



NABHA POWER LIMITED

NPL
Nabha Power Limited

P.O. Box No -28, Near Nalash, Rajpura-140401, Punjab
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Email ID: rajiv.bhandari@larsentoubro.com
Letter.No.: NPL/HSE/RB/MoEFCC/AD/230529/1

Date 30.05.2023

To,

**The Additional Director,
Ministry of Environment, Forest and Climate Change
(Northern Region)
Integrated Regional Office,
Bays Nos. 24-25, Sector 31-A,
Chandigarh-160030**

Ref: Environmental Clearance No J-13011/44/2008- IA-II (T) dated 3rd October 2008 and as Amended on dated 15th November 2010 and Extension dated 5th February 2014 & Amendment in Environmental Clearance (EC) on dated 04.07.2022.

Sub: Six Monthly Environmental Clearance Compliance Report for the Period of 1st October 2022 to 31st March 2023.

Dear Sir,

Please find enclosed Six-Monthly Environmental Clearance Compliance Report of M/s Nabha Power Ltd., Vill. Nalash, Distt- Patiala (Punjab) for the period from 1st October 2022 to 31st March 2023.

Thanking you,

Yours Sincerely,



(Rajiv Bhandari)

Authorised Signatory

Nabha Power Limited

Encl: As above.

- CC: 1) The Executive Environment Engineer, Regional Office, Patiala, Ground Floor, Vatavaran Bhawan, Nabha Road, Patiala.
2) Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex East Arjun Nagar, Delhi.
3) Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.

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Corporate Office: L&T House, N M Marg, Ballard Estate, Mumbai 400 001
CIN No: U40102PB2007PLC031039

**SIX MONTHLY COMPLIANCE
REPORT OF ENVIRONMENTAL
CLEARANCE CONDITIONS**

**NABHA POWER LIMITED
2x700 MW THERMAL POWER PLANT**



VILL. NALASH

**DISTT. PATIALA
(PUNJAB)**

Submitted to:

- **Additional Director, Integrated Regional Office (Northern Region), Ministry of Environment, Forests and Climate Change, Chandigarh-160030.**
- **Ministry of Environment, Forests and Climate Change, New Delhi-110003.**
- **Central Pollution Control Board, Delhi**
- **Punjab State Pollution Control Board, Patiala.**

Submitted By:

**NABHA POWER LIMITED
VILL. NALASH
PATIALA (PUNJAB)**

Period: 1st October-2022 to 31st March-2023.

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Introduction

Nabha Power Limited (NPL), was established as Special Purpose Vehicle (SPV) by the erstwhile Punjab State Electricity Board (PSEB) to develop the Rajpura Thermal Power Project at a site near village Nalash, Distt Patiala, Punjab. An RfQ/RfP was floated by PSEB in line with the Case 2 competitive bidding guidelines, Govt of India (GoI) and L&T Power Development Limited (a wholly owned subsidiary of L&T) was identified as the lowest bidder. NPL has signed Power Purchase Agreement on 18th January 2010 with PSEB and the NPL was also transferred to L&T Power Development Limited as its wholly owned subsidiary on 18th January 2010.

The 1400 MW power plant is constructed as a unit configuration of 2 x 700 MW units, with one steam turbine and one boiler for each unit.

NPL is having two Pulverized Fuel Boilers, generating steam at 25.71MPa at 568 °C with two Condensing Turbo Generator Sets each having generating capacity of 700 MW of power. Installation of associated mechanical and electrical equipment, auxiliary units like coal, ash handling plant, water treatment plant, cooling water system, electrostatic precipitators (ESPs), NOx control equipment etc. are part of the total installation.

SALIENT FEATURES OF NABHA POWER LTD.

Total Capacity	2x700 MW (1400 MW)
Fuel Requirement and Source	5.8 MT/Year, SECL Mines
Water requirement and source	50 Cusec from Bhakra main canal
Status	Unit # 1 Operational since 1 st Feb 2014.
	Unit # 2 Operational since 10 th July 2014.

- Project Proponent** : Nabha Power Ltd.
Project Status : U # 1 & U# 2 Synchronised on Feb-2014 and July-2014 respectively
References : 1.No.J-13011/44/2008-IA-II(T)DTD 3rdOct2008
: 2.No.J-13011/44/2008-IA-II(T)DTD 15thNov2010
: 3.No.J-13011/44/2008-IA-II(T)DTD 5thFeb2014
: 4.No.J-13011/44/2008-IA-II(T)DTD 4thJuly2022

Compliance Report for the period of October-2022 to March-2023.

1. J-13011/44/2008- IA-II (T) DTD 3rdOct 2008 for 2x660 MW

S. No.	MOEF Conditions	Compliance Status
1.	The total land requirement for the project shall be restricted to 1278 acres.	The land requirement for 1400 MW has been restricted within 1278 acres only.
2.	Prior clearance from the competent authority shall be obtained for locating the proposed power plant in proximity (about 3 kms) of the defence installation. A copy of the same shall be furnished to the ministry and the regional office of this ministry within one month from the date of issue of this clearance letter.	NOC from Ministry of defence & AAI obtained on 25 th May, 2009, Ref No. 21(7)/2008/D(Coord) & 22 nd July,2008, Ref No.: No. AAI/20012/664/ 2008-ARI (NOC) respectively.
3.	Sulphur & ash contents in the coal to be used in the project shall not exceed 0.5% & 34%.	Sulphur in the coal being used is below 0.5%. The Testing Report is attached as Annexure 1 . The condition of 34% Ash in coal does not exist Now. As per MoEF&CC Notification vide S.O.No.1561(E) Dtd.21.05.2020 "Use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to compliance with specified emission norms for particulate matter" (PM < 50 mg/nm3). We are maintaining the specified emission norms. The stack emission monitoring reports from PPCB as well as from MoEF&CC and NABL approved laboratory for particulate matter are attached as Annexure-2 .
4.	A bi-flue stack of height 275 m shall be provided with continuous online monitoring equipment for Sox, NOx & particulate matter. Exit velocity of flue gas should not be less than 25 m/sec.	Continuous online monitoring equipment are functional at 275 Mtr. stack on both the flues attached to Boiler 1 & Boiler 2 and monitoring of PM, Sox & NOx. is being done. As per EC validity extension dated 5.02.2014, exit velocity of flue gases shall not be less than 22 m/s therefore the exit velocity of flue gas is being always maintained more than 22 m/sec in both the stacks. The Stack Emission Monitoring Reports from MoEF & CC and NABL approved laboratory are attached as Annexure-2 .
5.	High efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure particulate emission doesn't exceed 50 mg/m ³ .	The ESP's attached to Boiler 1 & 2 are functional and have efficiencies more than 99.99%. The SPM emissions are < 50 mg/Nm ³ . The stack emission monitoring reports from PPCB as well as from MoEF&CC and NABL approved laboratory for particulate matter is attached as Annexure-2 .
6.	Space provision shall be kept for retrofitting for FGD, if required at later date.	Complied.
7.	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	The Dust extraction system & Dust suppression system (water sprinklers) are operational in the coal handling area, ash handling and at all transfer points. The photographs of the same is attached as Annexure-3 .
8.	Fly ash to be collected in dry form in storage facility (silos) shall be provided. 100% utilization of fly ash	Fly Ash Silos (3 Nos.) are fully operational. The utilization report of Fly ash is being submitted to Regional Office

	shall be achieved from day one. Unutilized fly ash in emergency and bottom ash shall be disposed in ash pond and bottom ash in conventional slurry mode. Mercury and other heavy metals (Hg, Cr, Pb etc.) will be monitored in bottom ash and fly ash as also in the effluent emanating from ash pond.	PPCB, MoEF&CC, CPCB and CEA on yearly basis. Ash utilization report for the period of FY 2022-23 is attached as Annexure-4 . Analysis of heavy metals are being done for both bottom & fly ash on six monthly basis. Latest reports are attached as Annexure-5 .
9.	Ash pond shall be lined with HDPE lining. Adequate safety measures shall also be implemented to protect ash dyke from getting breached.	Ash Pond bed is provided with HDPE lining (500 microns thick) over 50 mm thick sand cushion and top of HDPE liner is protected with 300 mm earth cover.
10.	Closed cycle cooling system with cooling towers shall be provided. Effluents shall be treated as per the prescribed norms.	Closed cycle cooling system with cooling towers is provided. No effluent is generated as the plant is designed for ZLD (Zero Liquid Discharge).
11.	The treated effluents conforming to the prescribed standard shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during Monsoon. Arrangement shall be made that effluent & storm water do not get mix.	The Power plant is based on Zero Discharge (ZLD) concept and the treated effluents conforming to prescribed standards are being re- circulated and reused within the Plant. There is no discharge outside the plant boundary.
12.	A Sewage Treatment Plant shall be provided, and treated sewage shall be used for raising green belt/plantation.	The Sewage treatment plant of 50 KLD capacity is in operation. The treated water is being used for green belt development/Plantation. The STP Treated effluent quality reports from PPCB as well as from MoEF&CC and NABL approved laboratory are attached as Annexure-6 .
13.	Rainwater harvesting should be adopted. Central Ground Water Authority/board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Rainwater harvesting pits are in place and made as per the Rainwater harvesting scheme approved by CGWA.
14.	Adequate safety measures shall be provided in plant area to check/minimize spontaneous fire in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry at Chandigarh.	The safety measures submitted to MOEF vide letter ref: NPL/SKN/MOEF/1423 dated: 28th June 2012 have been implemented to check/minimize spontaneous fire in coal yard.
15.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of project.	Adequate arrangements were made for construction labour such as toilets, STP, safe drinking water, medical health care etc. during project stage.
16.	Storage facilities for liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Onsite and off-site disaster management plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modification required, if any shall be incorporated in the DMP.	The Storage tanks for LDO & HFO storage have been made after necessary risk assessment. On-site disaster management plan is prepared, and the adequacy of the plan is being tested on regular basis through conducting mock drills.
17.	Regular monitoring of ground water in and around ash pond area shall be carried out, records maintained, and six-monthly reports shall be furnished to Regional Office, Chandigarh.	Regular monitoring of ground water in and around ash pond is being done and reports are being submitted to the PPCB monthly basis. The latest reports are attached as Annexure-7 .
18.	A green belt of adequate width and density shall be developed around plant periphery covering about 1/3 rd of project area preferably with local species.	1/3 rd of the total area have been covered under green belt with native species. The Green Belt Development photographs are attached as Annexure-8 .

19.	Activities under CSR shall be enhanced with proper financial allocation. Details of these activities shall be submitted to the Regional Office of the Ministry, SPCB and the Ministry.	Annual activities takes place across the year as per allocated financial budget to improve the socio-economic status of surrounding areas. A snapshot of the CSR projects and initiatives are attached as Annexure No-9 .
20.	First aid & sanitation arrangement shall be made for the drivers and other contract workers during construction phase.	First aid centre (OHC) & adequate sanitation arrangement are available for employees as well as contractual employees.
21.	Noise level emanating from turbines shall be limited to 75 dB (A). For people working in the high noise area, requisite personal protective equipment like Earplug/earmuffs etc. shall be provided. Workers engaged in noisy area such as turbine area, air compressors etc. shall be periodically examined to maintain audiometry record and for any hearing loss including shifting to non-noisy/less noisy areas.	The Noise levels are maintained well below the prescribed standards. PPE's are being provided to all the workers depending upon the task being performed. Medical examination of the workers engaged in high noise area is being done on six monthly basis and records being maintained as per statutory norms.
22.	Regular monitoring of ground level concentration of SO ₂ , NO _x , SPM, RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of the monitoring shall be decided in consultation with SPCB. Periodic report to be submitted to Regional office of this Ministry.	Monitoring reports are regularly being submitted to Regional office of Ministry and PPCB. Monitoring reports are attached as Annexure-10 .
23.	The project proponent shall advertise in two local newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality/Municipal area/Gram Panchayat concerned and on the company's website within seven days from the date of clearance letter, informing that the project has been accorded environment clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at website of the ministry of Environment and forests at http://envfor.nic.in .	Complied.
24.	A separate Environment Management Cell with qualified staff to be set up for implementation of the stipulated environmental safeguards.	HSE department comprising of qualified staff with adequate experience and knowledge is in place to cater environmental responsibilities & needs.
25.	Half yearly report on status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/Regional Office/CPCB/SPCB.	Half year reports are regularly being submitted to <ul style="list-style-type: none"> ❖ MoEF&CC New Delhi, ❖ MoEF&CC, IRO (North Region), Chandigarh, ❖ CPCB, Delhi and ❖ PPCB Patiala.
26.	Regional office of the Ministry of Environment & Forests located at Chandigarh will monitor implementation of stipulated conditions. A complete set of documents including EIA report & EMP report along with additional information submitted from time to time shall be forwarded to the regional office for their use during monitoring.	Complied.

27.	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These costs shall be included as part of project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes & year wise expenditure should be reported to Ministry.	Separate funds are allocated. Fund spent in the FY 2022-2023 are attached as Annexure No-11 .
28.	The project authorities shall inform the regional office as well as the Ministry regarding the date of financial closure and final approval of project by concerned authorities and the dates of start of land development work and commissioning of plant.	Plant is in operation since 2014 after obtaining all necessary approvals from state/central government.
29.	Full co-operation should be extended to the scientists/officers from the Ministry/Regional office of the Ministry at Chandigarh/the CPCB/the SPCB who would be monitoring compliance of environmental status.	NPL is providing full co-operation and support to the scientists/officers of MoEF&CC/CPCB/SPCB. who are monitoring compliance of environmental status, time to time.

2. J-13011/44/2008- IA-II(T)DTD15th Nov 2010 for change in configuration from 2 x 660 MW to 2 x 700 MW.

30.	No additional coal consumption beyond 5.8 MTPA (at 85 % PLF) earlier envisaged for 2 x 660 MW and no additional land for the enhanced capacity shall be permitted.	Being Complied.
31.	The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide Ministry's letter of even no. dated 03.10.2008, in its website and update periodically and also simultaneously send the same by email to regional office of Ministry of Environment and Forests.	NPL website is live & the compliance reports are uploaded periodically on website. Website address: http://www.ltnabhapower.com
32.	Critical pollutants levels including NO _x , RPSM ₁₀ and SO ₂ shall be regularly monitored, and results displayed in your website and also at main gate of the power plant.	Monitoring results are uploaded on NPL website as well as displayed at main gate. The Photograph of main gate display is attached as Annexure-12 .

3. J-13011/44/2008- IA-II(T) DTD 5thFeb2014 for extension of validity of Environmental Clearance.

S. No.	MOEF Conditions	Compliance Status
33	Harnessing solar power within the premises of the plant particularly at the available roof tops shall be undertaken and status of implementation shall be submitted periodically to regional office of ministry	Solar panels are provided on field hostel roof, Clarifier area, CHP and at DM plant area and are functional. The harness report is attached as Annexure No-13 .
34	A long-term study on radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radioactivity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Heavy metal & Radioactive contents in coal, fly ash and bottom ash are being analysed on six monthly basis. Latest reports are attached as Annexure-5,14 &15 .
35	Exit velocity of flue gases shall not be less than 22 m/s. Mercury emissions from stack shall also be monitored on periodic basis.	The exit velocity of flue gases is more than 22 m/s. Mercury emissions from the stacks are regularly monitored and the reports are being submitted to MOEF&CC on periodic basis. The reports are attached as Annexure-2 .

