national manager- operations & finally director-services and business development at the following address:

Grievance Redressal Officer
 ICICI Lombard General Insurance Company Limited
 ICICI Lombard House
 414, Veer Savarkar Marg
 Near Siddhi Vinayak Temple,
 Prabhadevi, Mumbai 400 025

In case the Insured's complaint is not fully addressed by the Insurer, Insurer may use the Integrated Grievance Management System (IGMS) for escalating the complaint to IRDAI. Through IGMS, Insured can register the complaint online and track its status. For registration please visit IRDAI website www.irdaindia.org. If the issue still remains unresolved, the Insured may, subject to vested jurisdiction, approach Insurance Ombudsman for the redressal of the grievance.

The details of Insurance Ombudsman are available below:-

Address & Contact Details of Ombudsmen Centres

Office of The Governing Body of Insurance Council
 (Monitoring Body for Offices of Insurance Ombudsman)
 3rd Floor, Jeevan Seva Annexe, Santacruz(West), Mumbai – 400054. Tel no: 26106671/6889.
 Email id: inscoun@gbic.co.in website: www.gbic.co.in

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If you have a grievance, approach the grievance cell of Insurance Company first.
 If complaint is not resolved/ not satisfied/not responded for 30 days then
 You can approach The Office of the Insurance Ombudsman(Bimalokpal)
 Please visit our website for details to lodge complaint with Ombudsman.



ICICI Lombard General Insurance Company Ltd.
ICICI LOMBARD HOUSE, 414, Veer Savarkar Marg,
Near Siddhi Vinayak Temple, Prabhadevi, Mumbai - 400 025.

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Policy no. 4007/132865111/01/000

Office of the Insurance Ombudsman, 2nd Floor, Ambica House, Ashram Rd, AHMEDABAD-380 014. Tel.: 079-27545441/27546840 Fax : 079-27546142 Email: bimalokpal.ahmedabad@gbic.co.in	Office of the Insurance Ombudsman, 2 nd Floor, Janak Vihar Complex, 6, Malviya Nagar, BHOPAL-462 003. Tel.: 0755-2769201/9202 Fax : 0755-2769203 Email: bimalokpal.bhopal@gbic.co.in
Office of the Insurance Ombudsman, 62, Forest Park, BHUBANESHWAR-751 009. Tel.: 0674-2596455/2596003 Fax : 0674-2596429 Email: bimalokpal.bhubaneswar@gbic.co.in	Office of the Insurance Ombudsman, SCO No.101-103, 2nd Floor, Batra Building, Sector 17-D, CHANDIGARH-160 017. Tel.: 0172-2706468/2772101 Fax : 0172-2708274 Email: bimalokpal.chandigarh@gbic.co.in
Office of the Insurance Ombudsman, Fathima Akhtar Court, 4th Floor, 453 (old 312), Anna Salai, Teynampet, CHENNAI-600 018. Tel.: 044-24333668 /24335284 Fax : 044-24333664 Email: bimalokpal.chennai@gbic.co.in	Office of the Insurance Ombudsman, 2/2 A, Universal Insurance Bldg., Asaf Ali Road, NEW DELHI-110 002. Tel.: 011-23234057/23232037 Fax : 011-23230858 Email: bimalokpal.delhi@gbic.co.in
Office of the Insurance Ombudsman, "Jeevan Nivesh", 5 th Floor, S.S. Road, GUWAHATI-781 001. Tel.: 0361-2132204/5 Fax : 0361-2732937 Email: bimalokpal.guwahati@gbic.co.in	Office of the Insurance Ombudsman, 6-2-46, 1 st Floor, Moin Court, A.C. Guards, Lakdi-Ka-Pool, HYDERABAD-500 004. Tel : 040-65504123/23312122 Fax: 040-23376599 Email: bimalokpal.hyderabad@gbic.co.in
Office of the Insurance Ombudsman, 2nd Floor, CC 27/2603, Pulinat Bldg., M.G. Road, ERNAKULAM-682 015. Tel : 0484-2358759/2359338 Fax : 0484-2359336 Email: bimalokpal.ernakulam@gbic.co.in	Office of the Insurance Ombudsman, Hindustan Building, Annexe, 4 th Floor, C.R.Avenue, KOLKATA - 700072 Tel No: 033-22124339/22124346 Fax: 22124341 Email: bimalokpal.kolkata@gbic.co.in
Office of the Insurance Ombudsman, Jeevan Bhawan, Phase-2, 6 th Floor, Nawal Kishore Road, Hazratganj, LUCKNOW-226 001. Tel : 0522-2231331/2231330 Fax : 0522-2231310 Email: bimalokpal.lucknow@gbic.co.in	Office of the Insurance Ombudsman, 3rd Floor, Jeevan Seva Annexe, S.V. Road, Santacruz(W), MUMBAI-400 054. Tel : 022-26106960/26106552 Fax : 022-26106052 Email: bimalokpal.mumbai@gbic.co.in
Office of the Insurance Ombudsman, Ground Floor, Jeevan Nidhi II, Bhawani Singh Road, JAIPUR - 302005. Tel: 0141-2740363 Email: bimalokpal.jaipur@gbic.co.in	Office of the Insurance Ombudsman, 3 rd Floor, Jeevan Darshan, N.C. Kelkar Road, Narayanpet PUNE - 411030. Tel: 020-32341320 Email: Bimalokpal.pune@gbic.co.in
Office of the Insurance Ombudsman, 24 th Main Road, Jeevan Soudha Bldg., JP Nagar, 1 st Phase, Ground Floor BENGALURU - 560025. Tel No: 080-26652049/26652048 Email: bimalokpal.bengaluru@gbic.co.in	Office of the Insurance Ombudsman, 4 th Floor, Bhagwan Sahai Palace, Main Road, Naya Bans, Sector-15, NOIDA - 201301. Tel: 0120-2514250/51/53 Email: bimalokpal.noida@gbic.co.in
Office of the Insurance Ombudsman, 1 st Floor, Kalpana Arcade Building, Bazar Samiti Road, Bahadurpur, PATNA - 800006 Tel No: 0612-2680952 Email id : bimalokpal.patna@gbic.co.in.	

360



ICICI Lombard General Insurance Company Ltd.
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 Attached & forming part of
 Policy no. 4007/132865111/01/000

ICICI Lombard General Insurance Company Limited

IRDA Reg. No. 115

CIN: L67200MH2900PLC129408

Mailing Address:

Registered Office:

Toll free No. : 1800 2666

401 & 402, 4th Floor, Interface 11, ICICI Lombard House, 414, Veer Savarkar Marg,
 Near Linking Road, Malad (West), Near Siddhi Vinayak Temple, Prabhadevi,
 Mumbai - 400 054. Mumbai - 400 025.

Alternate No.: + 919223622666 (chargeable)
 Email: customersupport@icicilombard.com
 Website: www.icicilombard.com



V.V.P.ENGINEERINGCOLLEGE

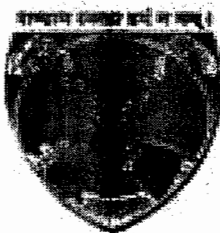
Vajdi - Virda, Kalawad Road, Rajkot-360 005.

Adequacy Certificate Of Environmental Management System

M/s. V. V. P. Engineering College, Rajkot is recognized by the GPCB, Gandhinagar under the Environment Audit Scheme was introduced by the Gujarat high Court vide its Orders Dtd. 20-12-1996 & 13-03-1997, as an environmental auditor for the purpose of the auditing, having carried out Environmental audit of, (for the period from April 2018 to March 2019)

- a) **M/s. Electrotherm (India) Limited (Sponge Iron & Di Pipe Plant) (17826)**
 b) Located at: Plot No.:325, Village: Samakhiyali – 370140 Taluka : Bhachau , District : Kutch Manufacturing Products as under.
 c) Manufacturing products as under:

Sr. No.	Manufacturing Products		Installed Capacity in MT/Month as per GPCB consent
1	Sponge Iron		24,000
2	D.I Pipe		16,000
3	Captive Power	WHRB	21 MWH
		FBC	24 MWH
4	Pig Iron(Blast Furnace)		23,100
5	Sinter Plant		32,400
6	Steel Rolling Mill (TMT)		52166
7	MS Billets/Bars		
8	Stainless steel billets		25000
9	Alloy Nickel		416
10	Epoxy coating TMT bar		52166
11	Induction Furnaces		17 Sets/Month
12	Electric cycle & vehicles	All Modal (Yo Bike)	1500 sets/Month
		E-Rickshaw & E. Winner	650 sets/month
By Products			
1	Blast furnace slug		As per production
2	Charcoal		As per production



V.V.P. ENGINEERING COLLEGE

Vajdi - Virda, Kalawad Road, Rajkot-360 005.

Having completed the environmental audit period on personal monitoring, and audit report, prepared as per the direction of Hon. Court in Environmental Audit Scheme, it is certified that the Environment Management System (EMS) provided by the industry for the products manufactured and capacity as stated above is **adequate and efficient** as applicable to achieve the quality of effluents (Air + Waste water + Solid waste) as specified in Consent/ Notification by GPCB Gandhinagar for the following quantity of waste generation:

> Liquid Effluent : Nil.

> Hazardous waste:

1. Used Oil- 7.31 KL/Year
2. Zn dust – 208 MT/Year
3. Mg dust – 250 MT/Years
4. Process dust – 675 MT/Year
5. Drum/Barrel – 2000 Nos.
6. Tar Containing waste – 4.8 TON/Year
7. Epoxy Coating Dust – 8 MT/Year
8. Oily cotton waste – 20 MT/Year

Air emission (Flue: adequate and
Gas stacks as well efficacious
As process stacks)

This certificate is valid for the Audit period only. However it is subject to automatic cancellation in case of any change in product profile/ capacity, quality, and quantity of effluents (Air + Water + Solid) and efficiency of EMS equipment.

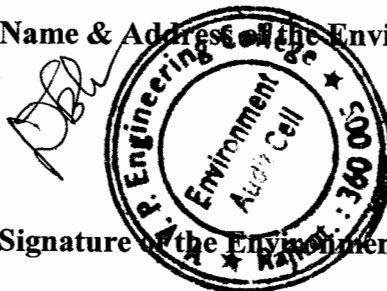
This certificate forms part of environmental audit report.

Date: 20/05/19

Name & Address of the Environmental Auditor

Place: Rajkot

Signature of the Environmental Auditor





V.V.P. ENGINEERING COLLEGE

Vajdi - Virda, Kalawad Road, Rajkot-360 005.

Certificate for Sampling and Analysis

This is to certify that the following samples of emissions (air, water, waste water, solid and hazardous wastes) have been collected and analyzed as per the following details:

Sample Details	Location	Collected By	Sample Collection		
			1 st Sampling	2 nd Sampling	3 rd Sampling
			Date	Date	Date
Waste water	ETP Outlet	VVP Engineer- ing College, Rajkot	07-08/06/18	11-12/12/18	13-14/02/19
Flue gas and process Stack Emissions	SMS - 1		07-08/06/18	11-12/12/18	13-14/02/19
	SMS - 2		07-08/06/18	11-12/12/18	13-14/02/19
	Annealing Furnace - 1		07-08/06/18	11-12/12/18	13-14/02/19
	Blast Furnace – 1		07-08/06/18	11-12/12/18	13-14/02/19
	Blast Furnace – 2		07-08/06/18	11-12/12/18	13-14/02/19
	AFBC Boiler 1 & 2 (Power Plant)		07-08/06/18	11-12/12/18	13-14/02/19
	Kiln – 1		07-08/06/18	11-12/12/18	13-14/02/19
	Kiln – 2		07-08/06/18	11-12/12/18	13-14/02/19
	Sinter Head		07-08/06/18	11-12/12/18	13-14/02/19
	Mg coating		07-08/06/18	11-12/12/18	13-14/02/19
	Zn coating		07-08/06/18	11-12/12/18	13-14/02/19
Ambient air	Near Main Gate		07-08/06/18	11-12/12/18	13-14/02/19
	At DIP Canteen		07-08/06/18	11-12/12/18	13-14/02/19
	Near Material Gate		07-08/06/18	11-12/12/18	13-14/02/19
Noise	Main Gate		07-08/06/18	11-12/12/18	13-14/02/19
	TMT Storage Yard		07-08/06/18	11-12/12/18	13-14/02/19
	Sinter Plant		07-08/06/18	11-12/12/18	13-14/02/19
	SMS - 1		07-08/06/18	11-12/12/18	13-14/02/19
	SMS - 2		07-08/06/18	11-12/12/18	13-14/02/19

**V.V.P. ENGINEERING COLLEGE**

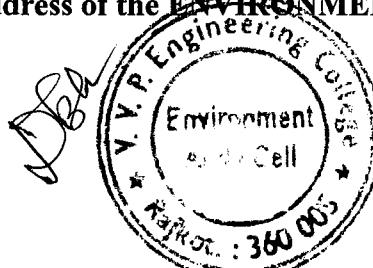
Vajdi - Virda, Kalawad Road, Rajkot-360 005.