36	Fugitive emissions shall be controlled to prevent impact on agriculture or non-agriculture land.	Adequate measures to control fugitive emissions are already in place.
37	No ground water shall be extracted for use in operation of power plant even in lean season.	Complied.
38	Source sustainability of water requirement shall be carried out by an institute of repute. The study shall also specify the source of water for meeting the requirement during lean season. The report shall be submitted to the Regional Office of ministry within six months.	For Nabha Power Limited the source of water is Bhakhra Canal and necessary permission in this regard was taken from Irrigation Department, Punjab and was submitted with your kind office before grant of Environmental Clearance. When we had applied for Extn. of EC, our plant was already Commissioned, and we were having valid Consent to Operate from State Pollution Control Board. Therefore, the said condition is not applicable on us.
39	Hydro geological study of the area shall be reviewed annually, and report submitted to the ministry. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant.	The Hydrology study of the area was conducted before the grant of EC by MOEF&CC. No groundwater abstraction is being done. We are only using Canal water for the generation of Power. Therefore, the said condition is not applicable on us.
40	Minimum required environment flow suggested by the competent authority of the state government shall be maintained in the Channel / Rivers (as applicable) even in lean season.	Agreed
41	C.O.C of 5.0 shall be adopted	Adopted and being complied.
42	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for fly ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option for mine void filling is to be adopted, prior detailed study of soil characteristics of mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close coordination with the State Pollution Control Board	Fly ash is being utilized as per the MoEF&CC Notification vide S.O. 5481(E) dated 31.12.2021.
43	Green belt consisting of 3 tiers of plantations of native species around the plant and at least 100m width shall be raised. Wherever 100m width is not feasible a 50 m width shall be raised, and adequate justification shall be submitted to Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 75 %.	Complied. The Green Belt Development photographs are attached as Annexure-8
44	Three tier green belt shall be developed all around ash pond over and above the green belt around the plant boundary.	Complied.
45	A common Green Endowment Fund shall be created, and the interest earned out of it shall be used for the development and management of Green cover of the area.	Being complied
46	The project proponent shall also adequately contribute in the development of the neighbouring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	Being Complied
47	CSR scheme should address Public Hearing issues and shall be undertaken based on need based assessment in and around villages within 5.0 km of the site and in constant consultation with the village Panchayat and District administration. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting	Complied Presently working in 49 villages (5 Km) radius, the schemes are implemented in targeted villages in coordination with village panchayats & District Administration. The milestones of H2 are as under: Skills

	<p>relevant training shall also be undertaken. Development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program. Company shall provide separate budget for community development activities and income generating programs. Vocational training program for possible self-employment and jobs shall be imparted to identify villagers free of cost.</p>	<ul style="list-style-type: none"> • Facilitated external orders over INR 17 Lakhs for women artisans (47 No., 5 centres) • Training in beautician and stitching courses at 4 No. skill centres where 118 women are undergoing training. • Entrepreneurship Development: Assistance provided to establish 8 women led enterprises in 7 villages. • NPL Scholarship: 13 Students of ITI identified for scholarships. • NPL GNM Scholarship: 40 Students sponsored for Nursing courses. <p><u>Education & Sports</u></p> <ul style="list-style-type: none"> • Provision of School Kits – Schools kits given to over 5000 students of 49 villages (School bag with portable desk, Water bottle and a pencil box. • Provision of drinking water – Installed 12 water cooler and purifiers in 11 Govt. Schools • School Adoption: Construction of altogether, 2 Classroom and 1 hall in 2 Govt Schools • Solar Powerplant: 15-Kilowatt solar power plant in a School • Contingency Support to Schools: Complete exterior paint in 2 Schools and Artwork on exterior walls of 8 Govt Schools • Athletic Meet - 657 Youth participated. A large gathering of spectators witnessed. • NPL Sports Cup- 2 Tournaments were organized. <p><u>Rural Infrastructure</u></p> <ul style="list-style-type: none"> • Rural Roads - 1.5 km long road laid in six villages, benefitted approx. 8000 village residents. • EWS Houses- Constructed 5 Houses for needy economically weaker individuals covering 5 villages. • Construction of Shed- Shed for Railway under bridge for smooth vehicular traffic. • Construction of Boundary Wall- 830 mtr. Precast Boundary wall will benefit farmers by protecting their 250 acre of land/crops from wild animals. • Construction of Community Shed- 1 No. <p><u>Health</u></p> <ul style="list-style-type: none"> • Health Camps (5 Nos.) – 742 villagers benefitted from health camps • Drug de-addiction centre- Infrastructure support - Water cooler, Patient shed, TV screen & AC provided to centre in Rajpura, benefitting 150 patients. • Blood Donation Camps (1 No.) - 55 units of voluntary donation • Assistance to 7 Govt. Dispensaries Equipped with furniture and equipment for Anti-natal and Neo-natal care (1000+ expecting and lactating mothers) • Occupational Therapy set up in Rajpura center for differently abled children (20 No.) • Health Mela 2 Mega health melas in village Bhappal in Urna, 1099 villagers benefitted. <p><u>Water & Sanitation</u></p> <ul style="list-style-type: none"> • Crop Flood Protection (14 villages) by cleaning of natural drains and ponds.
48	<p>It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The</p>	<p>Internal Planning and monitoring done by CSR Committee chaired by Senior Plant Official, the committee's meetings are conducted.</p>

	project proponent shall also submit the status of implementation of the scheme from time to time.	
49	An Environmental cell shall be created at the project site itself and shall be headed by an officer of the company of appropriate seniority and qualification. It shall be ensured that the head of the cell shall directly report to the Head of the organization.	An Environmental Cell Headed by DGM-HSE is already in place, who directly reports to the Head of Organisation.
50	Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	Regular monitoring of ground water quality including heavy metals is being carried out regularly in and around the Ash Dyke. Piezometer wells are established around the ash pond area and being regularly monitored. The latest reports are attached as Annexure-7 .
51	Monitoring of the surface quantity and quality shall also be regularly conducted, and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	No Ground Water is being abstracted as we are using Bhakra Canal water for generation of Power. The quality and quantity of the canal water is monitored, and records are being maintained. The reports are attached as Annexure-16 . We are already monitoring heavy metals in the ground water by taking samples through a piezometer on a monthly basis and submitting the respective reports to the regional office of the PPCB at Patiala. The latest reports are attached as Annexure-7 .
52	The environment statement for each financial year ending 31 st 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 along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.	Complied. The last environmental statement report was submitted on 28.09.2022 to the Integrated Regional Office of MoEF&CC at Chandigarh and the PPCB, Patiala.
53	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	HSE Policy has been framed and accordingly officers have been designated for achieving the objectives by adherence to the Policy. The organisation is certified for Integrated Management System requirements comprising of (ISO 9001, 14001 & 45001 & 50001)

4. No -J-13011/44/2008- IA-II (T) dated 4th July 2022, Amendment in Environment Clearance.

54	An epidemiology study shall be carried out in every two years and report shall be submitted to Regional Office of MoEF&CC.	Epidemiology study was carried out. The copy of same is attached as Annexure-17 .
55	A Public grievances redressal cell to address the social and environmental concerns shall be established under the supervision of project head, regular status of activities of the cell be submitted in six monthly compliance report.	A Public grievances redressal cell has been made under the chairmanship of O&M Head to address the social and environmental concerns. The copy of Minutes of Meeting is attached as Annexure-18 .

Annexure – 1


Test Report of Sulphur % in Coal

Test Report

Document QF : 2501
Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200010 Sample Reg. Date :20-03-2023 Report Date :27-03-2023 Report No. :ICB-2303270001 NABL ULR No. :TC592623000003606F Customer Ref. No.: PO Letter Dated :25.11.2022
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Test Report as per IS :Party Specification	With Amendment No.(s):
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PART A : PARTICULARS OF SAMPLE SUBMITTED		
a)	Nature of Sample #	Coal Sample
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NS
d)	Brand Name	NA
e)	Declared Values,if any	NS
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	250gm
k)	Batch Size #	NA
l)	Mode of Packing	Packed in poly pack
m)	Date of Receipt	20-03-2023
n)	Date of Start	22-03-2023
o)	Date of Completion	27-03-2023
p)	BIS Seal (Intact/Not Intact/Unsealed)	Unsealed
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by Lab rep. on 15.03.2023

Brijesh Singh
27-03-2023
Reviewer

27-03-2023
Kamal Grover
[Authorized Signatory]

Disclaimer :

- The report is only for the sample tested.
- Total liability of ITC Labs is limited to the invoiced amount.
- The test report shall not be reproduced except in full without the written approval of the laboratory.
- If samples not consumed during analysis, it will be stored and retain as per company policy.
- Samples not drawn by us unless otherwise stated.
- Test report in full or parts shall not be used for promotional or publicity purposes.
- Legal disputes are subjected to Panchkula Jurisdiction only.

Test Report

Document QF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200010 Sample Reg. Date :20-03-2023 Report Date :27-03-2023 Report No. :ICB-2303270001 NABL ULR No. :TC592623000003606F Customer Ref. No. :PO Letter Dated :25.11.2022
--	--

s)	Test Request Submitted By	Nabha Power Limited - Rajpura (Punjab)
t)	Manufactured By#	--
u)	Supplied By#	Nabha Power Limited

PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Coal Sample (Sample received in good condition)			
S.No.	Parameter	Instrument	Method	Specification	Result
Discipline : Chemical					
Group : Chemicals Solid Fuels					
1. Chemical Parameters					
a.	Sulphur(as S)(%)	Muffle Furnace & Balance	IS: 1350 (P-3)		0.48

#' represents Customer Defined Fields

NOTE :

REMARKS :Party has asked for the above tests only.

Brijesh Singh
27-03-2023
Reviewer

27-03-2023
Kamal Grover
[Authorized Signatory]

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Test Report

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Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200010 Sample Reg. Date :20-03-2023 Report Date :27-03-2023 Report No. :ICB-2303270001 NABL ULR No. :TC592623000003606F Customer Ref. No. :PO Letter Dated :25.11.2022
--	--

*****End Of Report*****

Brijesh Singh
27-03-2023
Reviewer

27-03-2023
Kamal Grover
[Authorized Signatory]

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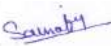
Annexure- 2

Stack Emission Monitoring Results and Photograph of Continuous Emission Monitoring System (CEMS).

Test Report

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260931
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291399
	NABL ULR No. :TC592622000017634F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

Test Report as per :	: EPA Act 1986/PCLS/2010
Sampling Information :	
Date of Monitoring	: 21-12-2022
Time of Monitoring	: 16:12 to 17:00 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 Ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 391 Ton/hrs
Normal operating schedule	: 24 hrs
Stack Identification	: Stack Emission of Boiler Unit-1
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For Self Monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
Observations :	


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260931
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291399
	NABL ULR No. :TC592622000017634F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022


Flue Gas Temperature, °C,Avg.	: 109
Flue Gas Velocity(m/s),Avg.	: 22.53
Volumetric Flow Rate(Nm ³ /hr.)	: 2694630.12
Ambient Air Temperature, °C	: 20


S.No.	Parameters	Method	Specification	Result
Discipline : Chemical				
Group : Atmospheric Pollution				
1.	General Parameters			
a.	Particulate Matter, mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-1)	Max. 50	36.59
b.	Sulphur Dioxide (SO ₂), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-2)	Max. 200	1171.9
c.	Oxides of Nitrogen (NO _x), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-7)	Max. 450	376.53
d.	Mercury(As Hg),mg/Nm ³	USEPA Method	Max. 0.03	BLQ(LOQ:0.01))
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO ₂), %	IS:13270	Not Specified	10.6

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per EPA Act 1986/PCLS/2010, Sample collected by lab rep. on dated 21.12.2022, Sampling Procedure - SOP/ITC/EW/056

REMARKS :N/A


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

Disclaimer :

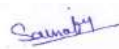
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Test Report

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Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260931 Sample Reg. Date :26-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291399 NABL ULR No. :TC592622000017634F Customer Ref. No. :PO Letter Dated :25.11.2022
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*****End Of Report*****


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

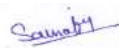
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Test Report

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212281038
	Sample Reg. Date :28-12-2022
	Report Date :31-12-2022
	Report No. :ICE-2212311481
	NABL ULR No. :TC592622000017806F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

Test Report as per :	: EPA Act 1986/PCLS/2010
Sampling Information :	
Date of Monitoring	: 21-12-2022
Time of Monitoring	: 17:10 to 17:58 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 Ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 405 Ton/hrs
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached of Boiler Unit-2
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For Self Monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
Observations :	


Saurabh Sharma
31-12-2022
Reviewer


31-12-2022
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212281038
	Sample Reg. Date :28-12-2022
	Report Date :31-12-2022
	Report No. :ICE-2212311481
	NABL ULR No. :TC592622000017806F
	Customer Ref. No.: PO
	Letter Dated :25.11.2022


Flue Gas Temperature, °C,Avg.	: 114
Flue Gas Velocity(m/s),Avg.	: 22.54
Volumetric Flow Rate(Nm ³ /hr.)	: 2660996.34
Ambient Air Temperature, °C	: 20


S.No.	Parameters	Method	Specification	Result
Discipline : Chemical				
Group : Atmospheric Pollution				
1.	General Parameters			
a.	Particulate Matter, mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-1)	Max. 50	40.29
b.	Sulphur Dioxide (SO ₂), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-2)	Max. 200	1482.39
c.	Oxides of Nitrogen (NO _x), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-7)	Max. 450	370.63
d.	Mercury(As Hg),mg/Nm ³	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO ₂), %	IS:13270	Not Specified	9.2

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per EPA Act 1986/PCLS/2010, Sample collected by lab rep. on dated 21.12.2022, Sampling Procedure - SOP/ITC/EW/056

REMARKS :N/A


Saurabh Sharma
31-12-2022
Reviewer


31-12-2022
PremKumar
[Authorized Signatory]

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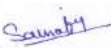
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Test Report

Document QF : 2501
Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212281038 Sample Reg. Date :28-12-2022 Report Date :31-12-2022 Report No. :ICE-2212311481 NABL ULR No. :TC592622000017806F Customer Ref. No. :PO Letter Dated :25.11.2022
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*****End Of Report*****


Saurabh Sharma
31-12-2022
Reviewer


31-12-2022
PremKumar
[Authorized Signatory]

Disclaimer :

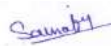
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Test Report

Document QF : 2501
Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303210770
	Sample Reg. Date :21-03-2023
	Report Date :29-03-2023
	Report No. :ICE-2303291586
	NABL ULR No. :TC592623000003749F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

Test Report as per :	: EPA Act 1986/PCLS/2010
Sampling Information :	
Date of Monitoring	: 15-03-2023
Time of Monitoring	: 14:45 to 15:09 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 Ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 405 Ton/hrs
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached to Boiler Unit-2
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 24
Purpose of Monitoring	: For Self Monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
Observations :	


Saurabh Sharma
29-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303210770
	Sample Reg. Date :21-03-2023
	Report Date :29-03-2023
	Report No. :ICE-2303291586
	NABL ULR No. :TC592623000003749F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

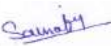
Flue Gas Temperature, °C,Avg.	: 125
Flue Gas Velocity(m/s),Avg.	: 23.45
Volumetric Flow Rate(Nm ³ /hr.)	: 2662533.85
Ambient Air Temperature, °C	: 25

S.No.	Parameters	Method	Specification	Result
Discipline : Chemical				
Group : Atmospheric Pollution				
1.	General Parameters			
a.	Particulate Matter, mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-1)	Max. 50	45.18
b.	Sulphur Dioxide (SO ₂), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-2)	Max. 200	1325.49
c.	Oxides of Nitrogen (NO _x), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-7)	Max. 450	198.71
d.	Mercury(As Hg),mg/Nm ³	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO ₂), %	IS:13270	Not Specified	10.2

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification Requirements as per EPA Act 1986/PCLS/2010, Sample collected by lab rep. on dated 15.03.2023, Sampling Procedure - SOP/ITC/EW/056

REMARKS :N/A


Saurabh Sharma
29-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

Disclaimer :

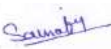
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Test Report

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Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303210770 Sample Reg. Date :21-03-2023 Report Date :29-03-2023 Report No. :ICE-2303291586 NABL ULR No. :TC592623000003749F Customer Ref. No. :PO Letter Dated :25.11.2022
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*****End Of Report*****


Saurabh Sharma
29-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

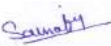
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Test Report

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303210769
	Sample Reg. Date :21-03-2023
	Report Date :29-03-2023
	Report No. :ICE-2303291620
	NABL ULR No. :TC592623000003834F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

Test Report as per :	: EPA Act 1986/PCLS/2010
Sampling Information :	
Date of Monitoring	: 15-03-2023
Time of Monitoring	: 15:45 to 16:33 hrs
Name of the emission source monitored	: Stack Emission of Boiler
Rated Capacity	: 2322 Ton
Capacity on sampling day	: -do-
Type of fuel used & its consumption	: Coal & 391 Ton/hrs
Normal operating schedule	: 24 hrs
Stack Identification	: Stack attached to Boiler Unit-1
Type of Stack/Duct	: Metal
Stack Height from Ground Level(m)	: 275
Diameter of the Stack(cm)	: 750
Sampling Duration(minutes)	: 48
Purpose of Monitoring	: For Self Monitoring
Air Pollution control measure	: ESPs
Status	: Working
Recovery of Material	: -
Fugitive Emission,if any	: Nil
Observations :	


Saurabh Sharma
29-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

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Test Report

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303210769
	Sample Reg. Date :21-03-2023
	Report Date :29-03-2023
	Report No. :ICE-2303291620
	NABL ULR No. :TC592623000003834F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022


Flue Gas Temperature, °C,Avg.	: 122
Flue Gas Velocity(m/s),Avg.	: 24.20
Volumetric Flow Rate(Nm ³ /hr.)	: 2768558.04
Ambient Air Temperature, °C	: 25


S.No.	Parameters	Method	Specification	Result
Discipline : Chemical				
Group : Atmospheric Pollution				
1.	General Parameters			
a.	Particulate Matter, mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-1)	Max. 50	46.26
b.	Sulphur Dioxide (SO ₂), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-2)	Max. 200	1013.14
c.	Oxides of Nitrogen (NO _x), mg/Nm ³ (Corrected to 6% O ₂ on dry basis)	IS:11255(P-7)	Max. 450	185.16
d.	Mercury(As Hg),mg/Nm ³	USEPA Method	Max. 0.03	BLQ(LOQ:0.01)
e.	Carbon Monoxide(CO),% v/v	IS:13270	Max. 1.0	0.2
f.	Carbon Dioxide (CO ₂), %	IS:13270	Not Specified	9.1

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification Requirements as per EPA Act 1986/PCLS/2010, Sample collected by lab rep. on dated 15.03.2023, Sampling Procedure - SOP/ITC/EW/056

REMARKS :N/A


Saurabh Sharma
29-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

Disclaimer :

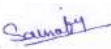
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Test Report

Document QF : 2501
Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303210769 Sample Reg. Date :21-03-2023 Report Date :29-03-2023 Report No. :ICE-2303291620 NABL ULR No. :TC592623000003834F Customer Ref. No. :PO Letter Dated :25.11.2022
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*****End Of Report*****


Saurabh Sharma
29-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

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- Legal disputes are subjected to Panchkula Jurisdiction only.



PUNJAB POLLUTION CONTROL BOARD
AIR LABORATORY, HEAD OFFICE, VATAVARAN BHAWAN, PATIALA
 Telefax: 0175-2302392

Email : ppchl@lab@gmail.com

1. Laboratory Sample No. 874-75/H.O.Lab/Air/Monitoring/2022-23
2. Name of Industry M/s Nabha Power Ltd, Rajpura, Distt. Patiala
3. Name of Sample collecting Officer I.r. Garima Garg, AEE and Dr Rupinder Kaur SA
4. Designation of authorizing Test Environmental Engineer, Regional Office Patiala
5. Type of Sample Stack Emission
6. Date & Time of Sample collection 22.9.2022
7. Date & Time of Sample receipt in Lab. 23.9.2022
8. Point of Sample collection Details as given below

ਸ:ਵ:ਦਿ: 1/2/3/5.A

ਨਕਲ ਭੇਜ

ਦਿ: ਦਿ: 30/9/22

ਤਾਰੀਖੀ ਨੰ. 9639 ਮਿਤੀ 3/10/22

RESULTS

S.No.	Point of Sample Collection	Parameter	Results	Prescribed Standard
1.	From port hole on stack after APCD (Unit I - 700 MW 2322 TPH)	Particulate Matter (mg/Nm ³)	45	50
2.	From port hole on stack after APCD (Unit II - 700 MW 2322 TPH)	Particulate Matter (mg/Nm ³)	41	50

Note: If any other limits/specific standard has been prescribed time to time by MoEF&CC, CPCB and PPCB then those limits/specific standard would prevail subject to clarification from the concerned Regional Office.

Alpinder
29/9/2022

Analysed by

Shane
30/9/22

Scientific Officer
(Air Lab)

Endst. No: 20701-03

DI. 30/09/2022

A copy of the above is forwarded to the following for information and necessary action:

1. The Chief Environmental Engineer (Air), Punjab Pollution Control Board, Jalandhar
2. The Senior Environmental Engineer, Punjab Pollution Control Board, Zonal Office-I, Patiala
3. The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Patiala

Alpinder
30/9/22

Asstt. Scientific Officer
(Air Lab)



PUNJAB POLLUTION CONTROL BOARD

AIR LABORATORY, HEAD OFFICE, VATAVARAN BHAWAN, PATIALA

Telefax: 0175-2302392

Email : ppcbairlab@gmail.com

1. Laboratory Sample No. 1496-97/H.O.Lab./Air/Monitoring/2022-23
2. Name of Industry M/s Nabha Power Ltd, Villagre Nalash, Rajpura, Dist. Patiala.
3. Name of Sample collecting Officer Er. Rohit Singla (EE), Er Simarpreet Singh (AEE) & Mrs Shaminder Kaur SA
4. Designation of authorizing Test Environmental Engineer, Regional Office Patiala
5. Type of Sample Stack Emission
6. Date & Time of Sample collection 29.3.2023
7. Date & Time of Sample receipt in Lab. 31.3.2023
8. Point of Sample collection Details as given below

RESULTS

S.No.	Point of Sample Collection	Parameter	Results	Prescribed Standard
1	From port hole on stack after APCD (Unit I - 700 MW 2322 TPH)	Particulate Matter (mg/Nm ³)	44	50
2	From port hole on stack after APCD (Unit II - 700 MW 2322 TPH)	Particulate Matter (mg/Nm ³)	41	50

Note:- If any, other limits/specific standard has been prescribed time to time by MoEF&CC, CPCB and PPCB then those limits/specific standard would prevail subject to clarification from the concerned Regional Office.

Rubina
6/4/2023

Analysed by

Endst. No: 8791-93

Dt. 11/4/23

Rubina
10/4/23
Scientific Officer
(Air Lab)

A copy of the above is forwarded to the following for information and necessary action:

1. The Chief Environmental Engineer (Air), Punjab Pollution Control Board, Jalandhar
2. The Senior Environmental Engineer, Punjab Pollution Control Board, Zonal Office-I, Patiala
3. The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Patiala

Rubina
8/4/2023
Asstt. Scientific Officer
(Air Lab)

Annexure-2



Continuous emission monitoring system installed at main stack for measurement of Particulate Matter & Gaseous Emissions.

Annexure- 3

Measures taken to control fugitive emissions

Annexure-3



Dust Extraction System at Crusher House



Dust Extraction System at Bunker

Annexure-3

1. Measures taken to control fugitive emissions during coal handling



Covered conveyors for transfer of coal from Wagon tippler to coal bunkers for abatement of fugitive emissions



Dust suppression (sprinkler system) provided at each coal stockpile to arrest Dust



Automated and Mechanized Coal handling System to minimize manual operations



Three side covered windscreens to control fugitive emissions due to wind flow

Annexure-3



Dust Suppression System installed at Wagon Tippler Area to control Fugitive Emission During Unloading of Coal.

Annexure-4

Fly Ash Utilization Report

**NPL 2 X 700MW,RAJPURA,
ASH GENERATION AND UTILIZATION REPORT FY 2022-23**

Month	Total Ash Generated (MT)	Total Ash Utilized (MT)	% Utilization
Apr-22	191423	194934	101.83%
May-22	195756	204143	104.28%
Jun-22	1,82,967	1,80,834	98.83%
Jul-22	1,64,433	1,65,274	100.51%
Aug-22	1,85,148	1,80,045	97.24%
Sep-22	1,78,925	1,71,809	96.02%
Oct-22	1,69,225	1,81,285	107.13%
Nov-22	1,30,799	1,30,799	100.00%
Dec-22	1,53,019	1,50,638	98.44%
Jan-23	1,91,566	1,61,164	84.13%
Feb-23	1,12,511	1,45,495	129.32%
Mar-23	2,44,974	2,44,874	99.96%
Total	21,00,746	21,11,294	100.50%

Annexure-5

Heavy Metal Analysis in Fly Ash & Bottom Ash Report

Test Report

Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200013
	Sample Reg. Date :20-03-2023
	Report Date :24-03-2023
	Report No. :ICB-2303240004
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

Test Report as per IS :Party Specification	With Amendment No.(s):
---	-------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Bottom Ash
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	
d)	Brand Name	NA
e)	Declared Values,if any	
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	450gm
k)	Batch Size#	NA
l)	Mode of Packing	Packed in poly pack
m)	Date of Receipt	20-03-2023
n)	Date of Start	21-03-2023
o)	Date of Completion	23-03-2023
p)	BIS Seal (Intact/Not Intact/Unsealed)	
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by Lab rep. on 15.03.2023
s)	Test Request Submitted By	Nabha Power Limited - Rajpura (Punjab)
t)	Manufactured By#	--

Brijesh Singh
24-03-2023
Reviewer

24-03-2023
Kamal Grover
[Authorized Signatory]

Disclaimer :

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200013 Sample Reg. Date :20-03-2023 Report Date :24-03-2023 Report No. :ICB-2303240004 Customer Ref. No.: PO Letter Dated :25.11.2022
--	---

u)	Supplied By#	Nabha Power Limited
----	--------------	---------------------

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Bottom Ash (sample received in good condition)			
S.No.	Parameter	Instrument	Method	Specification	Result
Discipline : Chemical					
Group : Chemicals Solid Fuels					
1.	Heavy Metals				
a.	Lead(as Pb)(mg/kg)	ICPOES	STP/ITC/F/INST/008		BLQ(LOQ:1.0)
b.	Mercury(as Hg)(mg/kg)	ICPOES	STP/ITC/F/INST/008		BLQ(LOQ:1.0)
c.	Arsenic(as As)(mg/kg)	ICPOES	STP/ITC/F/INST/008		1.68
d.	Chromium(as Cr)(mg/kg)	ICPOES	STP/ITC/F/INST/008		1.52

represents Customer Defined Fields

NOTE :

REMARKS :Party has asked for the above tests only.

*****End Of Report*****

Brijesh Singh
24-03-2023
Reviewer

24-03-2023
Kamal Grover
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200012 Sample Reg. Date :20-03-2023 Report Date :24-03-2023 Report No. :ICB-2303240007 Customer Ref. No.: PO Letter Dated :25.11.2022
--	---

Test Report as per IS :Party Specification	With Amendment No.(s):
---	-------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Fly Ash
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NS
d)	Brand Name	NA
e)	Declared Values,if any	NS
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	400gm
k)	Batch Size#	NA
l)	Mode of Packing	Packed in poly pack
m)	Date of Receipt	20-03-2023
n)	Date of Start	21-03-2023
o)	Date of Completion	23-03-2023
p)	BIS Seal (Intact/Not Intact/Unsealed)	Unsealed
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by Lab rep. on 15.03.2023
s)	Test Request Submitted By	Nabha Power Limited - Rajpura (Punjab)
t)	Manufactured By#	--

Brijesh Singh
24-03-2023
Reviewer

24-03-2023
Kamal Grover
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200012 Sample Reg. Date :20-03-2023 Report Date :24-03-2023 Report No. :ICB-2303240007 Customer Ref. No.: PO Letter Dated :25.11.2022
--	---

u)	Supplied By#	Nabha Power Limited
----	--------------	---------------------

PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Fly Ash Sample			
S.No.	Parameter	Instrument	Method	Specification	Result
Discipline : Chemical					
Group : Mechanical- Soil & Rock					
1.	Heavy Metals				
a.	Lead(as Pb)(mg/kg)	ICPOES	STP/ITC/F/INST/008		2.83
b.	Mercury(as Hg)(mg/kg)	ICPOES	STP/ITC/F/INST/008		BLQ(LOQ:1.0)
c.	Arsenic(as As)(mg/kg)	ICPOES	STP/ITC/F/INST/008		5.68
d.	Chromium(as Cr)(mg/kg)	ICPOES	STP/ITC/F/INST/008		2.71

represents Customer Defined Fields

NOTE :

REMARKS :Party has asked for the above tests only.

*****End Of Report*****

Brijesh Singh
24-03-2023
Reviewer

24-03-2023
Kamal Grover
[Authorized Signatory]

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Annexure-6

Treated Sewage Monitoring Results

Test Report


Document QF : 2501

Page 1 of 3

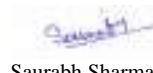
Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230852 Sample Reg. Date :23-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291367 NABL ULR No. :TC592622000017598F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS: EPA Act 1986/PCLS/2010	With Amendment No.(s):
--	-------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	STP Outlet Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in cans
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	27-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. on 22.12.2022


 27-12-2022
Deepika Heera
 [Authorized Signatory]


 Saurabh Sharma
 29-12-2022
Reviewer


 29-12-2022
PremKumar
 [Authorized Signatory]

Disclaimer :

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Test Report

Document QF : 2501

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230852 Sample Reg. Date :23-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291367 NABL ULR No. :TC592622000017598F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

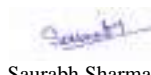
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description				
Description		STP Outlet Water		
S.No.	Parameters	Method	Specification	Result
Discipline : Chemical				
Group : Pollution & Environment				
1. General Parameters				
a.	Colour	IS 3025 (Part 4) : 2021	Not Specified	Colourless
b.	pH Value	IS: 3025 (Part 11): 2017	6.5-9	7.52
c.	Total Suspended Solids,(mg/L)	IS 3025 (Part 17): 2017	Max. 100	6
d.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part 58) : 2017	Not Specified	4.0
e.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019	Max. 30	1.8
f.	Total Kjeldahl Nitrogen as N (mg/L)	IS 3025 (Part 34) : 2019	Max. 100	3.9
g.	Total Phosphorous as P (mg/L)	APHA 23rd Edition 4500 - P D: 2017	Not Specified	0.62


 27-12-2022
Deepika Heera
 [Authorized Signatory]


 Saurabh Sharma
 29-12-2022
Reviewer


 29-12-2022
PremKumar
 [Authorized Signatory]

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Test Report

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Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230852 Sample Reg. Date :23-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291367 NABL ULR No. :TC592622000017598F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

	Discipline : Biological			
	Group : Pollution & Environment			
1.	Microbiological Tests			
a.	Faecal Coliform, MPN/100ml	APHA-23 rd Edn 17-9221 F	Max. 1000	350

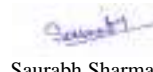
represents Customer Defined Fields

NOTE : NA- Not Applicable, Requirements as per EPA Act 1986/PCLS/2010, Sampling Procedure - SOP/ITC/EW/030, Purpose - For Self Monitoring

REMARKS : N/A

*****End Of Report*****


 27-12-2022
Deepika Heera
 [Authorized Signatory]


 Saurabh Sharma
 29-12-2022
Reviewer


 29-12-2022
PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140438 Sample Reg. Date :14-03-2023 Report Date :27-03-2023 Report No. :ICE-2303271376 NABL ULR No. :TC592623000003633F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

Test Report as per IS: EPA Act 1986/PCLS/2010	With Amendment No.(s):
--	-------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	STP Outlet Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr 100ml
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in plastic container
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	20-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. on dated: 13.03.2023