Parameters analysed on site : Noise, PM 2.5, PM 10
Parameters analysed off site : All parameters of air, stack
Whether samples were preserved as per standard procedure for off site analysis: Yes
Parameters analysed by auditors team : SO_x, NO_x, PM 10, PM 2.5, SPM
Parameters analyzed by third team : Nil
Method followed for analysis :
• Air analysis : Gravimetric for PM 2.5 and PM 10, Titrimetric method for SO_x and NO_x

THIS IS TO CERTIFY THAT THE LABORATORY IN WHICH THE ANALYSIS HAS BEEN DONE IS APPROVED UNDER EPA/ACCREDITED BY NABL/RECOGNIZED UNDER SCHEDULE I OF GPCB.

Date: 20/05/19

Name & Address of the ENVIRONMENTAL AUDITOR



Place: Rajkot

Signature of the ENVIRONMENTAL AUDITOR



Turning Dreams into Concrete Reality

Sanghi Industries Limited
Clinker Plant, Sanghipuram
PO - Sanghipuram, Tal -

Kachchh-370511, (Gujarat)

Tel : 02831-274131/32/36

Fax : 02831-274106

IMS / COM / F04

Rev.No.00, eff. dt. 01/07/03

PURCHASE ORDER

Page 1 of 3

12553 ELECTROTHERM (INDIA) LTD (RM)

Samakhyadi, Ta : Bachau

Dist : Kutch

Samakhiyali -

Vendor GSTN no : 24AAACE2669L1Z1

State Code : 24

PO No : 1719000082 (Ver : 0)

PO Date : 25.12.2018

Release Date : 25.12.2018

IND No. : 4619000409

IND. Date : 19.12.2018

Quot.No. : APPROVAL

Quot. Date : 19.12.2018

Contact :

E-Mail : hardik.barot@electrotherm.com

Dear Sir,

With reference to your above Quotation No. and subsequent discussion. We are pleased to place this purchase order for supply of the following materials subject to the terms & conditions stated below & overleaf.

Sr. No.	Material Code	Description	HSN Code	Quantity	Unit	Unit Price	Total Amount (INR)
1	1100000011	FLY ASH SGST @ 2.5 % CGST @ 2.5 %	26219300	10000.000	MT	10.00	100000.00

FLY ASH REQUIRED FOR GRINDING UNIT-SANGHIPURM.

MATERIALS COST RS.10/-PMT.

TRANSPORTATION CHARGE -RS.430/-PMT (TRANSPORT BY KHPL & J D BULK)

PAYMENT TERMS:-30 DAYS CREDIT.

LIFTING QTY 12 TO 15 MT PER DAYS.

Sub Total(INR)	10,0000.00
Others	430,0000.00
CGST	2500.00
SGST	2500.00

In Words : INR FORTY FOUR LAKH FIVE THOUSAND ONLY

Net Total(INR) 440,5000.00

- Prices : Prices are net & firm till completion of order & are on FOR - Sanghipuram Grinding Unit
- Delivery :
- Payment : Within 30 Days from date of Receipt Mat. at site
- Despatch : Please despatch securely packed material to destination:
Delivery at : AT SANGHIPURAM.
Billing : Sanghi Industries Limited
Address : P.O. Sanghipuram, Tal -Abdasa, Kachchh - 370511, Gujarat, India
- Insurance : To be covered by you at your cost / by us. Please inform us despatch details on Fax / Email as soon as the materials are despatched.
- Important Note : GST Invoice (If applicable) should accompany with the transporter or otherwise no bills are payable by us.
- Note : Please Mention this HSN / SAC code, Sanghi Industries Limited's GSTIN details in your all documents & Correspondences.
Invoice : Original of Recipient / Commercial Tax Invoice and Duplicate for Transporter copy (If applicable) must be sent along with material on Factory billing address and Extra copies of all despatch documents must be sent at our Corporate office Ahmedabad.
8. : Seller must be sent the draft invoice before generating final invoice for Buyer's approval.

GST STANDARD CONTRACT CLAUSE

State : GUJARAT
GSTIN : 24AAECS5510Q1Z4

Prepared By
Ashish Sharma

Checked By
Gajendra Sen

Digitally Signed By:
RAKESH KUMAR CHATURVEDI
Wed 25-Dec-2018 16:37:46 IST
For SIL
A550D1810896549A

Continue.....

(These Conditions form an integral part to this Purchase Order)

366

- 1. Delivery Period:** All items must be despatched within the specified delivery period unless the time limit is extended by us. In case items are not despatched within the stipulated delivery period, we reserve the right to obtain items from other sources holding you liable for the difference in prices and incidental expenses arising there from if any.
 - 2. LD Clause:** Timely delivery is the essence of the order. In the event of delay beyond agreed delivery period or non supply of materials the vendor should be liable to pay damages @ 0.5% of the total contract price per week of delay subject to a maximum of 5% of the total price (by way of liquidated damages), prejudice to the right of the purchaser to take any other action. The amount shall also be recoverable from any other contract on account of the Vendor.
 - 3. Guarantee Clause:** The Equipment#s/ Spares to be supplied must be brand new and in first class workmanship. The supplier shall warranty to replace, rectify or repair at their own cost, the components or part of machinery proved to have become unserviceable due to any of above defects, for a period of 12 months from the date of commissioning or 18 months from the date of dispatch. All papers of guarantee/warranty of the goods supplied with proper execution of papers & seal of the supplier on it, should be send to the purchaser along with the goods supplied.
 - 4. Approval of Material Supplied:** The order is placed subject to approval of the material delivered at our works and subject to testing certificates, if applicable. All items which are not approved, being not considered by us in accordance with specifications laid down in the order are liable to be rejected & returned to the supplier at their own risk & cost. If the material is rejected, the proportionate GST, Packing & Forwarding, Lorry/Railway freight etc. paid by us will be recovered from you. Company has a right to take approval of material from any certifying authority & its report regarding genuineness of material.
- Since it is obviously not possible to check each & every piece while receiving and accepting the supply, it is understood that pieces not confirming to the specifications set-out or otherwise found defective/dented/damaged during the course of utilization will be subject to replacement as and when the defect or damage is detected, at the supplier's own risk & cost.
- 5. Packing:** All items should be securely & properly packed to avoid breakage & pilferage in transit. Instruction to transporter for careful handling, if required, depending upon nature of item, should be highlighted on each packing. Delivery challan / packing slip must be put in each packing case.
 - 6. Weight & Measurement:** all the goods supplied should confirm to all the provisions of weight & measurement Act. If the goods supplied require verification & calibrations by weight & measurement act it shall be done at the cost of supplier. Quantity recorded/verified at our stores will be accepted as final & supplier's bill will be passed accordingly.
 - 7. Patent/ Trade Mark/ Copy Right/ Sample:** Supplier alone shall be responsible for any infringement of law or Patent, drawing samples claimed by any other manufacturer or by you. You shall indemnify us against all such claims & shall bear all legal expenses therein.
 - 8. Inspection/ Test Certificate:** All material / equipment shall be inspected by SIL or its representatives before dispatch. At least 15 days notice has to be given by the supplier to SIL for the inspection. In case SIL waives inspection the supplier or sub-supplier will critically inspect and dispatch the same with all test certificates & SIL reserves the right to arrange for third party inspection unless waiver is taken in writing before dispatch of material. However final inspection in such cases will be carried out by us at our works, Sanghipuram. Third party inspection or waiver of inspection by SIL does not absolve supplier from their responsibility of quality and guarantee of equipments.
 - 9. Control Regulations:** The supply & despatch should be arranged in strict conformity with any Control Regulation of Govt. applicable & after obtaining permits, if any, required under the regulations in force from time to time.
 - 10. HSN / SAC details:** Please mention HSN No. of the each material /SAC No of each service against this order & address in your Invoice.
 - 11. Our PAN:** AAEC5510Q.
 - 12. Our GST / UIN Details:** As per state wise details given below.
Gujarat - 24AAEC5510Q1Z4
Maharashtra - 27AAEC5510Q1ZY
Rajasthan - 08AAEC5510Q1ZY
Kerala - 32AAEC5510Q1Z7
Madhya Pradesh - 23AAEC5510Q1Z6
 - 13. Invoice:** All invoices should be sent to us in duplicate mentioning G. S. T. no, State code, our Purchase Order No. and should be properly signed & seal of the authorized person with proper date and contact no. and CIN no in case of registration under the Companies Act.
 - 14. ISO Clause:** You will have to provide all particulars as needed for ISO 9001, 14001, 18001 (OHSAS) & SA 8000 System.
 - 15. Jurisdiction:** Any dispute arising to touching the construction, meaning or the effect of this agreement or any clause herein contained or as to the rights liabilities of the parties herein, shall be subject to the Jurisdiction of the appropriate courts in the city of Ahmedabad only and not any other place.
 - 16. Confidential Information/Non Disclosure Clause :** Each party recognizes that it may be given and have access to certain confidential Information and assets of the other party. Each party undertakes not to use any such confidential information and information about organisation assets except as required by law or permitted hereunder, without the prior written consent of the other party. The parties further undertake that they shall at all times during and after the termination of the Agreement keep the confidential Information confidential and not disclose it to any third party.
 - 17. Arbitration:** In case of any dispute between the parties, the same shall be solved through mutual understanding. In case it persists than the same shall be referred to Arbitration. The Arbitration shall be governed by the The Arbitration and Conciliation Act, 1996 as applicable to whole of India along with subsequent amendments made from time to time. The award passed by the Sole Arbitrator shall be final and binding to all the parties and the place of Arbitration shall be Bhuj. The cost of Arbitration shall be borne by the party itself. The language of Arbitration shall be English (U.K.).
 - 18. Insurance of Goods:** All the goods supplied as per purchase order should be insured by the supplier at his own cost .
Seller shall arrange insurance for 110% of the invoice value from the loading point to unloading point or warehouse to warehouse basis.
 - 19. Acceptance of Order:** We should receive the acceptance of this Order within 03 days from the date of this order. If nothing to the contrary is heard from you within 03 days it will be presumed that this order has been accepted by you.
 - 20. Code of Conduct:** Ref. to the link - http://www.sanghicement.com/themes/bartik/pdf/KPMG_Vendor_Code_Conduct.pdf



481
Sanghi Industries Limited
Clinker Plant, Sanghipuram
PO - Sanghipuram, Tal -
Kachchh-370511, (Gujarat)

Tel : 02831-274131/32/36
Fax : 02831-274106
IMS / COM / F04
Rev.No.00, eff. dt. 01/07/03

367

PO No. : 1719000082 (Ver : 0)

PURCHASE ORDER

Page 2 of 3

1. Seller / Contractor Agrees to do all things (not limited to) like providing GST invoices or other documentation as per GST law relating to the service under this order like, payment of taxes, timely filing of valid statutory returns for the tax period on the goods and service tax portal etc. that may be necessary to match the invoice on GSTN common portal and enable SANGHI INDUSTRIES LIMITED to claim input tax credit in relation any GST payable under this agreement or in respect of any service provided under this order.
2. In case the input tax credit of GST denied or demanded or recovered from SANGHI INDUSTRIES LIMITED on account of any non-compliance by the seller, including non-payment of GST charged and recovered, the seller shall indemnify SANGHI INDUSTRIES LIMITED in respect of all claims of tax, penalty and / or interest, loss, damages, costs, expenses and liability that may arise due to such non compliance.
3. Seller shall maintain high GST compliance rating track record at any given point of time.
4. E Way Bill - "For non generation of E - Way Bill, M/s. Sanghi Industries Ltd. will not be responsible for any consequences whatsoever".

State : GUJARAT
GSTIN : 24AAECS5510Q1Z4

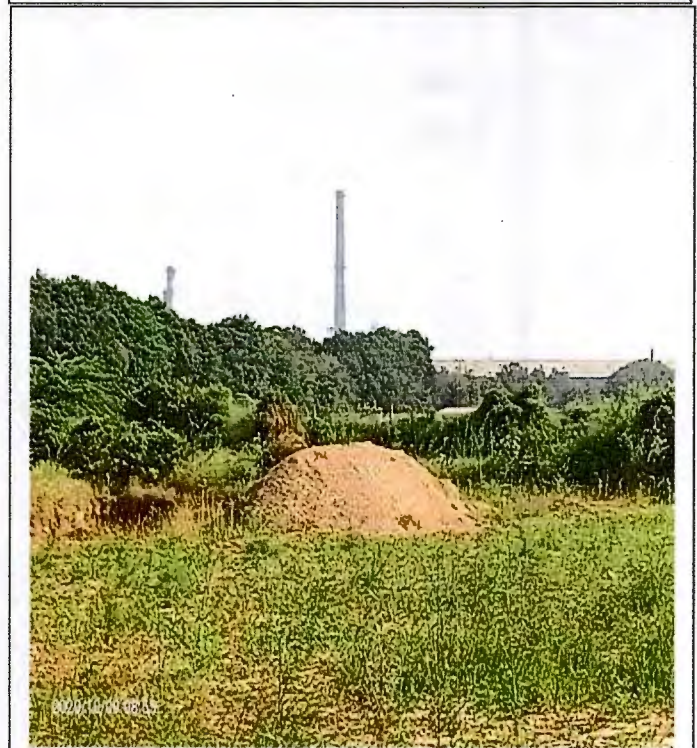
For Sanghi Industries Ltd.