 20-03-2023
Deepika Heera
 [Authorized Signatory]


 Saurabh Sharma
 27-03-2023
Reviewer


 27-03-2023
PremKumar
 [Authorized Signatory]

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Test Report

Document OF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140438
	Sample Reg. Date :14-03-2023
	Report Date :27-03-2023
	Report No. :ICE-2303271376
	NABL ULR No. :TC592623000003633F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022
s) Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t) Manufactured By#	NA
u) Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Turbid Liquid			
S.No.	Parameters	Method	Specification	Result
	Discipline : Chemical			
	Group : Pollution & Environment			
1.	General Parameters			
a.	Colour	IS 3025 (Part 4) : 2021	Not Specified	Colourless
b.	pH Value	IS: 3025 (Part 11): 2017	6.5-9	7.27
c.	Total Suspended Solids,(mg/L)	IS 3025 (Part 17): 2017	Max. 100	8
d.	Chemical Oxygen Demand(mg/L)	IS 3025 (Part 58) : 2017	Not Specified	59
e.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS 3025 (Part 44) : 2019	Max. 30	13
f.	Total Kjeldahl Nitrogen as N (mg/L)	IS 3025 (Part 34) : 2019	Max. 100	4.4
g.	Total Phosphorous as P (mg/L)	APHA 23rd Edition 4500 - P D: 2017	Not Specified	2.3


20-03-2023
Deepika Heera
[Authorized Signatory]


Saurabh Sharma
27-03-2023
Reviewer


27-03-2023
PremKumar
[Authorized Signatory]

Disclaimer :

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Test Report

Document OF : 2501
Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		Sample Reg. No. :E01-2303140438 Sample Reg. Date :14-03-2023 Report Date :27-03-2023 Report No. :ICE-2303271376 NABL ULR No. :TC592623000003633F Customer Ref. No. :PO Letter Dated :25.11.2022		
Discipline : Biological				
Group : Pollution & Environment				
1. Microbiological Tests				
a.	Faecal Coliform, MPN/100ml	APHA-23 rd Edn 17-9221 F	Max. 1000	920

'#' represents Customer Defined Fields

NOTE : NA- Not Applicable, Requirements as per EPA Act 1986/PCLS/2010, Sampling Procedure : SOP/ITC/EW/030

REMARKS :N/A

*****End Of Report*****



20-03-2023
Deepika Heera
[Authorized Signatory]



Saurabh Sharma
27-03-2023
Reviewer



27-03-2023
PremKumar
[Authorized Signatory]

Disclaimer :

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E 202

Date: 22/3/23
Page: 1

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3

Dr. Ar

**PUNJAB POLLUTION CONTROL BOARD VATAVARAN BHAVAN,
NABHA ROAD, PATIALA
WATER ANALYSIS REPORT**

1. Laboratory Sample No. E-1851/ H.O.Lab. Monitoring/2022
2. ULR No. ULR-TC70451800000005719
3. Name of Industry M/s Nabha Power Ltd, Village Nalash, Rupnagar, Patiala.
4. Name of Sample collecting Officer Er. Navtresh Singla, EE
Er. Garima Garg, AEE
5. Designation of the officer authorizing Test Environmental Engineer, Regional Office, Patiala
6. Type of Sample Grab
7. Date & Time of Sample collection 14.12.2022
8. Date & Time of Sample receipt in Lab. 15.12.2022
9. Period of Analysis 15.12.2022 to 26.12.2022
10. Test Methods As per relevant parts of IS:3025/IS:1622 & Methods of APHA

Results

Sr. No.	Parameters	Outlet of STP
1.	pH	7.6
2.	Total Suspended Solids mg/l	18
3.	Total Dissolved Solids mg/l	459
4.	Chemical Oxygen Demand mg/l	34
5.	Bio-chemical Oxygen Demand mg/l	9
6.	Oil & Grease mg/l	BDL

Note: No Specific standards prescribed as per EPA, However, if any stringent/other standards have been imposed by the Board, the same shall prevail.

---End of Report---

Endst. No: 215-217

J. m m c
Scientific Officer
21/12/23
Dt. 3/1/2023

A copy of the above is forwarded to the:-

1. The Chief Environmental Engineer, Punjab Pollution Control Board, Ludhiana.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office-I, Patiala.
3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Dr. Ar
Asst. Scientific Officer
21/12/23

**NABHA ROAD, PATIALA
WATER ANALYSIS REPORT**

- | | |
|--|--|
| 1. Laboratory Sample No. | E-2655/ H.O.Lab. Monitoring/2023 |
| 2. ULR No. | ULR-TC704518000000006194 |
| 3. Name of Industry | M/s Nabha Power Ltd., Vill. Nalash Rajpura, Distt. Patiala |
| 4. Name of Sample collecting Officer | Er. Rohit Singla. EE &
Er. Simarpreet Singh. AEE |
| 5. Designation of the officer authorizing Test | Environmental Engineer, Regional Office, Patiala |
| 6. Type of Sample | Grab |
| 7. Date & Time of Sample collection | 29.03.2023 |
| 8. Date & Time of Sample receipt in Lab. | 30.03.2023 |
| 9. Period of Analysis | 30.03.2023 to 12.04.2023 |
| 10. Test Methods | As per relevant parts of IS:3025/&Methods of APHA |

Results

Sr. No.	Parameters	Outlet of STP
1	pH	7.7
2	Total Suspended Solids mg/l	BDL
3	Total Dissolved Solids mg/l	561
4	Chemical Oxygen Demand mg/l	22
5	Bio-chemical Oxygen Demand mg/l	6
6	Oil & grease mg/l	BDL

Remarks: No specific standards prescribed as per E.P.A However, if any stringent /other standards have been decided by the Board, the same shall prevail
BDL means below method detection limit

---End of Report---

J. Singh
Scientific Officer
12/4/23

Endst. No: 9144-46

Dt. 17-4-23

A copy of the above is forwarded to the:-

1. The Chief Environmental Engineer, Punjab Pollution Control Board, Ludhiana.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office-I, Patiala
- ✓ 3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

J. Singh
Asstt. Scientific Officer
12/4/23

Annexure-7

Ground Water Quality Monitoring Results

Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230853 Sample Reg. Date :23-12-2022 Report Date :30-12-2022 Report No. :ICE-2212301433 (1) NABL ULR No. :TC592622000017669F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	30-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer No.1


 Saurabh Sharma
 30-12-2022
 Reviewer


 30-12-2022
 PremKumar
 [Authorized Signatory]

Disclaimer :

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Test Report

Document QF : 2501

Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230853 Sample Reg. Date :23-12-2022 Report Date :30-12-2022 Report No. :ICE-2212301433 (1) NABL ULR No. :TC592622000017669F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA


PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Clear colorless liquid .
-------------	--------------------------

S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1.	Organoleptic & Physical Parameter				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.84
2.	Parameters Concerning Undesirable Substances in excess amount				
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	84
3.	General Parameters				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	487
4.	Parameters Concerning Toxic Substances				


 Saurabh Sharma
 30-12-2022
 Reviewer


 30-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230853 Sample Reg. Date :23-12-2022 Report Date :30-12-2022 Report No. :ICE-2212301433 (1) NABL ULR No. :TC592622000017669F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--


a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS : The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


 Saurabh Sharma
 30-12-2022
 Reviewer


 30-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230853 Sample Reg. Date :23-12-2022 Report Date :30-12-2022 Report No. :ICE-2212301433 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	30-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer No.1
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA


 Saurabh Sharma
 30-12-2022
 Reviewer


 30-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230853
	Sample Reg. Date :23-12-2022
	Report Date :30-12-2022
	Report No. :ICE-2212301433 (2)
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

u)	Supplied By#	NA
----	--------------	----

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A


Description					
Description		Clear colorless liquid .			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1.	General Parameters				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	6
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*****End Of Report*****


Saurabh Sharma
30-12-2022
Reviewer


30-12-2022
PremKumar
[Authorized Signatory]

Disclaimer :

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Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230854 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281342 (1) NABL ULR No. :TC592622000017582F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	28-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer-2


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

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Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230854 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281342 (1) NABL ULR No. :TC592622000017582F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA


PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Clear colorless liquid.
-------------	-------------------------

S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1.	Organoleptic & Physical Parameter				
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.88
2.	Parameters Concerning Undesirable Substances in excess amount				
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	94
3.	General Parameters				
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	498
4.	Parameters Concerning Toxic Substances				


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230854 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281342 (1) NABL ULR No. :TC592622000017582F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--


a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501
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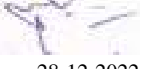
Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230854 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281342 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	28-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer-2
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230854 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281342 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

u) Supplied By#	NA
-----------------	----

PART B : SUPPLIMENTARY INFORMATIONS

a. Reference to sampling procedure, whenever applicable	: N/A
b. Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c. Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A


Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. General Parameters					
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	6
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*****End Of Report*****


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230855 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281343 (1) NABL ULR No. :TC592622000017583F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	28-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer-3


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230855 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281343 (1) NABL ULR No. :TC592622000017583F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. Organoleptic & Physical Parameter					
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	8.04
2. Parameters Concerning Undesirable Substances in excess amount					
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	82
3. General Parameters					
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	490
4. Parameters Concerning Toxic Substances					


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230855 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281343 (1) NABL ULR No. :TC592622000017583F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--


a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230855 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281343 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	28-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer-3
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA


 Saurabh Sharma
 28-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230855 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281343 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

u) Supplied By#	NA
-----------------	----

PART B : SUPPLEMENTARY INFORMATIONS

a. Reference to sampling procedure, whenever applicable	: N/A
b. Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c. Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A


Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. General Parameters					
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	6
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)


represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*****End Of Report*****


Saurabh Sharma
28-12-2022
Reviewer


28-12-2022
PremKumar
[Authorized Signatory]

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Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230856 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281345 (1) NABL ULR No. :TC592622000017626F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	28-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer-4


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

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Page 2 of 3


Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230856 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281345 (1) NABL ULR No. :TC592622000017626F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. Organoleptic & Physical Parameter					
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.93
2. Parameters Concerning Undesirable Substances in excess amount					
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	92
3. General Parameters					
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	498
4. Parameters Concerning Toxic Substances					


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230856 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281345 (1) NABL ULR No. :TC592622000017626F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--


a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQ(LOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQ(LOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQ(LOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQ(LOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


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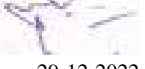
Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230856 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281345 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 to 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	3 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can & in bottle
m)	Date of Receipt	23-12-2022
n)	Date of Start	23-12-2022
o)	Date of Completion	28-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ram Gopal on 22.12.2022, Sample from Piezometer-4
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230856 Sample Reg. Date :23-12-2022 Report Date :28-12-2022 Report No. :ICE-2212281345 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

u) Supplied By#	NA
-----------------	----

PART B : SUPPLEMENTARY INFORMATIONS

a. Reference to sampling procedure, whenever applicable	: N/A
b. Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c. Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A


Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. General Parameters					
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	7
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

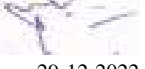
represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*****End Of Report*****


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501

Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140439 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241298 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr.. : 13.03.2023, Sample from Piezometer-1
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By #	NA
u)	Supplied By #	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Test Report

Document QF : 2501

Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140439 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241298 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	Discipline : Chemical				
	Group : Water				
1.	General Parameters				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	<1.0
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


Test Report

Document QF : 2501
Page 1 of 3


Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140439 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241298 (1) NABL ULR No. :TC592623000003539F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr.. : 13.03.2023, Sample from Piezometer-1


 Saurabh Sharma
 24-03-2023
 Reviewer


 24-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140439 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241298 (1) NABL ULR No. :TC592623000003539F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. Organoleptic & Physical Parameter					
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.80
2. General Parameters					
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	493
3. Parameters Concerning Undesirable Substances in excess amount					
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	438
4. Parameters Concerning Toxic Substances					

Saurabh Sharma
24-03-2023
Reviewer

24-03-2023
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		Sample Reg. No. :E01-2303140439 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241298 (1) NABL ULR No. :TC592623000003539F Customer Ref. No. :PO Letter Dated :25.11.2022			
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQLOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQLOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQLOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQLOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


Saurabh Sharma
24-03-2023
Reviewer


24-03-2023
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501

Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140440 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241305 (2) Customer Ref. No.: PO Letter Dated :25.11.2022
---	---

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023, Sample from Piezometer-2
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By #	NA
u)	Supplied By #	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

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Test Report

Document QF : 2501

Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140440 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241305 (2) Customer Ref. No. :PO Letter Dated :25.11.2022
---	---

Description	Clear colorless liquid.				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	Discipline : Chemical				
	Group : Water				
1.	General Parameters				
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	<1.0
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

'#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*****End Of Report*****


Test Report


Document QF : 2501
Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140440 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241305 (1) NABL ULR No. :TC592623000003552F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
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PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023, Sample from Piezometer-2


 Saurabh Sharma
 24-03-2023
 Reviewer


 24-03-2023
 PremKumar
 [Authorized Signatory]

Disclaimer :

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Test Report

Document OF : 2501
Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140440 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241305 (1) NABL ULR No. :TC592623000003552F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. Organoleptic & Physical Parameter					
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.70
2. General Parameters					
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	480
3. Parameters Concerning Undesirable Substances in excess amount					
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	450
4. Parameters Concerning Toxic Substances					

Saurabh Sharma
24-03-2023
Reviewer

24-03-2023
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 3 of 3


Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura		Sample Reg. No. :E01-2303140440 Sample Reg. Date :14-03-2023 Report Date :24-03-2023 Report No. :ICE-2303241305 (1) NABL ULR No. :TC592623000003552F Customer Ref. No. :PO Letter Dated :25.11.2022			
a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQLOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQLOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQLOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQLOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*****End Of Report*****


Saurabh Sharma
24-03-2023
Reviewer


24-03-2023
PremKumar
[Authorized Signatory]

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Test Report


Document QF : 2501


Page 1 of 3


Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140441
	Sample Reg. Date :14-03-2023
	Report Date :22-03-2023
	Report No. :ICE-2303221190 (2)
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s): 01 TO 04
--	--

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Code No.	
f)	Batch Number#	NA
g)	D.O.M#	NA
h)	Date of Expiry#	NA
i)	Sample Quantity#	2 Ltr
j)	Batch Size/Location#	NA
k)	Mode of Packing	Packed in can
l)	Date of Receipt	14-03-2023
m)	Date of Start	14-03-2023
n)	Date of Completion	18-03-2023
o)	Seal (Intact/Not Intact/Unsealed)	NA
p)	IO'S Signature (Signed/Unsigned)	Unsigned
q)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023, Sample from Piezometer-3
r)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
s)	Manufactured By#	NA


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140441
	Sample Reg. Date :14-03-2023
	Report Date :22-03-2023
	Report No. :ICE-2303221190 (2)
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

t)	Supplied By#	NA
----	--------------	----

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description						
Description		Clear colorless liquid.				
S.No.	Parameters	Instrument	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical						
Group : Water						
1.	General Parameters					
a.	Total Suspended Solids,(mg/L)	Gravimetric	IS:3025(Part 17)		Not Specified	<1.0
b.	Chemical Oxygen Demand(mg/L)	COD Reflux Assembly	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	BOD Incubator	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

Saurabh Sharma
22-03-2023
Reviewer

22-03-2023
PremKumar
[Authorized Signatory]

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Test Report

Document QF : 2501

Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140441 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221190 (2) Customer Ref. No. :PO Letter Dated :25.11.2022
---	---

*****End Of Report*****



Saurabh Sharma
22-03-2023
Reviewer



22-03-2023
PremKumar
[Authorized Signatory]

Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)

Panchkula-134109 (Haryana)

Phone : (O) 0172-2561543, 2565825

Email : customersupport@itclabs.com

Visit us :www.itclabs.com

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Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140441 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221190 (1) NABL ULR No. :TC592623000003418F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Code No.	
f)	Batch Number#	NA
g)	D.O.M#	NA
h)	Date of Expiry#	NA
i)	Sample Quantity#	2 Ltr
j)	Batch Size/Location#	NA
k)	Mode of Packing	Packed in can
l)	Date of Receipt	14-03-2023
m)	Date of Start	14-03-2023
n)	Date of Completion	18-03-2023
o)	Seal (Intact/Not Intact/Unsealed)	NA
p)	IO'S Signature (Signed/Unsigned)	Unsigned
q)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023, Sample from Piezometer-3
r)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140441 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221190 (1) NABL ULR No. :TC592623000003418F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Manufactured By #	NA
t)	Supplied By #	NA


PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Clear colorless liquid.
-------------	-------------------------

S.No.	Parameters	Instrument	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical						
Group : Water						
1.	Organoleptic & Physical Parameter					
a.	pH Value	pH Meter	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.50
2.	General Parameters					
a.	Total Dissolved Solids (mg/L)	Gravimetric	IS:3025(P-16)	500 Max.	2000 Max.	486
3.	Parameters Concerning Undesirable Substances in excess amount					
a.	Total Hardness(as CaCO ₃),(mg/L)	Titration	IS 3025 (Part 21)	200 Max.	600 Max.	462
4.	Parameters Concerning Toxic Substances					


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140441 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221190 (1) NABL ULR No. :TC592623000003418F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

a.	Lead(as Pb)(mg/L)	ICPMS	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQLOQ:0.002)
b.	Mercury(as Hg)(mg/L)	ICPMS	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQLOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	ICPMS	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQLOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	ICPMS	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQLOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdots with respect to the above tests.

*******End Of Report*******


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501

Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140442 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221191 (1) NABL ULR No. :TC592623000003432F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
---------------------------------------	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023, Sample from Piezometer-4


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

Disclaimer :

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Test Report

Document QF : 2501

Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140442 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221191 (1) NABL ULR No. :TC592623000003432F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA


PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Clear colorless liquid.
-------------	-------------------------

S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. Organoleptic & Physical Parameter					
a.	pH Value	IS:3025 (Part - 11):1983(RA:2017)	6.5-8.5	No relaxation	7.56
2. General Parameters					
a.	Total Dissolved Solids (mg/L)	IS:3025(P-16)	500 Max.	2000 Max.	470
3. Parameters Concerning Undesirable Substances in excess amount					
a.	Total Hardness(as CaCO ₃),(mg/L)	IS 3025 (Part 21)	200 Max.	600 Max.	473
4. Parameters Concerning Toxic Substances					


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

Disclaimer :

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- Legal disputes are subjected to Panchkula Jurisdiction only.

Test Report

Document QF : 2501

Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140442 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221191 (1) NABL ULR No. :TC592623000003432F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--


a.	Lead(as Pb)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	No Relaxation	BLQLOQ:0.002)
b.	Mercury(as Hg)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.001 Max.	No Relaxation	BLQLOQ:0.001)
c.	Total Arsenic(as As)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.01 Max.	0.05 Max.	BLQLOQ:0.002)
d.	Total Chromium(as Cr)(mg/L)	IS: 3025 (P-65)-2014 (RA 2019)	0.05 Max.	No Relaxation	BLQLOQ:0.002)

*' represents categories/test parameters not covered under NABL '#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdts with respect to the above tests.

*******End Of Report*******


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140442
	Sample Reg. Date :14-03-2023
	Report Date :22-03-2023
	Report No. :ICE-2303221191 (2)
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

Test Report as per IS:IS 10500 - 2012	With Amendment No.(s):01 TO 04
--	---------------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample #	Ground Water
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number #	NA
h)	D.O.M #	NA
i)	Date of Expiry #	NA
j)	Sample Quantity #	2 Ltr
k)	Batch Size/Location #	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023, Sample from Piezometer-4
s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140442
	Sample Reg. Date :14-03-2023
	Report Date :22-03-2023
	Report No. :ICE-2303221191 (2)
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS


a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A


Description					
Description		Clear colorless liquid.			
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. General Parameters					
a.	Total Suspended Solids,(mg/L)	IS:3025(Part 17)		Not Specified	<1.0
b.	Chemical Oxygen Demand(mg/L)	IS: 3025(Part-58)		Not Specified	BLQ(LOQ:4.0)
c.	Bio-chemical Oxygen Demand, mg/L (3 days at 27°C)	IS:3025(P-44)		Not Specified	BLQ(LOQ:1.0)

represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :The above referred sample of Ground Water conforms to IS 10500 - 2012 with upto date amdots with respect to the above tests.


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 3 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140442 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221191 (2) Customer Ref. No. :PO Letter Dated :25.11.2022
---	---

*****End Of Report*****



Saurabh Sharma
22-03-2023
Reviewer



22-03-2023
PremKumar
[Authorized Signatory]

Interstellar Testing Centre Pvt. Ltd.

86, Industrial Area, Phase-1, Panchkula-134109 (Haryana)

Panchkula-134109 (Haryana)

Phone : (O) 0172-2561543, 2565825

Email : customersupport@itclabs.com

Visit us :www.itclabs.com

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**PUNJAB POLLUTION CONTROL BOARD VATAVARAN BHAVAN,
NABHA ROAD, PATIALA
GROUND WATER REPORT**

Handwritten initials and signature

- | | |
|--|--|
| 1. Laboratory Sample No. | GW 241-244/ H.O.Lab./ G.W. Monitoring/2022 |
| 2. ULR Number | ULR-TC704518000000005720 |
| 3. Name of Industry | Ground Water Samples taken from
M/s Nabha Power Plant Limited, Rajpura. |
| 4. Name of Sample collecting Officer | Er. Navtresh Singla, EE
Er. Garima Garg, AEE |
| 5. Designation of authorizing Test | EE, RO, Patiala. |
| 6. Date & Time of Sample collection | 14.12.2022 |
| 7. Date & Time of Sample receipt in Lab. | 15.12.2022 |
| 8. Period of Analysis | 15.12.2022 to 26.12.2022 |
| 9. Test Methods | As per relevant parts of IS:3025 &
Methods of APHA |

Handwritten text: R.O. Patiala

Handwritten signature

Handwritten text: 15 31/1/23

Results

Sr. no.	Parameters	Near Coal Handling Plant	Near Storm Water Sump	Along ash dyke	Between Ash dyke and reservoir
1	pH	7.3	7.0	7.4	7.5
2	Total Suspended Solids mg/l	BDL	18	28	BDL
3	Total Dissolved Solids mg/l	349	338	346	321
4	Chemical Oxygen Demand mg/l	BDL	BDL	12	BDL
5	Bio-Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
6	Total Hardness mg/l	206	195	218	206
7	Calcium Hardness mg/l	141	132	135	164
8	Magnesium Hardness mg/l	65	63	83	42
9	Total Alkalinity mg/l	192	204	228	190
10	Chloride mg/l	32	30	36	34
11	Sulphate mg/l	14	16	18	20
12	Mercury mg/l	BDL	BDL	BDL	BDL
13	Magnesium mg/l	16	15	20	10
14	Lead mg/l	BDL	BDL	BDL	BDL
15	Total Chromium mg/l	BDL	BDL	BDL	BDL

Note: BDL means Below Method Detection Limit.

--End of Report--

Handwritten signature
Scientific Officer
21/1/23

Endst. No: 218-220

DL 31/1/2023

A copy of the above is forwarded to the:-

- The Chief Environmental Engineer (Water), Punjab Pollution Control Board, Ludhiana.
- The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office, -I, Patiala.
- The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Handwritten signature
for Asst. Scientific Officer

Handwritten signature
21/1/23

**PUNJAB POLLUTION CONTROL BOARD VATAVARAN BHAVAN,
NABHA ROAD, PATIALA
GROUND WATER REPORT**

1. Laboratory Sample No.	GW 290-293/ H.O.Lab./ G.W. Monitoring/2023
2. ULR Number	ULR-TC704518000000006216
3. Name of Industry	Ground Water Samples taken from M/s Nabha Power Plant Limited, Rajpura.
4. Name of Sample collecting Officer	Er. Simarpreet Singh, AEE
5. Designation of authorizing Test	EE, RO, Patiala.
6. Date & Time of Sample collection	30.03.2023
7. Date & Time of Sample receipt in Lab.	31.03.2023
8. Period of Analysis	31.03.2023 to 17.04.2023
9. Test Methods	As per relevant parts of IS:3025 & Methods of APHA

ਸ:ਵ:ਟਿ:-1/2/3/S.A.

ਨਵੀਂ ਡਾਕ
18/4/23

20/4/23

ਡਾਇਰੀ ਨੰ. 1849 20/4/23

Results

Sr. no.	Parameters	Near Coal Handling Plant	Near Storm Water Sump	Along ash dyke	Between Ash dyke and reservior
1	pH	8.2	8.0	7.9	8.0
2	Total Suspended Solids mg/l	BDL	BDL	BDL	BDL
3	Total Dissolved Solids mg/l	487	500	975	491
4	Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
5	Bio-Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
6	Total Hardness mg/l	256	272	292	236
7	Calcium Hardness mg/l	174	185	181	156
8	Magnesium Hardness mg/l	82	87	111	80
9	Total Alkalinity mg/l	268	300	314	290
10	Chloride mg/l	41	45	14	18
11	Sulphate mg/l	19	24	15	17
12	Mercury mg/l	BDL	BDL	BDL	BDL
13	Magnesium mg/l	20	21	27	19
14	Lead mg/l	BDL	BDL	BDL	BDL
15	Total Chromium mg/l	BDL	BDL	BDL	BDL

Note: BDL means Below Method Detection Limit.

--End of Report--

Scientific Officer
18/4/23

Endst. No: 9407-09

Dt. 19-4-23

A copy of the above is forwarded to the:-

1. The Chief Environmental Engineer (Water), Punjab Pollution Control Board, Ludhiana.
2. The Senior Environment Engineer, Punjab Pollution Control Board, Zonal Office.-I, Patiala.
3. The Environment Engineer, Punjab Pollution Control Board, Regional Office, Patiala.

Asst. Scientific Officer
18/4/23

18/04/23

Annexure-8

Green Belt Photographs

Annexure-8

NPL is having a complete dedicated team of skilled horticulturists for the forestation and greenery development program at our plant. A green belt are developed inside as well outside plant premises. Also, small patches of gardens are developed inside of the plant premises wherever the open space is available to improve the plant beautification.



Pic-1 Green belt around coal stockpile area



Pic-2 Green belt around plant premises



Pic-3 Green belt along boundary



Pic-4 Green belt on both sides of road



Pic-5 Green belt area railway siding

Annexure-09

CSR Projects and Initiatives FY-23 (Annual)



Nabha Power Limited

Corporate Social Responsibility
FY23

Outreach

Villages: 49

Population: 47600

Panchayats: 47

Periphery: 5 Km. radius



Thematic Focus Area



Health



Skill &
Entrepreneurship
Development



Education & Sports



Water & Environment



Rural Development



Disaster
Management



**SKILL & ENTERPRENEURSHIP
DEVELOPMENT**



NPL PRODUCTION & SKILL DEVELOPMENT CENTERS



PRODUCTION CENTERS

Production centres
5 Centers
5 Villages

Products made
School Dress, Apparel,
Jute & Fulkaari

Active Artisans
47

FY 23 Earnings
INR 17 lakh +
(FY 22 INR 9.56 Lakh)

STITCHING AND BEAUTICIAN TRAINING

Training Centres
4

Villages Covered
8

Trained
91

Current Batch
118



UDYOGINI

Rural Self Employment Initiative



Helped NPL Trained Women To Set Up 8 Women Lead Enterprises Set Up in 7 Villages





ITI Scholarships



S.No	Name of student	Gender	Father's Name	Village	Qualification	Name of Course
1	Gurkirat Singh	Male	Bhagwant Singh	Uppal Heri	10th	Electrician
2	Inderpreet Singh	Male	Ranjit Singh	Uppal Heri	12th	Weilder
3	Rohit Kumar	Male	Subash Chandar	Akbarpur	10th	Electrician
4	Didar Singh	Male	Mohar Singh	Akbarpur	12th	RAC (NCVT)
5	Prabhleen Singh	Male	S Jaswinder Singh	Bhagrana	12th	Mechanic Auto electric & Elec
6	Mohd Sahid Khan	Male	Sukardin	Dadu Mazra	NA	Fitter (NCVT)
7	Harpreet Singh	Male	Malkeet Singh	Dhuman	12th	Mechanic Auto electric & Elec
8	Rajwinder Singh	Male	Manjeet Kaur	Kharola	12th	Carpainter
9	Paramveer Singh	Male	Jagjeet Singh	Sadhrou	12th	Turner
10	Harpreet Singh	Male	Mangat Ram	Dadu Mazra	12th	Turner
11	Gurkirat Singh	Male	Sukhwinder Singh	Basantpura	12th	Carpainter
12	Gursimran Singh	Male	Kaka Singh	Dadu Mazra	12th	Fitter DST
13	Sunil Gir	Male	Naresh Kumar	Nalas Kalan	12th	Machinist

NPL Officials at Graduation Ceremony held for the first time that includes 15 NPL Scholars

13 Students of our catchment villages were enrolled for NPL SCHOLARSHIPS



EDUCATION



SCHOOL ADOPTION



Construction of School Block in GES Kotla



Construction of Multi-utility Hall in GSS School Bhappal

CONTINGENCY SUPPORT TO GOVT. SCHOOLS

Items to support **Mid-day meal kitchens** of 12 Govt Schools

Water Coolers and purifiers for 11 Govt Schools

Whitewash and repair works in Govt High School Badali Mai Ki and DAV School Patiala

Total 8 Schools covered under BALA Work

Installation of **15 kw on grid solar power plant** in DAV School Patiala



CONTINGENCY SUPPORT TO GOVT. SCHOOLS



NPL School Kit (Detachable desk, water bottle & pencil box) for over 5000 students of Govt Schools



NPL ATHLETICS ACADEMY

Sports training program for Children and Youths

- Started in May 2022
- Location village Dhumma
- 96 Trainees (Age 10yrs to 18 yrs)
- Provision of NIS Trained fulltime athletics trainer



Award Tally / Trainees Achievement

- 8 trainees have won 16 medals in Open District Athletic Championship held in Patiala on 25th Dec 2022
- 2 trainees participated in National Inter District Junior Athletic Meet (NIDJAM) organised at Patna





SPORTS INTERVENTION

Infrastructure improvement in NPL Sports Academy

- 237 Meters runners track developed at the NPL Sports academy
- Provision of 2 kw Solar Power Plant to illuminate the NPL Sports Academy





SPORTS EVENTS

Cycle Marathon

- Organised on 2nd Sept 2022 enroute 6 villages
- 100+ enthused participants



Athletics & Volleyball tournament

- Athletics & Volleyball tournament was organised on 2nd October 2022 at village Dhuman
- 657 athletes from 8 adjoining villages participated
- 1000+ spectators





YOUTH ENGAGEMENT

NPL Cup (Rural Sports Tournament)

NPL
Nabha Power Limited



In order to enhance connect with local youth and engage them in Sports/other curricular activities , NPL organised Two Rural Sports Tournaments (October 22 and March 23) comprising Kabaddi , Tug of War and Wrestling (Kushti). Total 76 teams (appox, 800 players) from across the Punjab state & local 49 CSR covered villages were participated”.