Prepared By
Ashish Sharma

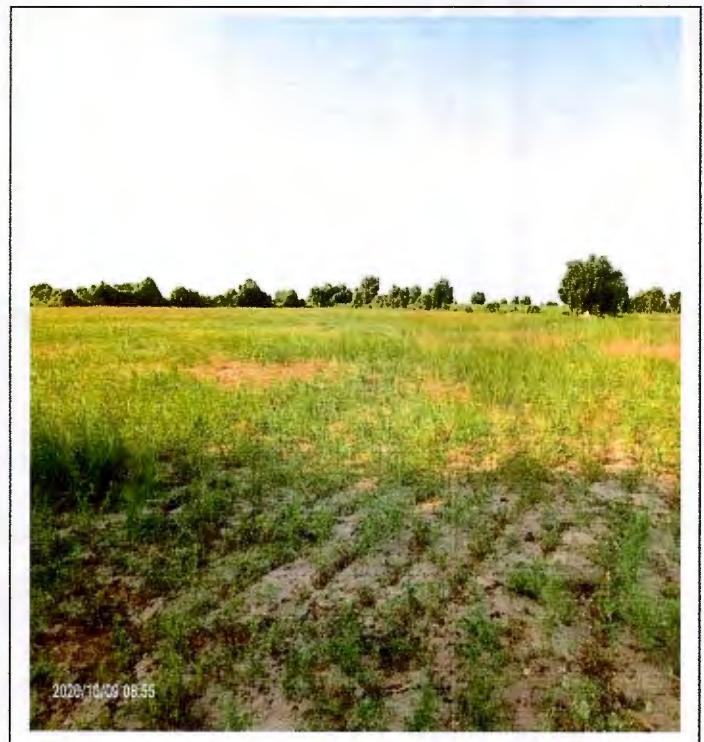
Checked By
Gajendra Sen

Digitally Signed By:
RAKESH KUMAR CHATURVEDI
Wed 25-Dec-2018 16:37:46 IST
For SIL
A550D161089B549A

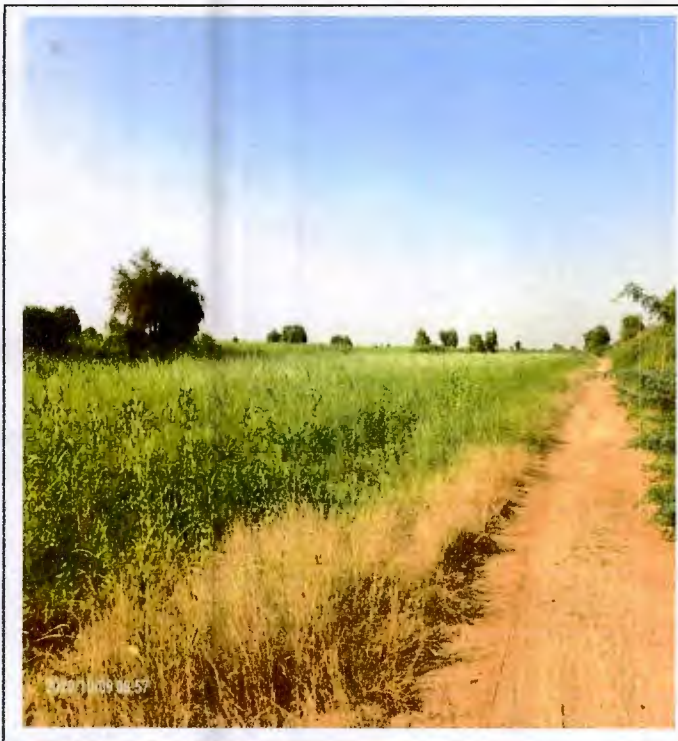
Authorised signatory

Photographs of Near By Boundary Area of ET Plant Dated 08.10.2020

Su
T.C

Photographs of Back Side of Boundary Wall

(370)

Photographs of Back Side of Boundary Wall



Current Details of Companys Boundary Side Farms

Current Details of Companys Boundary Side Farms



Current Details of Companys Boundary Side Farms

373



So
T.C



488

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303-304, Shivalik-7, B/s Bal Adalat, Gondal Road, RAJKOT - 360 002.

Ph. +91 281 2360695 Email : royaleenvironment@live.com admin@royalconsultancy.com

ANNEXURE R-9(Contd)

379

TEST REPORT (WATER)

Test Report No : 609/07/2020-21

Date : 03/08/2020

Work Order No. : ---

Job Card No. : ET/2020-21/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 31/07/2020

Date & Time of Sampling : 30/07/2020 at 10:00 Hrs.

Lab ID : W/19-20/03/11

Date of Testing : 31st to 02nd July 2020

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : **IPU Drinking Water**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.32	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	131	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	61	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	14.8	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	6.8	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.05	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	34	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7.8	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	7	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.06	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	39	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

Rajkot

Tested by

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Page 1 of 1



489

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Ph. +91 281 2360695 Email : royaleenvironment@live.com admin@royalconsultancy.com

TEST REPORT (WATER)

Test Report No : 509/06/2020-21

Date : 30/06/2020

Work Order No. : --

Job Card No. : ET/2020-21/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 27/06/2020

Date & Time of Sampling : 26/06/2020 at 11:00 Hrs.

Lab ID : W/19-20/03/11

Date of Testing : 27th to 30th June 2020

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

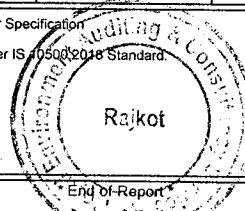
Conditioning if any: NIL

Location of Sample : **ISU Drinking Water**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.23	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	138	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	63	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	18.4	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	8.6	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.06	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	38	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	8.1	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.07	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	35	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory
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376

TEST REPORT (WATER)

Test Report No : 409/03/2020-21

Date : 30/03/2020

Work Order No. : ---

Job Card No. : ET/2020-21/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 17/03/2020

Date & Time of Sampling : 16/03/2020 at 12:00 Hrs.

Lab ID : W/19-20/03/11

Date of Testing : 17th to 20th March 2020

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

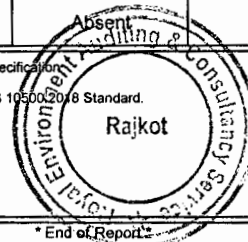
Location of Sample : IPU Drinking Water

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.14	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	140	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	65	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	22.2	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	7.7	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.05	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	35	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7.4	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	5	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.08	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	32	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory



Tested by

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491

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Ph. +91 281 2360695 Email : royaleenvironment@live.com admin@royalconsultancy.com

377**TEST REPORT (WATER)**

Test Report No : 7109/02/2020-21

Date : 03/03/2020

Work Order No. : ---

Job Card No. : ET/2020-21/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 27/02/2020

Date & Time of Sampling : 26/02/2020 at 12:00 Hrs.

Lab ID : W/19-20/11/12

Date of Testing : 27th February 2020 to 03rd February 2020

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : **IPU Drinking Water**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500:2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	6.82	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	132	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	62	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	25.1	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	8.1	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.06	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	32	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7.8	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.07	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	34	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

Tested by

* End of Report *

1. The results relate only to the item tested.

2. The report shall not be reproduced except in full without approval of the laboratory can provide assurance that parts of a report are not taken out of context.

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Page 1 of 1



492

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378

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Ph. +91 281 2360695 Email : royaleenvironment@live.com admin@royalconsultancy.com

TEST REPORT (WATER)

Test Report No : 6109/01/2020-21

Date : 03/02/2020

Work Order No. : —

Job Card No. : ET/2020-21/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 12/01/2020

Date & Time of Sampling : 11/01/2020 at 12:00 Hrs.

Lab ID : W/19-20/11/12

Date of Testing : 13th January 2020 to 17th January 2020

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : **IPU Drinking Water**

Sl. No.	Parameters	Unit	Acceptable Limit	Observed Value	Remarks	IS Standard
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	—	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	6.91	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	148	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	68	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	28.5	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	8.4	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.08	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	38	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	8.4	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	8	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.09	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	39	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

Rajkot

Tested by

* End of Report *

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379

TEST REPORT (WATER)

Test Report No : 5109/12/2019-20

Date : 03/01/2020

Work Order No. : ---

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 29/12/2019

Date & Time of Sampling : 28/12/2019 at 12:00 Hrs.

Lab ID : W/19-20/11/12

Date of Testing : 29th December 2019 to 2nd January 2020

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : ISU Water Cooler at Canteen

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2013	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.27	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	138	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	76	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	31.6	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5.1	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.04	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	35	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7.3	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.03	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	34	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

Rajkot

Tested by

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494

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TEST REPORT (WATER)

Test Report No : 4109/11/2019-20

Date: 03/12/2019

Work Order No. : ---

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 28/11/2019

Date & Time of Sampling : 27/11/2019 at 12:00 Hrs.

Lab ID : W/19-20/11/12

Date of Testing : 28 to 03 December 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : **IPU Water Cooler at Canteen**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.32	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	125	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	71	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	34.2	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5.3	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.05	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	38	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7.1	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	8	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.04	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	36	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

* End of Report

Tested by

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495

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381**TEST REPORT (WATER)**

Test Report No : 3109/10/2019-20

Date: 02/11/2019

Work Order No. :

Job Card No. : CT/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 26/10/2019

Date & Time of Sampling : 25/10/2019 at 12:00 Hrs.

Lab ID : W/19-20/10/12

Date of Testing : 26th to 31st October 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

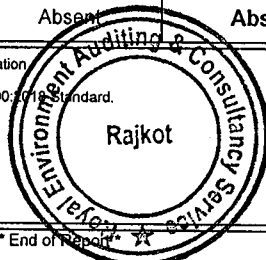
Conditioning if any: NIL

Location of Sample : ISU Water Cooler at Canteen

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.36	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	135	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	74	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	36.8	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5.1	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.06	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	41	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7.3	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	8.2	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.05	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	39	IS 3025 : Part 23
18.	E Coli.	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 standard.

Authorized Signatory
Tested by

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496

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382

TEST REPORT (WATER)

Test Report No : 2028/09/2019-20

Date: 03/10/2019

Work Order No. : —

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 28/09/2019

Date & Time of Sampling : 28/09/2019 at 14:00 Hrs.

Lab ID : W/19-20/09/12

Date of Testing : 29th September to 2nd October 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : ISU Water Coller at Canteen

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.45	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	120	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	65	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	33.5	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	4.8	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.08	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	45	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	6.2	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	8.8	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.06	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	35	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

Tested by

* End of Report *

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383

TEST REPORT (WATER)

Test Report No : 1028/08/2019-20

Date: 03/09/2019

Work Order No. : ---

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 26/08/2019

Date & Time of Sampling : 25/08/2019 at 14:00 Hrs.

Lab ID : W/19-20/08/25

Date of Testing : 26th to 31st august 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Royal Environment

Sampling Method : IS 3025 : Part 1

Conditioning if any: NIL

Location of Sample : IPU Water Coller at Canteen

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.38	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	127	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	76	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	32.5	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5.1	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.04	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	45	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	8	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6.2	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.05	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	32	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Authorized Signatory

* End of Report *

Tested by

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384

Ref. No. : 156/08/2019-20

Date : 26/08/2019

WASTE WATER ANALYSIS REPORT

Name of company : Electrotherm (India) Limited,

Village: Samakhiali, Taluka: Bhachau,

Dist. Kutch.

 Date of Sampling : 10th August 2019

Source of Sample : STP Plant, Nr. ISU Canteen Area

Sr. No.	Parameters	Unit	Permissible Limits(*)	STP I/L	STP O/L
1	pH	---	---	8.54	7.77
2	BOD (5 Days at 20°C)	mg/l	20	40	9.0
3	COD	mg/l	---	145	25.0
4	Suspended Solids	mg/l	30	165	22
5	Residual chlorine	mg/l	Min. 0.5	N.A.	0.7

(*) Permissible Limits are as per GPCB CC&A and only applicable to STP O/L

N.A. = Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst


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Date : 26/08/2019

385

Ref. No. : 157/08/2019-20

WASTE WATER ANALYSIS REPORT

Name of company : Electrotherm (India) Limited,

Village: Samakhiali, Taluka: Bhachau,

Dist. Kutch.