HEALTH



NPL SANJIVANI

Assistance to Govt. Health Centers

Prenatal & Postnatal care equipment's, furniture and invertors to 7 Health Dispensaries: 1000+ expecting and lactating mothers to benefit

Occupational Therapy Set up in SEHYOG Center for intellectually differently abled

Installation of 4 Water purifiers in Civil Hospital Rajpura to benefit nearly 800 patients on daily basis

Construction of Shed for patients, installation of water cooler & purifier, CCTV and recreation items for Govt. Drug de-addiction center Rajpura



NPL SANJIVANI Health Camps

Camps: Over 700 villagers

Type: Vision Correction, Blood Sampling, B.P& Sugar, Spirometry and Audiometry

Provision of spectacles for near vision for elderlies, **Post Camp follow up** of patients by ANM



Dhabali Kalan ; 7 Dec



Dadu Majra ; 8 Dec



Sural Kalan ; 7 Dec



Nalash Kalan; 8 Dec



Bakshiwala; 9 Dec

NPL SANJIVANI

Health Mela & Cancer Screening

**2 Camps :
1099 villagers**

**Screening of Breast, Oral,
Prostate, Cervical Cancer**

**Suspected cases of cancer were
referred for advance screening**

**Vision Correction of
300+ elderlies**





BLOOD DONATION CAMP

01 Camps



Under Youth connect program, Drive of Blood Donation Camps was organized with Village Panchayats & Youth Clubs of plant surrounding villages.

During the camps 55 units of Blood were collected with an objective to increase the Blood stock in Blood banks. An awareness campaigns on Drug abuse were also organized in the camps.



RURAL DEVELOPMENT



EWS HOUSING: 5 NOS.



In continuation to support the extremely needy families for a house, construction of 5 EWS Housing projects is in progress in five villages ,covering Sadhror, Rangian, Harna, Nalash Kalan and Sural Kalan.





RURAL INFRASTRUCTURE

Construction Of Village Roads

In order to strengthen the village infrastructure ,Nabha Power has constructed 1.5 kms roads in six village covering Cholti Kheri, Sadhror, Harna, Badal Colony, Jansua, Rangian. This would facilitate the village people for better connectivity and also enhance the village ambiance.





RURAL INFRASTRUCTURE

Construction of Community Shed & RCC Road



Chief Executive, NPL along with Senior Plant Officials formally handover newly constructed Community Shed at Vill Rai Majra ,similarly a Concrete Road at Vill. Badal Colony (Jansua), in the presence of Panchayat members & Village Residents.



RURAL INFRASTRUCTURE

Construction of Shed at Cholti Kheri Railway Bridge

NPL
Nabha Power Limited



To address the issue of water logging under the Railway bridge at Vill. Cholti Kheri , a shed of 170 ft. X 34 feet has been constructed at the both sides of the bridge. It is located on Basantpura-Chunni Road which connects surrounding 15-20 villages with Mohali & Chandigarh.



CROP PROTECTION

Construction of Pre-cast Boundary Wall



Considering the requests of Plant surrounding village Panchayats and Farmers , appox. 830 mtr. of precast boundary wall has been constructed to protect their crops from wild animals.



RURAL INFRASTRUCTURE

Convex Mirrors & Speed Breakers in 10 Villages

Considering the road safety especially during the winter/fog season ,installation of convex mirrors and speed breakers has done in the villages.





Water & Environment



REJUVENATION OF PONDS



Rejuvenating the village ponds/water bodies by removing silt, vegetation, excavation to enhance water storage capacity which is further being used for irrigation/fishery and also improved the health & hygiene, ecological balance and ground water table.



CLEANING OF PONDS & DRAINS

NPL
Nabha Power Limited



No. of village covered:- 14

Cleaning of the natural drains/water bodies to enhance their water storage capacity, removal of vegetation which help in curbing the flooding/water logging in the villages.



Annexure-10

Ambient Air Quality Monitoring Results


Test Report

Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260934
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291390
	NABL ULR No. :TC592622000017623F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near NDTTC (AAQMS-1)
Date of Monitoring	: 19-12-2022
Time of Monitoring	: 15:00 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1696.53
Avg. Ambient Temperature,°C	: 23

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	6.08
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	12.20
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	82.34
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	38.72
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	30.54
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

Disclaimer :

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260934
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291390
	NABL ULR No. :TC592622000017623F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022


g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	27.16
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

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Test Report

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260935
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291398
	NABL ULR No. :TC592622000017635F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near Loco Shed
Date of Monitoring	: 19-12-2022
Time of Monitoring	: 15:40 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.21
Volume of air sampled,m3	: 1820.17
Avg. Ambient Temperature,°C	: 23

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	8.25
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	11.52
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	85.71
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	40.40
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	35.20
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260935 Sample Reg. Date :26-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291398 NABL ULR No. :TC592622000017635F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	30.36
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
 Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report


Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260936
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291391
	NABL ULR No. :TC592622000017624F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near Storm Water Sump (AAQMS-3)
Date of Monitoring	: 19-12-2022
Time of Monitoring	: 16:50 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.21
Volume of air sampled,m3	: 1676.96
Avg. Ambient Temperature,°C	: 24

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	10.34
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	13.45
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	88.08
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	43.35
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	29.04
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

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Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260936
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291391
	NABL ULR No. :TC592622000017624F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	


g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	30.58
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260937
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291392
	NABL ULR No. :TC592622000017627F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near Switch Yard (AAQMS-4)
Date of Monitoring	: 19-12-2022
Time of Monitoring	: 16:20 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1690.81
Avg. Ambient Temperature,°C	: 24

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	8.19
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	11.36
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	87.12
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	35.35
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	31.10
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260937 Sample Reg. Date :26-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291392 NABL ULR No. :TC592622000017627F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	34.13
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
 Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260938
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291393
	NABL ULR No. :TC592622000017625F
	Customer Ref. No. :PO
	Letter Dated :2511.2022

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Village-Dabhali
Date of Monitoring	: 22-12-2022
Time of Monitoring	: 15:00 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1729.20
Avg. Ambient Temperature,°C	: 19

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	12.08
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	16.12
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	90.45
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	44.19
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	28.18
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260938 Sample Reg. Date :26-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291393 NABL ULR No. :TC592622000017625F Customer Ref. No. :PO Letter Dated :2511.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	31.25
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
 Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 29-12-2022
 Reviewer


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Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260940
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291396
	NABL ULR No. :TC592622000017630F
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Village-Dadumajra
Date of Monitoring	: 22-12-2022
Time of Monitoring	: 16:35 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1729.20
Avg. Ambient Temperature,°C	: 19

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	9.31
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	17.31
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	89.12
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	39.98
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	26.05
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260940 Sample Reg. Date :26-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291396 NABL ULR No. :TC592622000017630F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	29.35
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
 Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


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 29-12-2022
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Test Report


Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260939 Sample Reg. Date :26-12-2022 Report Date :29-12-2022 Report No. :ICE-2212291394 NABL ULR No. :TC592622000017628F Customer Ref. No. :PO Letter Dated :25.11.2022
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Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Village-Salempur
Date of Monitoring	: 22-12-2022
Time of Monitoring	: 15:50 hrs
Purpose of Monitoring	: To assess the Pollution level
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.21
Volume of air sampled,m3	: 1715.03
Avg. Ambient Temperature,°C	: 19

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	10.26
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	14.34
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	87.23
d.	Particulate matter (PM 2.5),µg/m ³	STP/ITC/EW/001	60 Max	42.09
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	27.17
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 29-12-2022
 Reviewer


 29-12-2022
 PremKumar
 [Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212260939
	Sample Reg. Date :26-12-2022
	Report Date :29-12-2022
	Report No. :ICE-2212291394
	NABL ULR No. :TC592622000017628F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	


g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.1)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	30.18
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirement as per NAAQS 2009.
Sampling Procedure: SOP/ITC/EW/056

REMARKS :*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


Saurabh Sharma
29-12-2022
Reviewer


29-12-2022
PremKumar
[Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180618 Sample Reg. Date :18-03-2023 Report Date :28-03-2023 Report No. :ICE-2303281470 NABL ULR No. :TC592623000003813F Customer Ref. No. :PO Letter Dated :25.11.2022
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Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near NDTC (AAGMS-1)
Date of Monitoring	: 13-03-2023
Time of Monitoring	: 11:25 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1688.50
Avg. Ambient Temperature,°C	: 24

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	10.37
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	18.43
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	76.58
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	39.98
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	30.54
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 28-03-2023
 Reviewer


 29-03-2023
 PremKumar
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180618 Sample Reg. Date :18-03-2023 Report Date :28-03-2023 Report No. :ICE-2303281470 NABL ULR No. :TC592623000003813F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	22.39
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)


*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 28-03-2023
 Reviewer


 29-03-2023
 PremKumar
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Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180624
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281472
	NABL ULR No. :TC592623000003806F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near Loco Shed (AAQMS-2)
Date of Monitoring	: 13-03-2023
Time of Monitoring	: 11:40 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1688.50
Avg. Ambient Temperature,°C	: 24

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	8.43
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	18.60
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	78.59
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	35.77
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	30.20
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 28-03-2023
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 29-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180624
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281472
	NABL ULR No. :TC592623000003806F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	26.57
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 28-03-2023
 Reviewer


 29-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180627
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281474
	NABL ULR No. :TC592623000003780F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near Storm Water Sump (AAQMS-3)
Date of Monitoring	: 13-03-2023
Time of Monitoring	: 12:20 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1688.50
Avg. Ambient Temperature,°C	: 24

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	6.12
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	14.50
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	74.27
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	34.93
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	30.20
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 28-03-2023
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 29-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180627 Sample Reg. Date :18-03-2023 Report Date :28-03-2023 Report No. :ICE-2303281474 NABL ULR No. :TC592623000003780F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	25.11
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 28-03-2023
 Reviewer


 29-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180620
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281471
	NABL ULR No. :TC592623000003822F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Near Switch yard
Date of Monitoring	: 13-03-2023
Time of Monitoring	: 12:45 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.22
Volume of air sampled,m3	: 1688.50
Avg. Ambient Temperature,°C	: 24

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	7.43
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	16.24
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	82.14
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	31.99
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	30.54
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 28-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180620 Sample Reg. Date :18-03-2023 Report Date :28-03-2023 Report No. :ICE-2303281471 NABL ULR No. :TC592623000003822F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	27.52
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

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NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


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 28-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180630
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281473
	NABL ULR No. :TC592623000003774F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Village- Dadumajru
Date of Monitoring	: 16-03-2023
Time of Monitoring	: 15:10 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.20
Volume of air sampled,m3	: 1638.74
Avg. Ambient Temperature,°C	: 28

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	8.17
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	17.48
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	83.42
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	46.30
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	28.39
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180630 Sample Reg. Date :18-03-2023 Report Date :28-03-2023 Report No. :ICE-2303281473 NABL ULR No. :TC592623000003774F Customer Ref. No. :PO Letter Dated :25.11.2022
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g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	22.10
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.2
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


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Document QF : 2501
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180633
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281476
	NABL ULR No. :TC592623000003779F
	Customer Ref. No. :PO
	Letter Dated :25.11.2022

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Village-Dabhali
Date of Monitoring	: 16-03-2023
Time of Monitoring	: 14:30 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.24
Volume of air sampled,m3	: 1693.37
Avg. Ambient Temperature,°C	: 28

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	9.18
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	18.62
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	81.26
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	38.72
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	34.33
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


Saurabh Sharma
28-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

Disclaimer :

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- Legal disputes are subjected to Panchkula Jurisdiction only.

Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180633 Sample Reg. Date :18-03-2023 Report Date :28-03-2023 Report No. :ICE-2303281476 NABL ULR No. :TC592623000003779F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	27.58
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.3
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


 Saurabh Sharma
 28-03-2023
 Reviewer


 29-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 1 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180631
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281475
	NABL ULR No. :TC592623000003782F
	Customer Ref. No. :PO
Letter Dated :25.11.2022	

Test Report as per :	: NAAQS 2009
Sampling Information :	
Location of Sampling Point	: Village- Salempur
Date of Monitoring	: 16-03-2023
Time of Monitoring	: 16:25 hrs
Purpose of Monitoring	: For Self Monitoring
Duration of Monitoring,minutes	: 1440
Avg. Flow Rate of Sampling,m3/min	: 1.21
Volume of air sampled,m3	: 1669.04
Avg. Ambient Temperature,°C	: 25

Description				
Description		Ambient Air Quality Monitoring		
S.No.	Parameters	Method	Specification	Result
1.	Ambient Air Quality Parameters(Time weighted Avg- 24 Hours)			
a.	Sulphur Dioxide(SO ₂),µg/m ³	IS: 5182 (P-2): 2017	80 Max	9.46
b.	Nitrogen Dioxide(NO ₂),µg/m ³	IS: 5182 (P-6): 2017	80 Max	13.59
c.	Particulate Matter (PM ₁₀),µg/m ³	IS: 5182 (P-23): 2017	100 Max	80.41
d.	Particulate matter (PM 2.5),µg/m ³	IS: 5182 (P-24)-2019	60 Max	39.14
e.	Ammonia(NH ₃),µg/m ³	IS: 5182 (P-25): 2018	400 Max	29.38
f.	Lead(As Pb),µg/m ³	STP/ITC/EW/002	1.0 Max	BLQ(LOQ:0.1)


 Saurabh Sharma
 28-03-2023
 Reviewer


 29-03-2023
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303180631
	Sample Reg. Date :18-03-2023
	Report Date :28-03-2023
	Report No. :ICE-2303281475
	NABL ULR No. :TC592623000003782F
Customer Ref. No. :PO	
Letter Dated :25.11.2022	


g.	Mercury(as Hg), µg/m ³	STP/ITC/EW/002	Not Specified	BLQ(LOQ:0.01)
2.	Ambient Air Quality Parameters(Time weighted Avg- 8 Hours)			
a.	Ozone(O ₃),µg/m ³	IS: 5182 (P-9): 2019	100 Max.	24.58
b.	Carbon Monoxide(CO),mg/m ³	IS: 5182 (P-10): 2019	2 Max.	1.4
3.	Ambient Air Quality Parameters(Time weighted Avg- Annual*)			
a.	Benzene(C ₆ H ₆),µg/m ³	IS: 5182 (P-11): 2017	5 Max	BLQ(LOQ:1.0)
b.	Benzo(a) Pyrene Particulate Phase only,ng/m ³	IS: 5182 (P-12): 2019	1 Max	BLQ(LOQ:0.5)
c.	Arsenic(as As),ng/m ³	STP/ITC/EW/002	6 Max.	BLQ(LOQ:1.0)
d.	Nickel(As Ni),ng/m ³	STP/ITC/EW/002	20 Max.	BLQ(LOQ:1.0)

*# represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Requirements as per NAAQS 2009, Sampling Procedure - SOP/ITC/EW/056,

REMARKS : *Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

*****End Of Report*****


Saurabh Sharma
28-03-2023
Reviewer


29-03-2023
PremKumar
[Authorized Signatory]

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Annexure-11
Expenses Incurred for
Environment Protection
Measures in FY 22-23

Details of Expenses Incurred for Environment Protection Measures FY 2022-23 (Annual)		
S.No.	Particulars	Amount (Rs)
A	Air Pollution	
1	Cost of Energy Consumption in ESPs/Bag Filters	99545783
2	Cost of Maintenance of Ash Silos	200000
3	Cost of operation of Dust Suppression and Extraction System	522057
4	Cost of electrical spares & consumables for ESP maintenance	1532482
5	Cost of electrical services for ESP	2713803
6	AMC Services for ESP for FY 22-23	2943353
7	Unit #1 Annual Overhauling Services	1473949
8	Unit#2 Capital Overhauling Services	1123124
7	ESP Spares & Consumables	627000
	Water Pollution	
8	Cost of Energy Consumption in STP	87001
9	Cost of Energy Consumption in ETP	6915626
10	Cost of Chemical used at ETP and STP	9835000
	Environment Monitoring Expenses	
11	Cost of Manpower	1174100
12	Cost of Consumables	104913
13	Cost of Environment Spares	12980
14	Cost of running of Environment monitoring vehicle	818495
15	AMC/Calibration for environment monitoring equipments.	48616
16	AMC/Calibration/ maintenance of online environment monitoring equipments.	2722000
	Third Party MoEF&CC approved laboratory testing charges.	
17	Third Party MoEF&CC approved laboratory testing charges for AAQ,Stack,Waste Water,Fly Ash, Bottom Ash etc.	351758
	Infrastructure Development	
18	Construction of Roads	3950000
19	Provision of Wind shields at CHP	1682150
20	Provision of Wind shields at Silos	67200
	Green Belt Development & Maintenance	
21	Development and Maintenance of Green Plants	7201735
22	Maintenance of Landscape Area	3086457
	Solar Harnessing Expenses	
23	Solar Harnessing and maintenance Expenses	488500
	Salary & Wages of HSE Professionals	
24	Salary & Wages of HSE Professionals	4179773
	Ash Dyke Management	
25	Expenses for Ash Dyke Maintenance(Civil)	2,25,600.00
26	Expenses for Ash Dyke Maintenance(Mechanical)	250000
	Energy Consumption for transportation of Bottom Ash.	
27	Energy Consumption for transportation of Bottom Ash & Fly Ash	91663418
	Training, Subscription & Legal Updates and Promotional Activities	
28	Subscription & Legal Updates	17700
29	World Environment Day Celebration	5753
	Disposal of Hazardous Waste	
30	Disposal of Hazardous Waste charges	168932
31	Bio-Medical Waste disposal charges	16457
	Housekeeping Expenses	
32	Housekeeping Expenses	1,06,00,000.00
	Total in Rupees(₹)	256130115

Annexure-12

**The Photograph of Main Gate
Display.**



NABHA POWER LIMITED



2 X 700 MW RAJPURA SUPER THERMAL POWER STATION

ENVIRONMENTAL DATA DISPLAY

	UNIT-1	UNIT-2	UOM
OPACITY	41.3	42.0	mg/NM3
SO2	885.9	1265.8	mg/NM3
NOX	221.9	197.5	mg/NM3



Annexure-13

Solar Harness Report.