 Date of Sampling : 10th August 2019

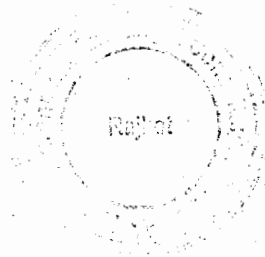
Source of Sample : STP Plant, Nr. IPU Canteen Area

Sr. No.	Parameters	Unit	Permissible Limits(*)	STP I/L	STP O/L
1	pH	---	---	8.33	7.12
2	BOD (5 Days at 20°C)	mg/l	20	44	8.0
3	COD	mg/l	---	135	22.0
4	Suspended Solids	mg/l	30	155	18
5	Residual chlorine	mg/l	Min. 0.5	N.A.	0.6

(*) Permissible Limits are as per GPCB CC&A and only applicable to STP O/L

N.A. = Not Applicable

Royal Environment Auditing & Consultancy Service


 Jagdish
Analyst


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Date : 26/08/2019

Ref. No. : 158/08/2019-20

386

WASTE WATER ANALYSIS REPORT

Name of company : Electrotherm (India) Limited,

Village: Samakhiali, Taluka: Bhachau,

Dist. Kutch.

 Date of Sampling : 10th August 2019

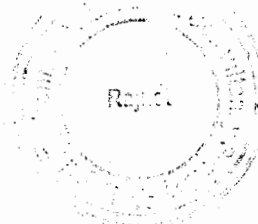
Source of Sample : STP Plant, New Labour Colony

Sr. No.	Parameters	Unit	Permissible Limits(*)	STP I/L	STP O/L
1	pH	---	---	8.11	7.15
2	BOD (5 Days at 20°C)	mg/l	20	45	8.0
3	COD	mg/l	---	165	22.0
4	Suspended Solids	mg/l	30	125	16
5	Residual chlorine	mg/l	Min. 0.5	N.A.	0.6

(*) Permissible Limits are as per GPCB CC&A and only applicable to STP O/L

N.A. = Not Applicable

Royal Environment Auditing & Consultancy Service


 J. S. D. S. K.
Analyst



501

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TEST REPORT (WATER)

Test Report No : 928/07/2019-20

Date: 31/07/2019

Work Order No. : ---

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 27/07/2019

Date & Time of Sampling : 26/07/2019 at 14:00 Hrs.

Lab ID : W/19-20/07/11

Date of Testing : 27th to 31st July 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Mr. Jagdish Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : **ISU Water Coller at Canteen**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2018	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.42	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	123	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	74	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	32.8	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5.2	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.05	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	48	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	7	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6.4	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.04	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	34	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS-10500:2018 Standard

Authorized Signatory
Digvijay Jadeja

Rajkot

Analyst

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502

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388**TEST REPORT (WATER)**

Test Report No : 828/06/2019-20

Date: 03/07/2019

Work Order No. : ---

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 28/06/2019

Date & Time of Sampling : 27/06/2019 at 14:00 Hrs.

Lab ID : W/19-20/06/17

Date of Testing : 29th June to 3rd July 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Mr. Vijay Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : **ISU Water Coller at Canteen**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2015	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.45	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	120	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	75	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	33.5	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5.3	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.06	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	50	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	8	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6.2	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.04	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	35	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2018, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2018 Standard.

Digvijay Jadeja
Authorized Signatory
Digvijay Jadeja

* End of Report *

Hurch
Analyst

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503

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389**TEST REPORT (WATER)**

Test Report No : 728/05/2019-20

Date: 05/06/2019

Work Order No. : ---

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 31/05/2019

Date & Time of Sampling : 30/05/2019 at 14:00 Hrs.

Lab ID : W/18-19/05/17

Date of Testing : 01st to 04th June 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Mr. Vijay Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : ISU Water Coller at Canteen

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2015	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	—	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.65	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	112	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	81	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	35.0	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	4	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.04	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	43	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	11	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	5.7	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.03	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	45	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2015, Drinking Water Specification.

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2015 Standard. Rajkot

Authorized Signatory
Digvijay jadeja

Analyst

* End of Report *

1. The results relate only to the item tested.

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Doc. No. F/7.8/04, Issue No. 02, Issue Date : 01-10-18, Ammd No.—, Ammd Date : —



504

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390

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TEST REPORT (WATER)

Test Report No : 729/05/2019-20

Date: 05/06/2019

Work Order No. : ---

Job Card No. : ET/2019-20/07

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 31/05/2019

Date & Time of Sampling : 30/05/2019 at 14:00 Hrs.

Lab ID : W/10-19/05/17

Date of Testing : 01st to 04th June 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Mr. Vijay Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : IPU Water Coller at Canteen

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2015	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.59	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	128	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	89	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	38.6	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	6	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.05	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	38	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	12	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6.2	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.02	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	60	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absence of Alternate Source as per IS 10500 : 2015, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2015 Standard.

[Signature]
Authorized Signatory
Digvijay jadeja

Rajkot

[Signature]

Analyst

* End of Report *

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Page 1 of 1



505

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391

TEST REPORT (WASTE WATER)

Test Report No : 730/05/2019-20

Date: 05/06/2019

Work Order No : ET/001/2017-18

Job Card No. : ET/2019-20/08

Name of Company : **Electrotherm (India) Limited,**

Village: Samakhiali, Taluka: Bhachau,

District: Kutch

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 31/05/2019

Date & Time of Sampling : 30/05/2019 at 14:00 Hrs.

Lab ID : W/18-19/05/18

Date of Testing : 01st to 04th June 2019

Sample Type : Waste Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Treated Effluent Water

Sample Collected By : Mr. Vijay Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : Treated Waste Water - ETP Outlet

Sr. No.	Parameters	Unit	Permissible Limits as per GPCB	Results	Test Method
01.	pH	pH Units	6.5 to 8.5	7.63	IS : 3025, Part - 11
02.	Temperature	°C	40°C	33	IS : 3025, Part - 9
03.	Color	pt.co.	100	5	IS : 3025, Part - 4
04.	Suspended Solids	mg/l	100	13	IS : 3025, Part - 17
05.	Oil & Grease	mg/l	10	N.D	IS : 3025, Part - 39
06.	Phenolic Compound	mg/l	1.0	N.D	IS : 3025, Part - 43
07.	Ammonical Nitrogen	mg/l	50	2.5	IS : 3025, Part - 34
08.	BOD (3 days 27°C)	mg/l	30	26	IS : 3025, Part - 44
09.	COD	mg/l	100	81	APHA : 5220 C
10.	Total Dissolve Solids	mg/l	2100.0	1364	IS : 3025, Part - 16
11.	Chlorides	mg/l	600.0	517.2	IS : 3025, Part - 32
12.	Sulphates	mg/l	1000.0	261	IS : 3025, Part - 24
13.	Sodium Absorption Ratio	...	26	25	Calculation Method
14.	Percent Sodium	%	60 %	56	IS : 3025, Part - 45
15.	Sulphides	mg/l	2.0	N.D	IS : 3025, Part - 29

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506

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TEST REPORT (WASTE WATER)

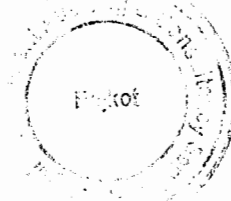
Name of Company : Electrotherm (India) Limited,

Date: 05/06/2019

Test Report No : 730/05/2019-20

Lab ID : W/18-19/05/18

Sr. No.	Parameters	Unit	Permissible Limits as per GPCB	Results	Test Method
16.	Total Chromium	mg/l	2.0	0.06	APHA : 3500 Cr - B
17.	Hexavalent Chromium	mg/l	0.1	0.04	APHA : 3500 Cr - B
18.	Copper	mg/l	3.0	N.D	APHA : 3500 Cu
19.	Lead	mg/l	0.1	0.02	IS : 3025, Part - 47
20.	Mercury	mg/l	0.01	N.D	APHA : 3500 Hg
21.	Nickle	mg/l	3.0	N.D	IS : 3025, Part - 54
22.	Zinc	mg/l	5.0	0.02	APHA : 3500 Zn - B
23.	Cadmium	mg/l	2.0	N.D	APHA : 3500 Cd
24.	Cyanides	mg/l	0.2	N.D	IS : 3025, Part - 27
25.	Arsenic	mg/l	0.2	N.D	APHA : 3500 As - B
26.	Fluoride	mg/l	2	0.6	APHA : 4500 F ⁻ - D
27.	Insecticides/Pesticides	mg/l	Absent	Absent	USEPA
28.	Bio-Assay test	--	90% Survival after 96 Hrs. of 100% Effluent	95%	APHA

Authorized Signatory
Digvijay jadeja

Analyst

* End of Report *

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Page 2 of 2



507

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393**TEST REPORT (WATER)**

Test Report No : 718/04/2019-20

Date: 01/05/2019

Work Order No. : —

Job Card No. : ET/2019-20/04

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 25/04/2019

Date & Time of Sampling : 24/04/2019 at 14:00 Hrs.

Lab ID : W/18-19/04/16

Date of Testing : 26th to 30th April 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Mr. Vijay Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : **ISU Water Coller at Canteen**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2015	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.72	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	117	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	88	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	36.0	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	5	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.05	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	41	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	9	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	5.6	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.02	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	48	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absense of Alternate Source as per IS 10500 : 2015, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2015 Standard

Authorized Signatory
Digvijay jadeja

Analyst

* End of Report *

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Doc. No. F/7.8/04, Issue No. 02, Issue Date : 01-10-18, Ammd No.—, Ammd Date : —



508

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394

TEST REPORT (WATER)

Test Report No : 719/04/2019-20

Date: 01/05/2019

Work Order No. : ---

Job Card No. : ET/2019-20/05

Name of Company : **Electrotherm (India) Limited**

Village : Samakhiali, Taluka : Bhachau,

District : Kutch.

Attention : **Mr. B. S. Sharma**

Date of Sample Receipt : 25/04/2019

Date & Time of Sampling : 24/04/2019 at 14:00 Hrs.

Lab ID : W/18-19/03/16

Date of Testing : 26th to 30th April 2019

Sample Type : Drinking Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Drinking Water

Sample Collected By : Mr. Vijay Makvana

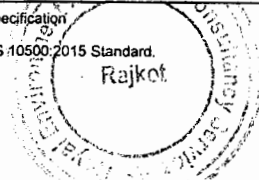
Sampling Method : IS 3025 : Part 1

Location of Sample : **IPU Water Coller at Canteen**

Sr. No.	Parameters	Unit	Acceptable Limits	Permissible Limits as per IS 10500-2015	Results	Test Method
01.	Colour	Hazen Units	5	15	Colourless	IS 3025 : Part 4
02.	Odour	---	Agreeable	No relaxation	Odour less	IS 3025 : Part 5
03.	Turbidity	mg/l	1	5	NIL	IS 3025 : Part 10
04.	pH	mg/l	6.5 to 8.5	No relaxation	7.63	IS 3025 : Part 11
05.	T.D.S.	mg/l	500	2000	132	IS 3025 : Part 16
06.	Total Hardness	mg/l	200	600	91	IS 3025 : Part 21
07.	Ca as Ca	mg/l	75	200	40.6	IS 3025 : Part 40
08.	Mg as Mg	mg/l	30	100	4	IS 3025 : Part 46
09.	Copper	mg/l	0.05	1.5	NIL	IS 3025 : Part 42
10.	Iron	mg/l	0.3	No relaxation	0.06	IS 3025 : Part 53
11.	Manganese	mg/l	0.1	0.3	NIL	IS 3025 : Part 59
12.	Chloride	mg/l	250	1000	41	IS 3025 : Part 32
13.	Sulphate	mg/l	200	400	11	IS 3025 : Part 24
14.	Nitrate	mg/l	45	No relaxation	6.1	IS 3025 : Part 34
15.	Fluoride	mg/l	1.0	1.5	0.03	IS 3025 : Part 60
16.	Phenolic Compound	mg/l	0.001	0.002	NIL	IS 3025 : Part 43
17.	Alkalinity	mg/l	200	600	58	IS 3025 : Part 23
18.	E Coli	MPN/100ml	Absent	Absent	Absent	APHA

(*) Permissible Limit in the Absense of Alternate Source as per IS 10500 : 2015, Drinking Water Specification

Statement of Conformity : The water is safe to drink with respect of parameters checked above as per IS 10500:2015 Standard.

Authorized Signatory
Digvijay Jadeja

Analyst

* End of Report *

1. The results relate only to the item tested.

2. The report shall not be reproduced except in full without approval of the laboratory can provide assurance that parts of a report are not taken out of context.