Solar Energy Report for the Period
From
Oct-2022 to March-2023

Sr. No	Month	Numbers of Unit Generated (KWh)
1	Oct-22	20191.0
2	Nov-22	13311.0
3	Dec-22	9336.0
4	Jan-23	9226.0
5	Feb-23	13269.6
6	Mar-23	16572.1
Total generation in KWh		81905.7

Annexure-14

Test Report of Heavy Metal Analysis in Coal.

Test Report

Document QF : 2501
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200011
	Sample Reg. Date :20-03-2023
	Report Date :28-03-2023
	Report No. :ICB-2303280006
	Customer Ref. No.: PO
Letter Dated :25.11.2022	

Test Report as per IS :Party Specification	With Amendment No.(s):
---	-------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Coal Sample
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	
d)	Brand Name	NA
e)	Declared Values,if any	
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	150gm
k)	Batch Size#	NA
l)	Mode of Packing	Packed in poly pack
m)	Date of Receipt	20-03-2023
n)	Date of Start	21-03-2023
o)	Date of Completion	23-03-2023
p)	BIS Seal (Intact/Not Intact/Unsealed)	
q)	IO'S Signature (Signed/Unsigned)	
r)	Any Other Information	Sample collected by Lab rep. on 15.03.2023
s)	Test Request Submitted By	Nabha Power Limited - Rajpura (Punjab)
t)	Manufactured By#	Nabha Power Limited

Brijesh Singh
28-03-2023
Reviewer

28-03-2023
Kamal Grover
[Authorized Signatory]

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Test Report

Document QF : 2501
Page 2 of 2

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura (Punjab)	Sample Reg. No. :B01-2303200011 Sample Reg. Date :20-03-2023 Report Date :28-03-2023 Report No. :ICB-2303280006 Customer Ref. No.: PO Letter Dated :25.11.2022
--	---

u)	Supplied By#	Nabha Power Limited
----	--------------	---------------------

PART B : SUPPLIMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description					
Description		Black Color powder			
S.No.	Parameter	Instrument	Method	Specification	Result
Discipline : Chemical					
Group : Chemicals Solid Fuels					
1.	Heavy Metals				
a.	Lead(as Pb)(mg/kg)	ICPOES	STP/ITC/F/INST/008		14.23
b.	Mercury(as Hg)(mg/kg)	ICPOES	STP/ITC/F/INST/008		BLQ(LOQ:1.0)
c.	Arsenic(as As)(mg/kg)	ICPOES	STP/ITC/F/INST/008		1.16
d.	Chromium(as Cr)(mg/kg)	ICPOES	STP/ITC/F/INST/008		13.83

represents Customer Defined Fields

NOTE :

REMARKS :Party has asked for the above tests only.

*****End Of Report*****

Brijesh Singh
28-03-2023
Reviewer

28-03-2023
Kamal Grover
[Authorized Signatory]

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Annexure-15

Test Report of Radioactivity in Coal, Fly Ash & Bottom Ash.



Sophisticated Analytical Instruments Laboratories Society (Registered as Society with Registrar of Firms & Societies, Punjab, Chandigarh)
Thapar Technology Campus, Bhadson Road, Patiala-147 004 (India)

TEST REPORT

Test Report No.:	NN(D)/22-23/800	Date:	23.03.2023
Service No.	NN(D)/22-23/800(01)	Customer's Ref.	Sample Collected by Mr. Amit Kumar on dtd 21.02.2023
Customer's name and address:			
M/s Nabha Power Limited Post Box 28, Near village Nalash Rajpura, Distt. Patiala 140401, Punjab Kind attn.: Mr. Hemant Purushottom Nimkar			
Sample Description	Fly Ash		
Condition of the sample received	O.K.		
Customer's sample identification No. (if any)	01- Fly Ash		
Quantity/number of samples	2 Kg / 1		
Sampling Procedure (if any)	--		
Test parameters	Alpha emitters, Beta emitters, Gamma emitters		
Standard/Specification/Method followed	As mentioned below		
Deviations (if any)	--		
Documents constituting this report (if any)	--		
Date of Receipt of Job	Date of Completion of Job	Total Number of Pages	
21.02.2023	23.03.2023	3	

TEST RESULTS

S. No.	Parameters	Test Method	Unit	Results (01)
1	Alpha emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with Alpha Scintillation detector	Bq/Kg	Not detected
2	Beta emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with GM detector Probe	Bq/Kg	Not detected
3	Gamma emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with GM detector Probe	Bq/Kg	Not detected

Page 1 of 3


M. Agarwal
Technical Manager
(Authorized Signatory)

- Note:
1. The results listed refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied
 2. Samples will be destroyed after one month (except water, wastewater) from the date of issue of the test report unless otherwise specified
 3. This report is not to be reproduced wholly or in part and cannot be used as an evidence in the products is neither inferred nor implied. court of law and should not be used in any advertising media without special permission in writing.
 4. In case any reconfirmation of contents of the test report is required, please contact the authorized signatory of the test report within 15 days of the issue of test report.

Phone: +91(175) 2393552 Fax : +91(175) 2393548 Email: office_sailabs@thapar.edu, info@sailabs.org
URL: www.sailabs.org

SAI/FM/CSC-11



Sophisticated Analytical Instruments Laboratories Society (Registered as Society with Registrar of Firms & Societies, Punjab, Chandigarh)
Thapar Technology Campus, Bhadson Road, Patiala-147 004 (India)

TEST REPORT

Test Report No.:	NN(D)/22-23/800	Date:	23.03.2023
Service No.	NN(D)/22-23/800(02)	Customer's Ref.	Sample Collected by Mr. Amit Kumar on dtd 21.02.2023
Customer's name and address:			
M/s Nabha Power Limited Post Box 28, Near village Nalash Rajpura, Distt. Patiala 140401, Punjab Kind attn.: Mr. Hemant Purushottom Nimkar			
Sample Description	Bottom Ash		
Condition of the sample received	O.K.		
Customer's sample identification No. (if any)	02- Bottom Ash		
Quantity/number of samples	2 Kg / 1		
Sampling Procedure (if any)	--		
Test parameters	Alpha emitters, Beta emitters, Gamma emitters		
Standard/Specification/Method followed	As mentioned below		
Deviations (if any)	--		
Documents constituting this report (if any)	--		
Date of Receipt of Job	Date of Completion of Job	Total Number of Pages	
21.02.2023	23.03.2023	3	

TEST RESULTS

S. No.	Parameters	Test Method	Unit	Results (02)
1	Alpha emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with Alpha Scintillation detector	Bq/Kg	Not detected
2	Beta emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with GM detector Probe	Bq/Kg	Not detected
3	Gamma emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with GM detector Probe	Bq/Kg	Not detected

Page 2 of 3


M. Agarwal

**Technical Manager
(Authorized Signatory)**

- Note:
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Sophisticated Analytical Instruments Laboratories Society (Registered as Society with Registrar of Firms & Societies, Punjab, Chandigarh)
Thapar Technology Campus, Bhadson Road, Patiala-147 004 (India)

TEST REPORT

Test Report No.:	NN(D)/22-23/800	Date:	23.03.2023
Service No.	NN(D)/22-23/800(03)	Customer's Ref.	Sample Collected by Mr. Amit Kumar on dtd 21.02.2023
Customer's name and address:			
M/s Nabha Power Limited Post Box 28, Near village Nalash Rajpura, Distt. Patiala 140401, Punjab Kind attn.: Mr. Hemant Purushottom Nimkar			
Sample Description	Coal		
Condition of the sample received	O.K.		
Customer's sample identification No. (if any)	03- Coal		
Quantity/number of samples	2 Kg / 1		
Sampling Procedure (if any)	--		
Test parameters	Alpha emitters, Beta emitters, Gamma emitters		
Standard/Specification/Method followed	As mentioned below		
Deviations (if any)	--		
Documents constituting this report (if any)	--		
Date of Receipt of Job	Date of Completion of Job	Total Number of Pages	
21.02.2023	23.03.2023	3	

TEST RESULTS

S. No.	Parameters	Test Method	Unit	Results (03)
1	Alpha emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with Alpha Scintillation detector	Bq/Kg	Not detected
2	Beta emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with GM detector Probe	Bq/Kg	Not detected
3	Gamma emitters	EPA-600/4-78-039 July 1978 Followed by Radiation Counting System Rc605 A with GM detector Probe	Bq/Kg	Not detected

Page 3 of 3

.....End of the report.....


M. Agarwal
Technical Manager
(Authorized Signatory)

- Note:
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 2. Samples will be destroyed after one month (except water, wastewater) from the date of issue of the test report unless otherwise specified
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Phone: +91(175) 2393552 Fax : +91(175) 2393548 Email: office.sailabs@thapar.edu, info@sailabs.org
URL: www.sailabs.org

SAI/FM/CSC-11

Annexure-16

Test Report of Surface Water Quality.

Test Report


Document QF : 2501


Page 1 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230857 Sample Reg. Date :23-12-2022 Report Date :27-12-2022 Report No. :ICE-2212271301 NABL ULR No. :TC592622000017593F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--

Test Report as per IS: BIS Specification IS:10500-2012	With Amendment No.(s): 01 to 04
---	--

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Water Sample (Marked Surface Water)
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	23-12-2022
n)	Date of Start	24-12-2022
o)	Date of Completion	26-12-2022
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample collected by lab rep. Mr. Ashutosh on 22.12.2022


 Saurabh Sharma
 27-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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Test Report

Document QF : 2501

Page 2 of 3

Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2212230857 Sample Reg. Date :23-12-2022 Report Date :27-12-2022 Report No. :ICE-2212271301 NABL ULR No. :TC592622000017593F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--


s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA


PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Courless Liquid				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
	Discipline : Chemical				
	Group : Water				
1.	Organoleptic &Physical Parameter				
a.	Colour (True Colour)	IS 3025 (Part 4) : 2021	5 Max.	15 Max.	2
b.	Odour	IS: 3025 (P-5)-2018	Agreeable	-	Agreeable
c.	Turbidity (NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	0.7
d.	pH Value	IS: 3025 (Part-11): 2022	6.5-8.5	No relaxation	8.24
e.	Total Dissolved Solids,(mg/L)	IS: 3025 (P-16)-1984 (RA 2017)	500 Max.	2000 Max.	360


 Saurabh Sharma
 27-12-2022
 Reviewer


 28-12-2022
 PremKumar
 [Authorized Signatory]

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---	--


2.	Parameters Concerning Undesirable Substances in excess amount				
a.	Chloride(as Cl)(mg/L)	IS: 3025 (P-32)-1988 (RA2019)	250 Max.	1000 Max.	17.2
b.	Fluoride as F(mg/L)	IS: 3025 (P-60)-2008 (RA 2019)	1.0 Max.	1.5 Max.	BLQ(LOQ:0.1)
c.	Free Residual Chlorine, (mg/L)	IS: 3025 (P-26): 2021	0.2 Min.	1.0 Max.	Not Applicable
d.	Iron (as Fe)(mg/L)	IS: 3025 (P-53)-2003 (RA 2019)	1.0 Max.	No relaxation	BLQ(LOQ:0.08)
e.	Nitrate as NO ₃ (mg/L)	APHA 23rd Edition 2017, 4500 NO3	45 Max.	No Relaxation	BLQ(LOQ:1.0)
f.	Sulphate(as SO ₄)(mg/L)	IS: 3025 (P-24/Sec-1)-2022	200 Max.	400 Max.	86.6
g.	Total Alkalinity(as CaCO ₃)(mg/L)	IS: 3025 (Part 23)-1986 (RA 2019)	200 Max.	600 Max.	302
h.	Total Hardness(as CaCO ₃)(mg/L)	IS: 3025 (Part 21)-2009 (RA 2019)	200 Max.	600 Max.	100

#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure - SOP/ITC/EW/030

REMARKS :The above referred sample of Water Sample (Marked Surface Water) conforms to BIS Specification IS:10500-2012 with upto date amtds with respect to the above tests.