Doc. No. F/7.8/04, Issue No. 02, Issue Date : 01-10-18, Ammd No.--, Ammd Date : --



509

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303-304, Shivalik-7, B/s Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph. +91 281 2360695 Email : royalsenvironment@live.com admin@royalconsultancy.com**TEST REPORT (WASTE WATER)**

Test Report No : 720/04/2019-20

Date: 01/05/2019

Work Order No : ET/001/2017-18

Job Card No. : ET/2019-20/06

Name of Company : **Electrotherm (India) Limited,**

Village: Samakhiali, Taluka: Bhachau,

District: Kutch.

Attention : Mr. B. S. Sharma

Date of Sample Receipt : 25/04/2019

Date & Time of Sampling : 24/04/2019 at 14:00 Hrs.

Lab ID : W/18-19/03/17

Date of Testing : 26th to 30th April 2019

Sample Type : Waste Water

Description of Sample Packing : Plastic Carbo

Type of Sampling : Grab

Quantity of Sample : 2 Ltr.

Description : Treated Effluent Water

Sample Collected By : Mr. Vijay Makvana

Sampling Method : IS 3025 : Part 1

Location of Sample : Treated Waste Water - ETP Outlet

Sr. No.	Parameters	Unit	Permissible Limits as per GPCB	Results	Test Method
01.	pH	pH Units	6.5 to 8.5	7.71	IS : 3025, Part - 11
02.	Temperature	°C	40°C	32	IS : 3025, Part - 9
03.	Color	pt.co.	100	6	IS : 3025, Part - 4
04.	Suspended Solids	mg/l	100	11	IS : 3025, Part - 17
05.	Oil & Grease	mg/l	10	N.D	IS : 3025, Part - 39
06.	Phenolic Compound	mg/l	1.0	N.D	IS : 3025, Part - 43
07.	Ammonical Nitrogen	mg/l	50	2.7	IS : 3025, Part - 34
08.	BOD (3 days 27°C)	mg/l	30	23	IS : 3025, Part - 44
09.	COD	mg/l	100	86	APHA : 5220 C
10.	Total Dissolve Solids	mg/l	2100.0	1263	IS : 3025, Part - 16
11.	Chlorides	mg/l	600.0	518.0	IS : 3025, Part - 32
12.	Sulphates	mg/l	1000.0	279	IS : 3025, Part - 24
13.	Sodium Absorption Ratio	...	26	23	Calculation Method
14.	Percent Sodium	%	60 %	51	IS : 3025, Part - 45
15.	Sulphides	mg/l	2.0	N.D	IS : 3025, Part - 29

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510

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TEST REPORT (WASTE WATER)

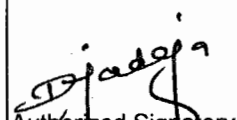
Name of Company : Electrotherm (India) Limited,

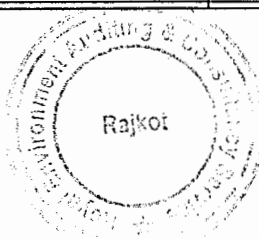
Date: 01/05/2019

Test Report No : 720/04/2019-20

Lab ID : W/18-19/03/17

Sr. No.	Parameters	Unit	Permissible Limits as per GPCB	Results	Test Method
16.	Total Chromium	mg/l	2.0	0.07	APHA : 3500 Cr - B
17.	Hexavalent Chromium	mg/l	0.1	0.05	APHA : 3500 Cr - B
18.	Copper	mg/l	3.0	N.D	APHA : 3500 Cu
19.	Lead	mg/l	0.1	0.03	IS : 3025, Part - 47
20.	Mercury	mg/l	0.01	N.D	APHA : 3500 Hg
21.	Nickle	mg/l	3.0	N.D	IS : 3025, Part - 54
22.	Zinc	mg/l	5.0	0.01	APHA : 3500 Zn - B
23.	Cadmium	mg/l	2.0	N.D	APHA : 3500 Cd
24.	Cyanides	mg/l	0.2	N.D	IS : 3025, Part - 27
25.	Arsenic	mg/l	0.2	N.D	APHA : 3500 As - B
26.	Fluoride	mg/l	2	0.5	APHA : 4500 F ⁻ - D
27.	Insecticides/Pesticides	mg/l	Absent	Absent	USEPA
28.	Bio-Assay test	--	90% Survival after 96 Hrs. of 100% Effluent	95%	APHA


Authorized Signatory
Digvijay Jadeja




Analyst

* End of Report *

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Page 2 of 2


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397

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Ref. No. : 708/08/2020-21

Date : 03/09/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

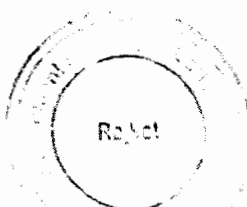
Date of Sampling : 28th to 29th August 2020

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
	Time of sampling	Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Permissible Limits	75.0	70.0
01.	DIP Plant	72.1	58.4
02.	SMS	73.2	57.6
03.	Rolling Mill - 1	70.4	55.4
04.	Yobyke Division	68.4	56.3
05.	Second Security Gate	71.6	55.4
	CPP Plant		
06.	Inside CCR	69.3	55.3
07.	Nr. Turbine	72.7	56.2
08.	Nr. Boiler	71.4	55.1
09.	At CPP Ground floor	69.4	57.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019



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398

Ref. No. : 608/07/2020-21

Date :03/08/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

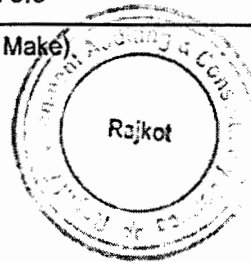
Date of Sampling : 30th to 31st July 2020

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	71.4	57.5
02.	SMS	72.3	56.5
03.	Rolling Mill - 1	69.5	54.3
04.	Yobyke Division	67.3	55.2
05.	Second Security Gate	70.5	54.3
	CPP Plant		
06.	Insidé CCR	70.2	54.2
07.	Nr. Turbine	73.8	55.1
08.	Nr. Boiler	72.5	54.4
09.	At CPP Ground floor	70.3	56.3

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019

*Jagdish**Jagdish*
Analyst



513

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Ph. +91 281 2360695 Email : royaleenvironment@live.com admin@royalconsultancy.com

399

Ref. No. : 408/03/2020-21

Date :30/06/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

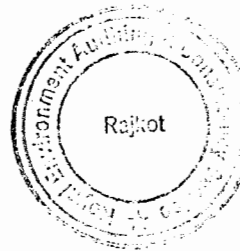
Date of Sampling : 27th to 28th June 2020

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	70.3	56.4
02.	SMS	71.2	55.4
03.	Rolling Mill - 1	68.4	53.2
04.	CPP Plant	69.6	56.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019



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Ref. No. : 408/03/2020-21

Date :30/03/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

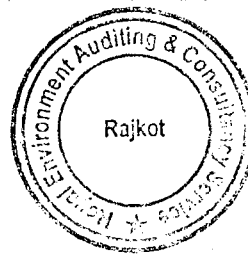
Date of Sampling : 15th to 16th March 2020

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	71.2	57.3
02.	SMS	73.3	56.6
03.	Rolling Mill – 1	67.5	54.4
04.	Yobyke Division	70.5	57.3
05.	Second Security Gate	72.3	53.5
	CPP Plant		
06.	Inside CCR	74.1	55.1
07.	Nr. Turbine	73.3	56.3
08.	Nr. Boiler	72.5	55.2
09.	At CPP Ground floor	71.5	57.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019



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401

Ref. No. : 7108/02/2020-21

Date :03/03/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (Indla) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

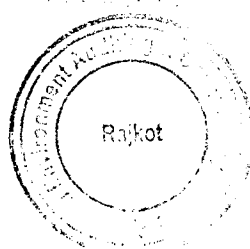
Date of Sampling : 27th to 28th February 2020

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	72.3	56.3
02.	SMS	74.1	57.8
03.	Rolling Mill – 1	68.5	55.2
04.	Yobyke Division	71.8	58.3
05.	Second Security Gate	67.3	52.5
	CPP Plant		
06.	Inside CCR	73.5	54.6
07.	Nr. Turbine	72.1	57.3
08.	Nr. Boiler	74.2	56.4
09.	At CPP Ground floor	73.4	58.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019



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Ref. No. : 6108/01/2020-21

Date : 03/02/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 09th to 10th January 2020

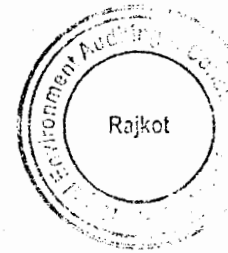
Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	74.6	54.2
02.	SMS	72.8	55.3
03.	Rolling Mill - 1	71.1	51.3
04.	Yobyke Division	69.4	54.3
05.	Second Security Gate	62.3	55.2
	CPP Plant		
06.	Inside CCR	71.4	52.3
07.	Nr. Turbine	70.4	55.2
08.	Nr. Boiler	69.8	59.8
09.	At CPP Ground floor	71.6	59.8

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019

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403

Ref. No. : 5108/12/2019-20

Date : 03/01/2020

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th December 2019

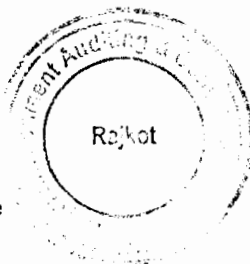
Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
	Time of sampling	Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Permissible Limits	75.0	70.0
01.	DIP Plant	72.8	55.2
02.	SMS	71.6	53.6
03.	Rolling Mill – 1	73.2	52.4
04.	Yobyke Division	70.8	55.1
05.	Second Security Gate	65.3	52.7
	CPP Plant		
06.	Inside CCR	73.5	51.4
07.	Nr. Turbine	71.6	54.3
08.	Nr. Boiler	72.4	57.2
09.	At CPP Ground floor	73.9	60.1

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019

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404

Ref. No. : 4108/11/2019-20

Date: 03/12/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 28th to 29th November 2019

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	74.8	53.6
02.	SMS	73.6	51.8
03.	Rolling Mill – 1	71.2	50.6
04.	Yobyke Division	69.5	53.2
05.	Second Security Gate	68.2	51.7
	CPP Plant		
06.	Inside CCR	71.5	55.4
07.	Nr. Turbine	73.2	56.2
08.	Nr. Boiler	71.6	58.7
09.	At CPP Ground floor	74.3	62.5

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019



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Ph. +91 281 2360695 Email : royalenvironment@live.com admin@royalconsultancy.com

405

Ref. No. : 3108/10/2019-20

Date: 02/11/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th October 2019

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	73.6	55.2
02.	SMS	74.4	53.7
03.	Rolling Mill – 1	69.1	52.3
04.	Yobyke Division	67.3	51.4
05.	Second Security Gate	65.8	52.1
	CPP Plant		
06.	Inside CCR	72.1	57.5
07.	Nr. Turbine	74.2	59.7
08.	Nr. Boiler	73.9	60.6
09.	At CPP Ground floor	72.4	65.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2019

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Ref. No. : 2027/09/2019-20

Date: 03/10/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

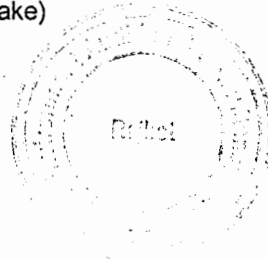
Date of Sampling : 28th to 29th September 2019

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	74.5	54.6
02.	SMS	73.2	53.4
03.	Rolling Mill – 1	68.5	51.8
04.	Yobyke Division	65.3	50.8
05.	Second Security Gate	64.5	54.6
	CPP Plant		
06.	Inside CCR	71.6	58.7
07.	Nr. Turbine	73.5	61.5
08.	Nr. Boiler	72.5	62.5
09.	At CPP Ground floor	74.1	66.8

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2018



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407

Ref. No. : 1027/08/2019-20

Date: 03/09/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 29th to 30th august 2019

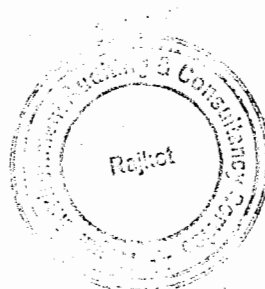
Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	72.8	56.4
02.	SMS	71.2	55.2
03.	Rolling Mill - 1	66.5	53.6
04.	Yobyke Division	63.2	53.1
05.	Second Security Gate	67.4	57.4
	CPP Plant		
06.	Inside CCR	72.5	61.5
07.	Nr. Turbine	71.7	63.7
08.	Nr. Boiler	74.3	65.9
09.	At CPP Ground floor	71.4	67.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2018

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Ref. No. : 8927/07/2019-20

Date: 31/07/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 25th to 26th July 2019

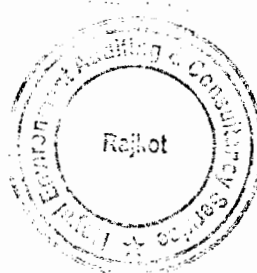
Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	73.1	58.2
02.	SMS	70.8	56.4
03.	Rolling Mill - 1	67.3	55.3
04.	Yobyke Division	64.8	52.1
05.	Second Security Gate	67.3	56.8
	CPP Plant		
06.	Inside CCR	73.6	62.7
07.	Nr. Turbine	71.8	64.3
08.	Nr. Boiler	73.5	66.4
09.	At CPP Ground floor	70.2	68.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2018

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409

Ref. No. : 827/06/2019-20

Date: 03/07/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 27th to 28th June 2019

Sr. No. Location of Sampling**Noise Level Avg. in dB (A)****Time of sampling****Day Time****6.00 AM - 10.00 PM****Night Time****10.00 PM - 6.00 AM****Permissible Limits****75.0****70.0**

01. DIP Plant

72.6

59.8

02. SMS

71.4

57.6

03. Rolling Mill – 1

68.2

56.3

04. Yobyke Division

65.2

54.6

05. Second Security Gate

66.4

57.1

CPP Plant

06. Inside CCR

74.2

63.2

07. Nr. Turbine

72.2

65.1

08. Nr. Boiler

73.1

69.6

09. At CPP Ground floor

70.6

67.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Calibration Done on : 13/09/2018

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410

Ref. No. : 727/05/2019-20

Date: 05/06/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

Date of Sampling : 30th to 31th May 2019

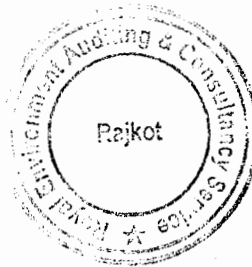
Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	73.1	60.3
02.	SMS	70.6	58.7
03.	Rolling Mill - 1	68.3	56.3
04.	Yobyke Division	63.4	53.4
05.	Second Security Gate	65.2	58.9
	CPP Plant		
06.	Inside CCR	73.5	62.1
07.	Nr. Turbine	71.4	64.7
08.	Nr. Boiler	72.3	68.2
09.	At CPP Ground floor	71.2	66.8

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 12/09/2019

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Ref. No. : 717/04/2019-20

Date: 01/05/2019

AMBIENT NOISE LEVEL MONITORING

Name of company : Electrotherm (India) Limited,
Village: Samakhiali, Taluka: Bhachau,
Dist. Kutch.

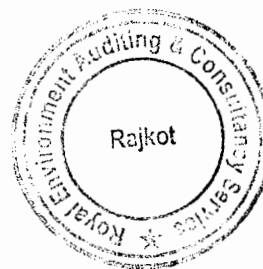
Date of Sampling : 24th to 25th April 2019

Sr. No.	Location of Sampling	Noise Level Avg. in dB (A)	
		Day Time 6.00 AM - 10.00 PM	Night Time 10.00 PM - 6.00 AM
	Time of sampling		
	Permissible Limits	75.0	70.0
01.	DIP Plant	72.5	61.8
02.	SMS	71.4	59.7
03.	Rolling Mill – 1	69.2	55.7
04.	Yobyke Division	61.7	51.4
05.	Second Security Gate	66.7	56.9
	CPP Plant		
06.	Inside CCR	71.6	61.7
07.	Nr. Turbine	73.6	63.5
08.	Nr. Boiler	71.5	66.8
09.	At CPP Ground floor	70.3	64.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 12/09/2019



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GPCB

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382 010

Phone : (079) 23222425

(079) 23232152

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY R.P.A.D.**NOTICE UNDER SECTION (31) (A) OF THE AIR (PREVENTION AND CONTROL OF POLLUTION) ACT-1981**

WHEREAS you are having industrial plant in name of **Electrotherm (India) Ltd (Sponge Iron & DI Pipe Plant)** located at **Survey No 325, Vill: - Samakhiyali, Dist: - Kutch - 370140** engaged in manufacturing of Steel plant

AND WHEREAS the Gujarat Pollution Control Board has issued CC&A for manufacturing of steel in Consent Order no AWH-79693 dated 17/06/2016 issued vide order No **PC/CCA-KUTCH-294(13)/GPCB ID-17826/355742, dated 11/05/2016 valid up 22/03/2021**, subject to the conditions mentioned therein.

AND WHEREAS during the inspection with reference complaint visited on 20/6/2018 by the Board and it was also observed that;

- 1) Provided CEMS for measuring various air parameters are not in operation.
- 2) Black dust observed on agricultural land parcel
- 3) Fugitive emission observed from Induction furnace.

Now, therefore I **Sushil Vegda, Senior Environment Engineer**, Gujarat Pollution Control Board proposes to issue direction under section (31) (A) of Air (Prevention and Control of Pollution) Act-1981 as under:

- 1) To operate CEMS continuously for all parameters.
- 2) Preventive measures shall be taken to control fugitive emission generated from Induction furnace
- 3) Provided all APC measures shall be operated continuously to prevent to spread on dust to nearby area

You are hereby directed to reply to the given directions within 15 days from date of issue of this notice. Failing to this, it will be deemed to be passed without further reference to you.

For and on behalf of
Gujarat Pollution Control Board

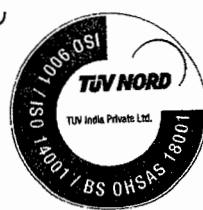
(Signature)
(Sushil Vegda)

Senior Environmental Engineer

No. PC/CCA-KUTCH-294(13)/GPCB ID-17826/

Date: 27/06/2018

To,
✓ **Electrotherm (India) Ltd (Sponge Iron & DI Pipe Plant),**
Survey No: 325, Vill:- Samakhiyali,
Dist:- Kutch - 370140.



Ref: ROEK/NOD/UH/GNGR/18-19/01
2nd July 2018

ANNEXURE R-12

(413)

To,
The Unit Head East Kutch (Shri Sushil Vegda Sab),
Gujarat Pollution Control Board,
Sector 10-A, Paryavaran Bhavan,
Gandhinagar.

Subject: Submission of Compliance in reference of NOT letter no 459451 online generated dated 27th June 2018.

Ref. : Our User ID: 17826

Respected Sir,

This has reference to the above subject matter we have received the above online generated notice through xgn on dated 27th June 2018 in continuation with observations given to us by GPCB East Kutch team, Gandhidham during their visit to our plant for the inspection on dated 20.06.2018.

In this connection, we are earnestly submitting herewith our compliance report for your kind considerations.

Sr. No.	Observation in NOTICE	Compliance/Action Taken by Electrotherm
1.	To operate CEMS continuously for all parameter	1. Sir, we would like to bring your kind notice that the inspecting team of R.O East Kutch has very clearly mentioned in the inspection report. Sir at the time of visit our CEMS system was under maintenance for up gradation of Modem Work for smooth working. Now the same work is already completed and all the data is going to GPCB and CPCB server on continuously basis without interruption through modem. We are attaching here with a copy of the same as an Annexure I for your kind reference please. 2. Sir apart from this we have also formed an Environment Cell at our Plant to monitor day to day activity & the same form to be headed by Top Management & Plant Head and also we have decided to conduct meeting

Corporate Office:

Survey No. 72, Palodia, Via Thaltej, Ahmedabad, -382115, Gujarat, India.

Phone: +91-2717-660550, 234553-7, Fax: +91-2717-233322, 233072, Website: www.electrotherm.com

Works:

Survey No. 325, Nr. Toll Naka, Village: Samakhiali, Ta. Bhachau-370 150, Dist. Kutch, Gujarat, India.

Phone: +91-2837-283328, 283385, Fax: +91-2837-283329.

Registered Office:

A1, Skylark Apartment, Satellite Road, Satellite, Ahmedabad - 380 015, Gujarat (India), Phone: +91-79-26768844, Fax: +91-79-26768855.

CIN No.: L29249GJ1986PLC009126

Gujarat Pollution Control Board
Head Office
Sector No. 10-A,
Gandhinagar-382010



414



		on environment issues with senior person on monthly basis. We are attaching here with a copy of Environment Cell as an <u>Annexure: 2.</u>
2.	Preventive measures shall be taken to control fugitive emission generated from Induction Furnace.	Sir, We again draw your kind attention to the inspection remarks in Serial No 1 where clearly written that fugitive emission found due to fast velocity of winds at the time of visit & they have asked to ensure APCM should work on maximum capacity all the time. Sir we are taking utmost to control our emission of Induction Furnace for that we have we have also increased the size of Suction Hood a copy of the same is enclosed here with as an <u>Annexure 3.</u>
3.	Provided all APC measures shall be operated continuously to prevent to spread on dust to nearby area.	Sir in this regards we would like to bring your kind notice that our all the APC Measures are working 100% all the time. Sir we are taking utmost care to control Air emission and light and thus material such as fly ash is continued with in the stocks but due to fast winds and sometimes whirl winds and in such case all the measures to control the pollution fails. We are keeping fly ash and slag under proper care and observation with the help of water sprinklers and keeping under cover. A copy of manual and automatic water sprinklers is marked as <u>an Annexure 4.</u>

In the light of above it is requested that the Notice of Direction, may please be reconsidered. Further we would like to bring your kind information that we are completely following and abide by to comply all the instructions/ recommendations if any issued by GPCB/CPCB Authority time to time. As an environmentally conscious organization we are always committed for prevention and control of pollution, protection of environment and conservation of natural resources in all spheres of our operations.

We hope your honor will find this in order.

Thanking you,

For, **ELECTROTHERM (INDIA) LIMITED**

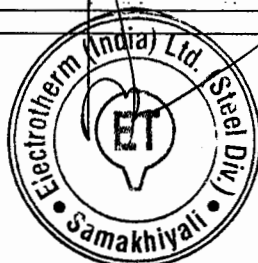
Authorized Signatory



Copy to: **The Regional Officer, GPCB Regional Office, Gandhidham (Kutchh)**

CEMS DATA

1036-1036 STACK 10 Updated Time 02/28/2018 10:00:30 AM		
SPM1 34.0 mg/nm3	SPM2 19 mg/nm3	
1036-1036 STACK 10 Updated Time 02/28/2018 10:05:00 AM		
NOX 3.69 ppm	SOX 2.62 ppm	SPM 37.81 mg/Nm3
1036-1036 STACK 10 Updated Time 02/28/2018 10:10:00 AM		
NOX 25.62 ppm	SOX 19 ppm	SPM 7.5 mg/Nm3
1036-1036 STACK 10 Updated Time 02/28/2018 10:15:00 AM		
NOX 8.25 ppm	SOX 7.5 ppm	SPM 34.81 mg/Nm3
1036-1036 STACK 10 Updated Time 02/28/2018 10:20:00 AM		
NOX 19.5 ppm	SOX 1.19 ppm	SPM 39.06 mg/Nm3
1036-1036 STACK 10 Updated Time 02/28/2018 10:25:00 AM		
NOX 2.62 ppm	SOX 1.5 ppm	SPM 83.75 mg/Nm3
1036-1036 STACK 2 Updated Time 02/28/2018 10:30:00 AM		
NOX 4.75 ppm	SOX 3.69 ppm	SPM 17.19 mg/Nm3
1036-1036 STACK 3 Updated Time 02/28/2018 10:35:00 AM		
NOX 7.5 ppm	SOX 1.38 ppm	SPM .38 mg/Nm3
1036-1036 STACK 4 Updated Time 02/28/2018 10:40:00 AM		
NOX 8.25 ppm	SOX 25.62 ppm	SPM 94.38 mg/Nm3
1036-1036 STACK 5 Updated Time 02/28/2018 10:45:00 AM		
NOX 1.94 ppm	SOX 1.94 ppm	SPM 34.81 mg/Nm3

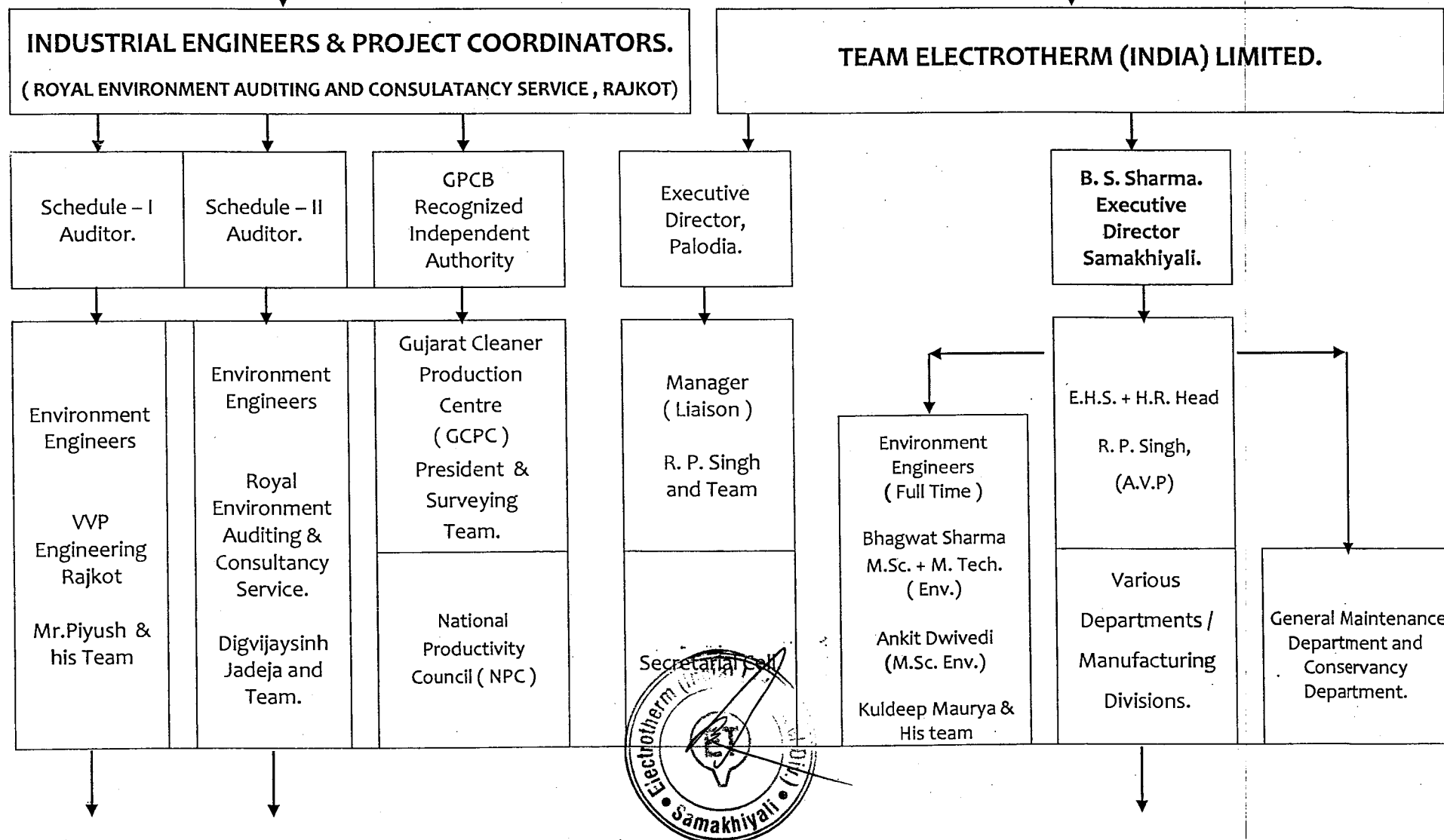


ENVIRONMENT MANAGEMENT CELL - 2 0 1 8.

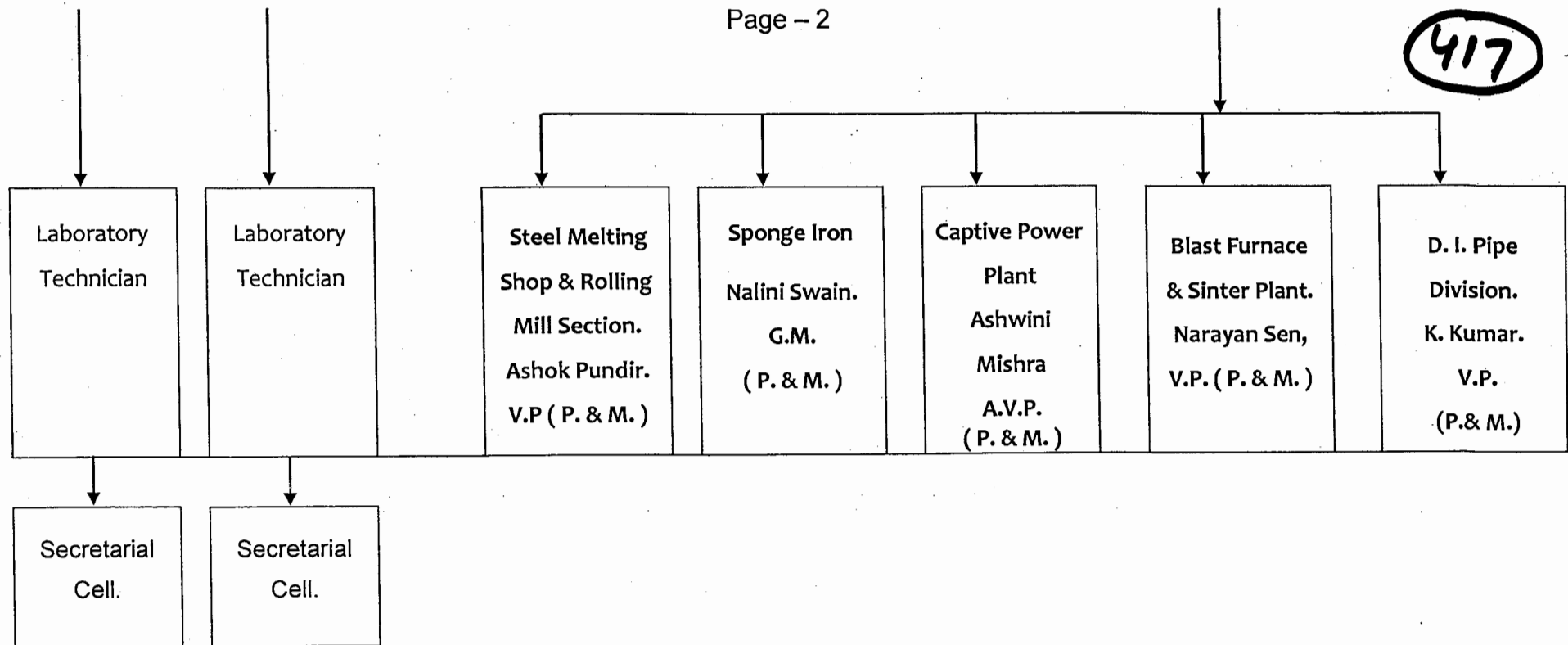
416

BOARD OF DIRECTORS

Managing Director



417



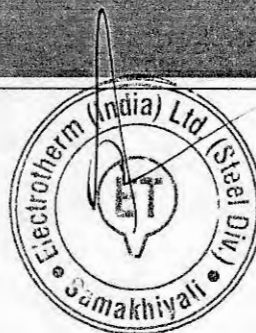
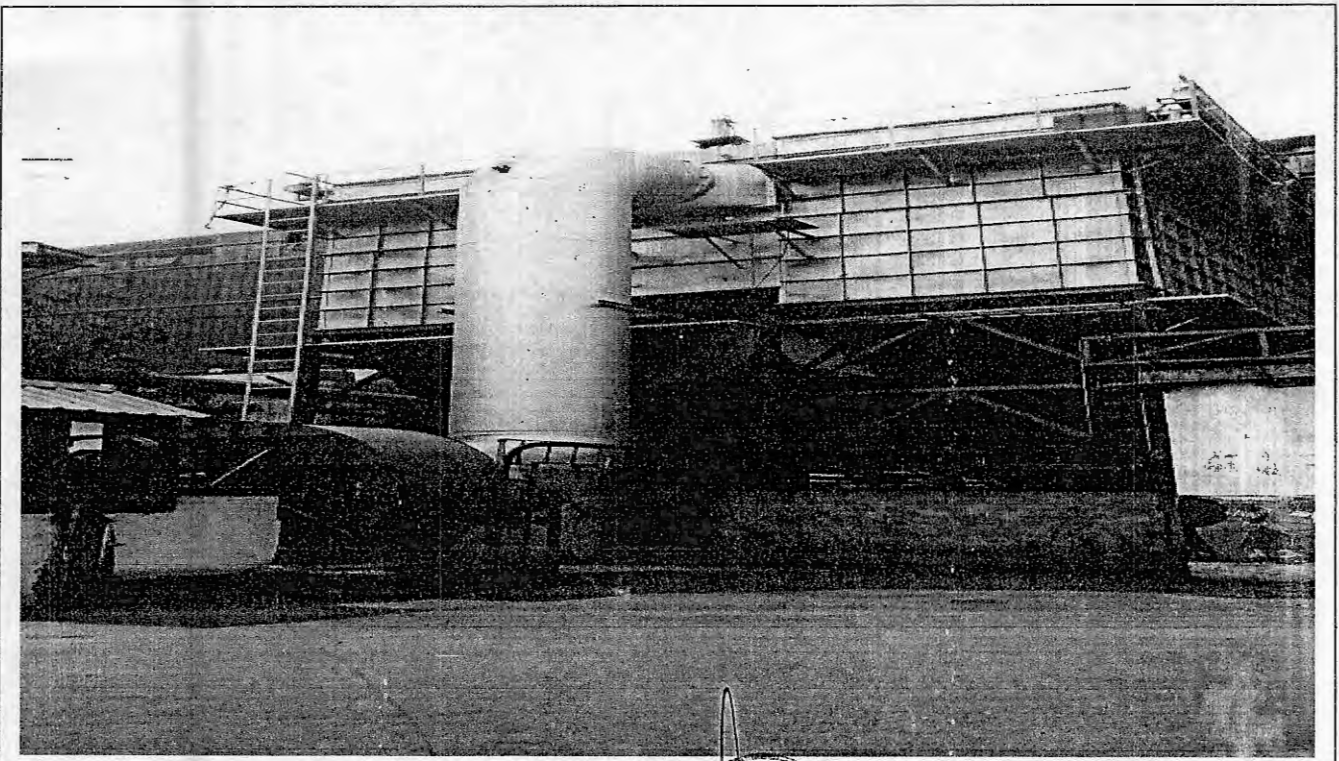
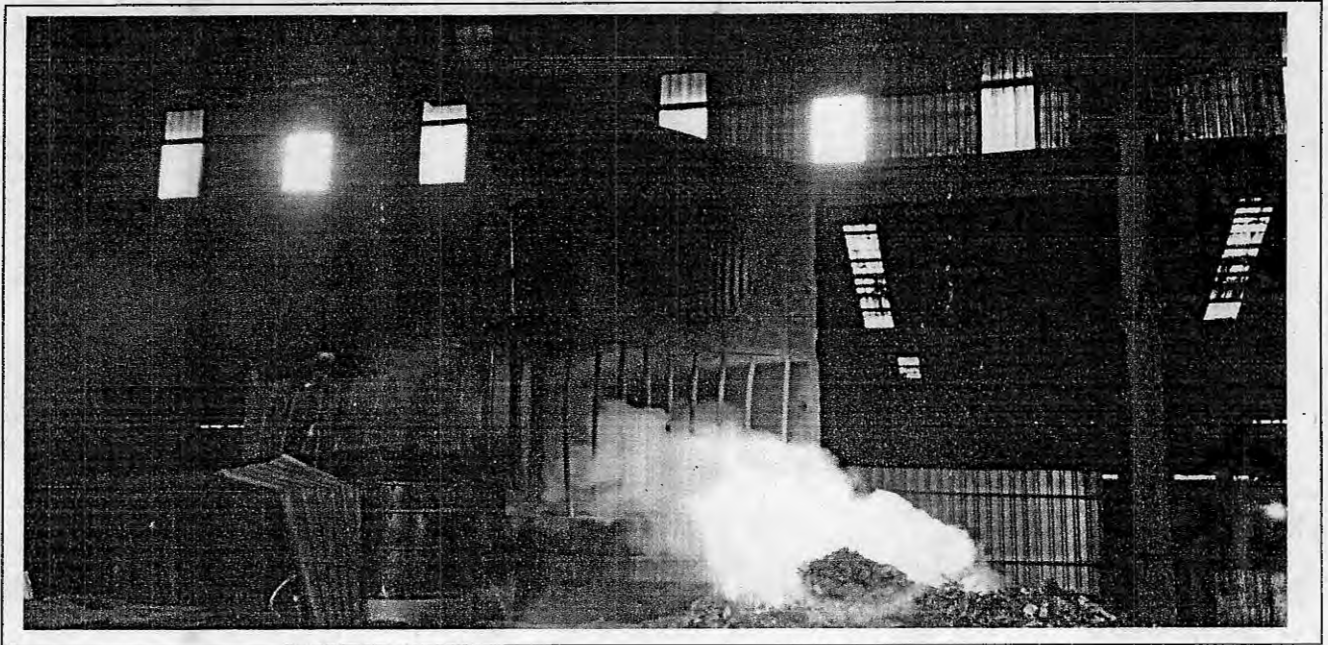
For, Electrotherm (India) Limited,

R. P. Singh
A.V.P (HRA&HSE).

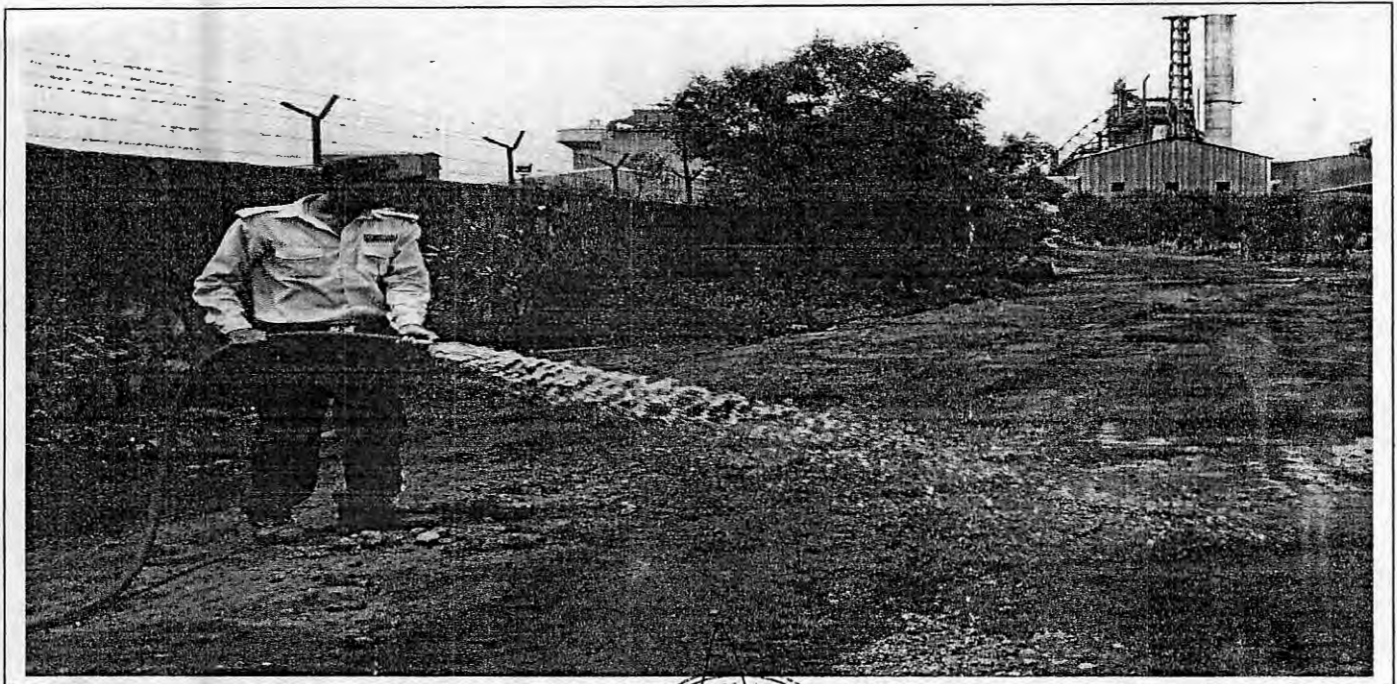
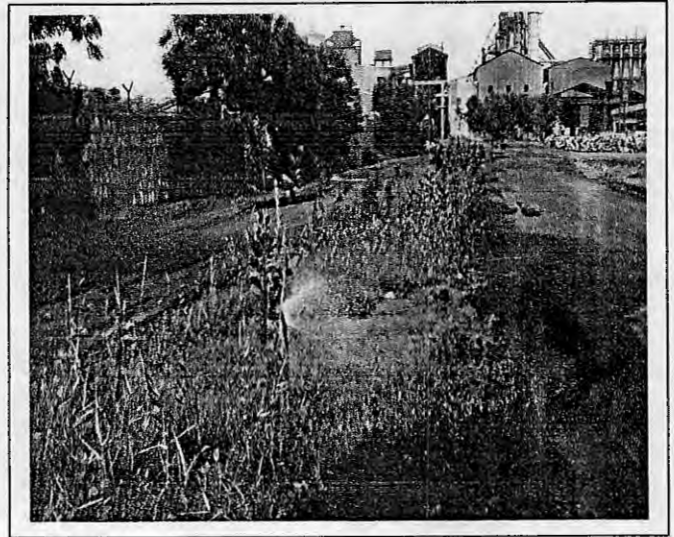
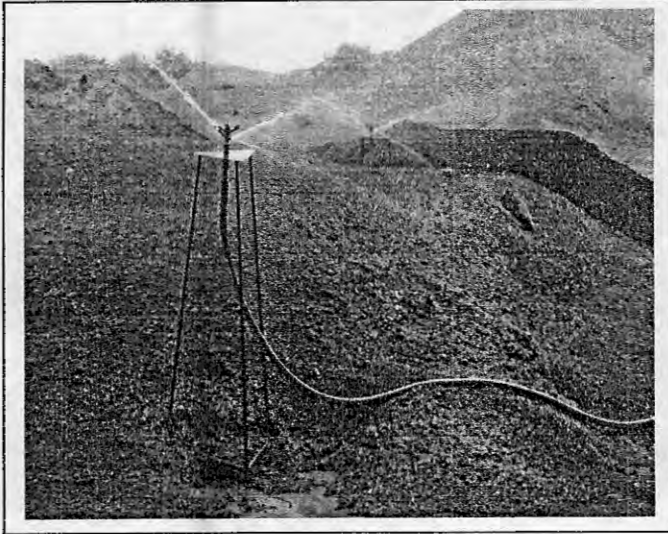
Date : June 30, 2018.

Place : Samakhiali.

SUCTION HOOD AND BAG HOUSE SYSTEM FOR CONTROL FUGITIVE EMISSION FROM INDUCTION
FURNACE



WATER SPRINKLER SYSTEM FIX AND MANUAL WATER SPRINKLING SYASTEM BEHIND THE DIP PLANT



420



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382 010

Phone : (079) 23222425

(079) 23232152

Fax : (079) 23232156

Website : www.gpcb.gov.in

BY R.P.A.D.

NOTICE UNDER SECTION (31) (A) OF THE AIR (PREVENTION AND CONTROL OF POLLUTION) ACT-1981

WHEREAS you are having industrial plant in name of **Electrotherm (India) Ltd (Sponge Iron & DI Pipe Plant)** located at **Survey No 325, Vill: - Samakhiyali, Dist: - Kutch - 370140** engaged in manufacturing of Steel plant

AND WHEREAS the Gujarat Pollution Control Board has issued CC&A for manufacturing of steel in Consent Order no AWH-79693 dated 17/06/2016 issued vide order **No PC/CCA-KUTCH-294(13)/GPCB ID-17826/355742, dated 11/05/2016 valid up 22/03/2021**, subject to the conditions mentioned therein.

AND WHEREAS during the inspection with reference complaint visited on 20/6/2018 by the Board and it was also observed that;

- 1) Provided CEMS for measuring various air parameters are not in operation.
- 2) Black dust observed on agricultural land parcel
- 3) Fugitive emission observed from Induction furnace.

Now, therefore I **Sushil Vegda, Senior Environment Engineer**, Gujarat Pollution Control Board proposes to issue direction under section (31) (A) of Air (Prevention and Control of Pollution) Act-1981 as under:

- 1) To operate CEMS continuously for all parameters.
- 2) Preventive measures shall be taken to control fugitive emission generated from Induction furnace
- 3) Provided all APC measures shall be operated continuously to prevent to spread on dust to nearby area

You are hereby directed to reply to the given directions within 15 days from date of issue of this notice. Failing to this, it will be deemed to be passed without further reference to you.

For and on behalf of
Gujarat Pollution Control Board


(Sushil Vegda)

Senior Environmental Engineer

No. PC/CCA-KUTCH-4(13)/GPCB ID-17826/

Date:

To,
✓ **Electrotherm (India) Ltd (Sponge Iron & DI Pipe Plant),**
Survey No: 325, Vill:- Samakhiyali,
Dist:- Kutch - 370140.

ward No: 59451, 27/06/2018



421

VAKALATNAMA

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, WEST ZONE
BENCH, PUNE

ORIGINAL APPLICATION NO. 53/2020

IN THE MATTER OF:

Jivabhai Ganeshbhai Bada Applicant

VERSUS

State of Gujarat & Ors. Respondents

I, ~~RAVINDRA SINGH~~, the undersigned ~~Petitioner(s)/Appellant(s)/Plaintiff(s)/Respondent(s)/Defendant(s)/Opposite Party~~ abovenamed hereby appoint **SANJEEV KUMAR & CO., SANJEEV KUMAR, SUDHANSHU PALO, RAJNISH, PRABHAR PRANAM, ADVOCATES** to act and appear for me/us in the above Suit/appeal/petition/reference and on my/our behalf to conduct and prosecute (or defend) the same and all proceedings that may be taken in respect of any application connected with the same or any decree or order passed therein, including proceedings in taxation and applications for Review, to file and obtain return of documents and to deposit and receive money on my/our behalf in the said Suit/appeal/petition/reference and in application of review, and to represent me/us and to take all necessary step on my/our behalf in the above matter. I/We agree to ratify all acts done by the aforesaid Advocate in pursuance of this authority.

Dated this day of November, 2020
Accepted, Identified and Certified

(SANJEEV KUMAR & ASSOCIATES)

ADVOCATES & SOLICITORS

SUPREME COURT OF INDIA

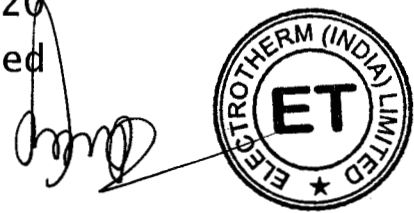
141, TOWER NO.10, SUPREME ENCLAVE,

MAYUR VIHAR PHASE-I, NEW DELHI-91

PH. (011)-24321109, 43551006

MOBILE: 09810261109

E-mail: krsanjeev213@yahoo.co.in



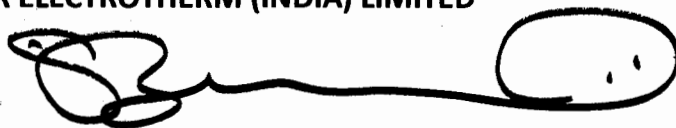
FOR RESPONDENT NO.5

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED BY THE MEMBERS OF THE MANAGEMENT COMMITTEE OF THE BOARD OF DIRECTORS OF ELECTROTHERM (INDIA) LIMITED AT THEIR MEETING HELD ON 15TH OCTOBER, 2020 AT THE HEAD OFFICE & WORKS OF THE COMPANY SITUATED AT SURVEY NO. 72, VILLAGE: PALODIA, TAL: KALOL DIST.: GANDHINAGAR-382115

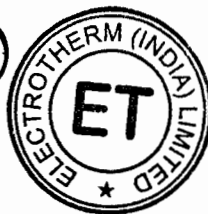
"RESOLVED THAT Mr. Ravindra Singh, Assistant Vice President (Commercial – HR & Admin), Steel Division of the Company be and is hereby authorised and empowered to sign, file, verify, and prosecute various complaints, applications, petitions, plaints, appeals, writs, affidavits, deeds, documents, and to engage / appoint lawyers and sing vakalatnama etc. and to appear before Courts/Forums/Police Authorities in all courts of India and represent the Company and give evidence before the aforesaid Courts/Forums/Tribunal(s)/Police Authorities etc. in respect to any legal proceedings on behalf of and against the Company and also to received various documents, copies etc. from the aforesaid Courts/Forums/Tribunal(s)/Police Authorities and give valid receipts for the same on behalf of the Company.

RESOLVED FURTHER THAT Mr. Ravindra Singh, Assistant Vice President (Commercial – HR & Admin), Steel Division of the Company be and is hereby authorised to do all such acts, deeds, matters and things that may be necessary in relation to the above and for effective discharge of the power granted as above on behalf of the company."

**Certified true copy
FOR ELECTROTHERM (INDIA) LIMITED**



**SHAILESH BHANDARI
MANAGING DIRECTOR
(DIN : 00058866)**



ELECTROTHERM (India) Limited

HEAD OFFICE & WORKS:
Survey No. 72, Palodia, (Via Thaltej, Ahmedabad), Gujarat-382115, India.
Phone: +91-2717-234553 – 7, 660550 Fax: +91-2717-234866
Email: ho@electrotherm.com | Website: www.electrotherm.com

REGD. OFFICE:
A-1, Skylark Apartment, Satellite Road,
Satellite, Ahmedabad-380015.
Phone: +91-79-26768844, Fax: +91-79-26768855
CIN : L29249GJ1986PLC009126
Email: sec@electrotherm.com

Other Offices: • Angul • Bangalore • Bangladesh • Bellary • Chennai • Coimbatore • Delhi • Ghaziabad • Goa • Hyderabad • Jaipur • Jalna • Jalandhar • Jamnagar • Jamshedpur • Kanpur • Koderma • Kolhapur • Kolkata • Ludhiana • Mandi Gobindgarh • Mumbai • Nagpur • Nasik • Panaji • Pune • Raipur • Raigarh • Rajkot • Rourkela • Sambalpur