*****End Of Report*****


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 27-12-2022
 Reviewer


 28-12-2022
 PremKumar
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140443 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221192 NABL ULR No. :TC592623000003434F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

Test Report as per IS:BIS Specification IS:10500-2012	With Amendment No.(s):01 TO 04
---	--------------------------------

PART A : PARTICULARS OF SAMPLE SUBMITTED

a)	Nature of Sample#	Water Sample (Marked Surface Water)
b)	Sample Condition	Good
c)	Grade / Variety / Type / Class / Size etc.	NA
d)	Brand Name	NA
e)	Declared Values,if any	NA
f)	Code No.	
g)	Batch Number#	NA
h)	D.O.M#	NA
i)	Date of Expiry#	NA
j)	Sample Quantity#	2 Ltr
k)	Batch Size/Location#	NA
l)	Mode of Packing	Packed in can
m)	Date of Receipt	14-03-2023
n)	Date of Start	14-03-2023
o)	Date of Completion	18-03-2023
p)	Seal (Intact/Not Intact/Unsealed)	NA
q)	IO'S Signature (Signed/Unsigned)	Unsigned
r)	Any Other Information	Sample Collected by lab rep. Mr. Ramgopal: 13.03.2023


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
 [Authorized Signatory]

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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140443 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221192 NABL ULR No. :TC592623000003434F Customer Ref. No. :PO Letter Dated :25.11.2022
---	--

s)	Test Request Submitted By	Nabha Power Limited-Rajpura (Punjab)
t)	Manufactured By#	NA
u)	Supplied By#	NA

PART B : SUPPLEMENTARY INFORMATIONS

a.	Reference to sampling procedure, whenever applicable	: N/A
b.	Supporting documents for the measurement taken and results derived like graphs, tables, sketches and / or photographs as appropriate to test reports, if any	: N/A
c.	Deviation from the test methods as prescribed in relevant ISS/WORK Instruments, if any	: N/A

Description

Description	Clear Colorless liquid				
S.No.	Parameters	Method	Acceptable Limit	Permissible Limit	Result
Discipline : Chemical					
Group : Water					
1. Organoleptic & Physical Parameter					
a.	Colour (True Colour)	IS 3025 (Part 4) : 2021	5 Max.	15 Max.	2
b.	Odour	IS: 3025 (P-5)-2018	Agreeable	-	Agreeable
c.	Turbidity (NTU)	IS:3025(Part 10):1984(RA:2017)	1 Max.	5 Max.	0.81
d.	pH Value	IS: 3025 (Part-11): 2022	6.5-8.5	No relaxation	8.31
e.	Total Dissolved Solids,(mg/L)	IS: 3025 (P-16)-1984 (RA 2017)	500 Max.	2000 Max.	250


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
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Issued To Nabha Power Limited Near Village: Nalash, P.B. No.28, Rajpura, Distt. Patiala Rajpura	Sample Reg. No. :E01-2303140443 Sample Reg. Date :14-03-2023 Report Date :22-03-2023 Report No. :ICE-2303221192 NABL ULR No. :TC592623000003434F Customer Ref. No.: PO Letter Dated :25.11.2022
---	--


2.	Parameters Concerning Undesirable Substances in excess amount				
a.	Chloride(as Cl)(mg/L)	IS: 3025 (P-32)-1988 (RA2019)	250 Max.	1000 Max.	18
b.	Fluoride as F(mg/L)	IS: 3025 (P-60)-2008 (RA 2019)	1.0 Max.	1.5 Max.	0.2
c.	Free Residual Chlorine, (mg/L)	IS: 3025 (P-26): 2021	0.2 Min.	1.0 Max.	Not Applicable
d.	Iron (as Fe)(mg/L)	IS: 3025 (P-53)-2003 (RA 2019)	1.0 Max.	No relaxation	BLQ(LOQ:0.08)
e.	Nitrate as NO ₃ (mg/L)	APHA 23rd Edition 2017, 4500 NO3	45 Max.	No Relaxation	10
f.	Sulphate(as SO ₄)(mg/L)	IS: 3025 (P-24/Sec-1)-2022	200 Max.	400 Max.	34
g.	Total Alkalinity(as CaCO ₃)(mg/L)	IS: 3025 (Part 23)-1986 (RA 2019)	200 Max.	600 Max.	220
h.	Total Hardness(as CaCO ₃)(mg/L)	IS: 3025 (Part 21)-2009 (RA 2019)	200 Max.	600 Max.	113

#' represents Customer Defined Fields

NOTE : NA- Not Applicable, BLQ- Below limit of Quantification, LOQ- Limit of Quantification, Sampling Procedure: SOP/ITC/EW/030,

REMARKS :N/A

*****End Of Report*****


 Saurabh Sharma
 22-03-2023
 Reviewer


 22-03-2023
 PremKumar
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Annexure-17
Epidemiology Study Report

Epidemiological Study Around Rajpura Power Project

**Nabha Power Limited Village: Nalash,
Tehsil: Rajpura, District: Patiala**



Report Prepared by

EMTRC Consultants Private Limited

Tower 5, Flat 102, CWG Village, Delhi 110092

Website- www.emtrc.in, email- emtrcijkm@gmail.com

JANUARY 2023

31-01-2023

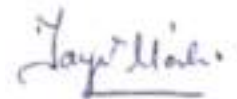
CERTIFICATE

Nabha Power Limited commissioned Epidemiological Study around its 2 x 700 MW Power Limited located at Village Nalash, Tehsil Rajpura, District Patiala.

The primary objective of the Epidemiological Study is to evaluate the nature of environmental pollutants, quantify and assess their effects on human health, generate health data of by collecting representative samples of population residing in the area and suggest corrective measures to improve health status of population under study area.

Five locations were selected for the study; upwind direction which is unaffected by the power plant, downwind location and locations having maximum ground level concentrations with severe impact. Samples of groundwater, surface water, soil, cereals and vegetables were collected from the study area and analysed at EMTRC Lab. Ambient air quality data of the study area was obtained from NPL. Human health survey was done in December 2022 by organizing camps at 5 locations around the power project.

We wish to place on record our sincere gratitude and thanks to the Dr Ashish Garg (MBBS, MD-Medicine) other and Interns of Neelam Hospital, Rajpura and Mr. Nitin Pandey (CSR Department-NPL) for organizing the medical camps and doing the health check-ups of resident population as per the standard protocol. We are also grateful to Mr. Rajiv Bhandari, (AGM - EHS) and Mr. Hemant Purushottam Nimkar (Sr. Manager - EHS) for all cooperation received during the study period. Special thanks are to Mr Suresh Kumar Narang, CEO for his constant oversight and encouragement during the course of this study.



Dr. JK MOITRA
Project Coordinator

ABBREVIATION

ACGIH - American Conference of Governmental Industrial Hygienists
CPCB - Central Pollution Control Board
COPC - Chemical of Potential Concern
COPD - Chronic Obstructive Pulmonary Disorder
CADD - Chronic Average Daily Dose (mg/kg-day)
HSDB - Hazardous Substances Data Bank
HQ - Hazard Quotient
HI - Hazard Index
IRIS - Integrated Risk Information System of USEPA
LOAEL - Lowest Observable Adverse Effect Level
LADD - Lifetime Average Daily Dose (mg/kg-day)
mg/l - Milligram per liter
 $\mu\text{g}/\text{m}^3$ - Milligram per Cubic Meter (of air)
 μg - Microgram (one-millionth of a gram)
MOEF - Ministry of Environment & Forests (Govt of India)
NOAEL - No Observable Adverse Effect Level
NIOSH - National Institute for Occupational Safety and Health
PM_{2.5} - Particulate Matter up to 2.5 micrometer size
PM₁₀ - Particulate Matter up to 10 micrometer size
ppb - Parts per Billion
ppm - Parts per Million
RME - Reasonable Maximum Exposure (Upper Percentile)
RfD - Reference Dose
STEL - Short Term Exposure Limit
TWA - Time Weighted Average
UNEP - United Nations Environment Program
USEPA - United States Environmental Protection Agency
WHO - World Health Organization

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EXECUTIVE SUMMARY

Nabha Power Limited operates the 2x700 MW coal based thermal power plant at village Nalash near Rajpura town in Punjab. It is the first power plant to be owned and operated by Larsen & Toubro Limited. The power generated from this plant is contracted with Punjab State Power Corporation Limited for a period of 25 years under a Power Purchase Agreement (PPA). The plant is built on supercritical technology of Mitsubishi Heavy Industries, Japan (now Mitsubishi Hitachi Power Systems).

The plant sources its fuel from South Eastern Coalfields Limited (a subsidiary of Coal India Limited) under a 20-year Fuel Supply Agreement (FSA). Bhakra-Nangal distributary is the perennial source of water for the plant under an allocation by the state irrigation department. The plant is operated by an in-house experienced team of operations and maintenance professionals.

Commercial operation dates (COD) for Unit-1 and Unit-2 were February 1 and July 10, 2014, respectively.

Nabha Power Limited, being a proactive and environmentally responsible organization, decided to generate the existing health status of human population vis-à-vis baseline environmental conditions around the power plant. It initiated Epidemiological Study by awarding the work to EMTRC Consultants Private Limited, Delhi.

The study includes the following objectives:

- To quantify environmental pollutant and its effects on human health.
- To generate health data of population in and around the plant through Epidemiological study on representative number of population.
- To analyse the health effects of individual pollutants.
- To suggest corrective measures to improve health status of population under study area.

Coal fired Thermal Power Plants emits several air pollutants that are originally present in coal. Pollutants like particulate matter containing metals, oxides of sulphur, oxides of nitrogen, carbon monoxide, and organic compounds are generated during coal burning. These air pollutants are

reported to cause a wide range of adverse health effects. Environmental impacts of power plant air pollutants emissions include adverse health, acidification of the environment, bioaccumulation of toxic metals, and contamination of water bodies and reduced visibility due to haze.

Coal is pulverized in coal mills to size less than 200 microns. The pulverized coal is fed to steam generator (Boiler) for combustion and generation of steam. The steam so generated is fed in to turbine, which converts the thermal energy of steam into mechanical energy and drives the generator for producing electricity. Exhaust steam from the turbine is condensed by means of a condenser. Thus the water evaporated in the boiler is conserved in a closed cycle. The products of combustion are exhausted from the boiler through a chimney into the atmosphere after cleaning through ESP. The ash from the boiler furnace bottom is disposed of by means of wet disposal system. The fly ash arrested in the Electrostatic Precipitators is transported pneumatically to fly ash silos. The fly ash is utilized for brick manufacturing; mines back filling, low land filling, etc. Unutilized portion of the fly ash is disposed of in slurry form in ash dyke.

Wind Profiles: Dispersion profile of air pollutants being emitted from a chimney depends upon the wind direction and wind speed. Historical met data of the area was collected from Climatological Tables published by the India Meteorological Department (1980-2010). The predominant wind direction is from North-West during all the months except monsoon season. During monsoon season the wind flows from South East. The wind direction was used to find out the predominant wind direction, most dominant and least dominant wind directions. Accordingly camps for health study was established.

Impacted and Unimpacted Areas around the Power Plant: Name of impacted and non-impacted villages around NPL are shown below:

S.N	Name of Villages	Distance & Direction from NPL	Impacted/ Non-impacted
1	Suralkalan	1.7 Km, West	Slightly Impacted
2	Dabhalikalan	3.8 Km, South	Moderately Impacted
3	Dadumajra	3.5 Km, North	Slightly impacted
4	Nalash	2.0 Km, South East	Severely Impacted
5	Bakshiwala	4.5 Km, South West	Non-Impacted

Sampling Locations: Ambient air quality data around the power plant was generated by NPL over the last few years. These data were used to analyse and assess the impact. Samples of groundwater and soil was collected from surrounding villages. Surface water sample was taken from the Bhakra distributary / canal and analysed. This canal water is used for irrigation by the farmers of the area. Samples of locally grown cereals and vegetables, milk and grass were collected from the area and analysed for heavy metals. The sampling locations represented the impacted area and non-impacted area around the power plant. Samples were collected in October 2022.

Ambient Air Quality: Ambient air quality monitoring was done inside & outside the plant boundary at seven locations. Monitoring was done round the year for 24-hours, one sample season. Following pollutants were monitored: PM_{2.5}, PM₁₀, NO₂, SO₂, CO, Pb, As, Ni (in PM₁₀), NH₃, O₃, benzene, Benzo-a-pyrene. Results for the year 2019 to 2022 were provided by Nabha Power Limited. The results of all parameters are well within the NAAQS.

Sr. No	Date		Parameters (24-hour average)				
			PM ₁₀ , µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
1	2019	Minimum	68	38	8	17	0.58
		Maximum	82	47	17	33	0.95
		Average	74	42	13	26	0.71
2	2020	Minimum	61	30	6	9	0.55
		Maximum	96	54	15	31	1.4
		Average	77	42	11	22	0.85
3	2021	Minimum	68	31	6	10	1
		Maximum	97	57	16	33	3.6
		Average	86	43	10	17	1.65
4	2022	Minimum	80	35	5	10	1.1
		Maximum	90	43	12	22	1.4
		Average	84	39	8	14	1.26
National Standard			100	60	80	80	2

Note : Pb, As, Ni, NH₃, O₃, benzene, Benzo-a-pyrene were found to be not detectable.

The results are graphically shown below:

Ground Water Quality: Ground water is the main source of drinking and irrigation. Nine ground water samples were collected from villages located around the plant. The water samples were analysed for physicochemical and biological parameters as per the Standard Methods (APHA). The results were compared with the drinking water quality standard prescribed by the Bureau of Indian Standards (IS: 10500:2012). The pH of the samples was found to be alkaline (7.41 - 8.18). TDS values of the sample ranges between 150 - 1380 mg/l. Hardness content of the sample ranges between 52 - 440 mg/l. Calcium values of the samples ranges between 16 - 120 mg/l. Magnesium values of the samples ranges between 2.9 - 34 mg/l. Chloride values of the samples ranges between 35 - 280 mg/l. The ground water did not show any oil or bacterial contamination. Heavy metals like Pb, Cu, Mn, Cr, Ni, Cd, Hg, As, and Se were found to be below the detectable limit.

Surface Water Quality: One canal water sample was collected. The sample was analyzed for physico-chemical and biological parameters as per Standard Methods (APHA). Hg, As, Pb and Cr were found to be below the detectable limit. The water quality is fit for drinking after conventional treatment and irrigation.

Soil Quality: Nine soil samples were collected from agriculture fields around the plant. The samples were analysed for metallic constituents. The results are as follows: Lead <0.3 mg/kg, Nickel 6.2 to 8.5 mg/kg, Cadmium <0.1 mg/kg, Chromium <0.2 mg/kg, Arsenic < 0.2 mg/kg and Mercury <0.1 mg/kg. Soils are of mineral origin and metals are always present in traces, which acts as micronutrients for plant growth and health. The values were found to be normal.

Heavy Metals in Food Samples: Rice, dal, wheat and maize and locally grown vegetables are the staple food of the people of this area. Samples of locally grown rice, dal, wheat, jowar, gram, pulses, potato, onion, tomato were collected from the market. No heavy metals (arsenic, mercury, cadmium, chromium, lead and nickel) were not detectable in the food samples (Below the detectable limit of 0.1 mg/kg).

Human Health Survey: In order to develop health records and draw profile of health status for target population groups, health survey was done at 5 locations around the plant. These villages covered the impacted area, non-impact area and control area. Health check-up was done for 309 residents, who are exposed to the existing environmental conditions for more than 5 years.

Summary of Health Checkup Done at 5 Locations Around NPL (in %)

	Name of Location	Over Weight	Cough	High BP	Headache	Other Noted Health Problems
1	Surkalan Slightly impacted	28	13	35	19	Knee joint pain in elderly
2	Dabhali kalan Moderately impacted	29	10	58	23	-
3	Dadumajra Slightly impacted	16	2	28	10	Knee joint pain in elderly
4	Nalash Severely impacted	20	6	61	14	-
5	Bakshiwala Non-Impacted -Control)	23	7	57	26	-

Conclusion

- a. Air Environment: The ambient air quality of the impacted and non-impacted areas is found to be well-within the prescribed National Standards.
- b. Water Environment: The ground water samples were found to meet the BIS standards at all locations. The surface water sample were found to meet the Best Designated Use Criteria 'C' of CPCB (fit for drinking after conventional treatment and irrigation).
- c. Soil Environment: Lead, nickel, arsenic, mercury, cobalt, cadmium, chromium levels were found to be within the normal level. pH was found to be moderately alkaline, Organic Matter was found to be sufficient and Conductivity was found to be average in all soil samples.
- d. Impact on Human Health: Human Health Survey: Human health profiling was done for 309 resident people of five villages, who are exposed to the existing environment for more than seven years. High BP was found in majority of male adults; Nalash - 61%, Dhabali - 58% Bakshiwala - 57% and Surkalan - 35%. Major complaints of elderly people in Surkalan and Dadumajra were related to pain in knee joints.

No cases of respiratory disorders linked to air pollution like Bronchitis, Asthma or Chronic Obstructive Pulmonary Disorder were found in the people. No disease or any chronic condition that could be related to air pollution / effluent discharges from coal based power plant has been observed in the population of the study area. None of the people in the study area reported any serious health problem such as Cancer, Gross Neurologic, Hepatic or Renal Damage and Congenital Abnormality.

CHAPTER 1: INTRODUCTION

1.1 Introduction of Epidemiological Study

Epidemiological study describes the nature and significance of the potential short-term (i.e., acute) and long-term (i.e., chronic) health risks posed to people exposed to the Chemicals of Potential Concern (COPC). The primary objective of the EPIDEMIOLOGICAL is to describe the nature and significance of potential health risks to humans from COPC. EPIDEMIOLOGICAL Methodology developed by United States Environmental Protection Agency (USEPA) is widely followed all over the world. The main components of the risk assessment methodology include the following:

Problem Formulation: Identification of Chemicals of Potential Concern (COPC), characterization of receptors, and identification of exposure pathways. The COPC identified in ambient air around coal fired power plant are BAP, Pb, Ni and As in PM₁₀. Profile of the COPCs are given in Appendix.

Toxicity Assessment: Identification of potential adverse effects of COPC and determination of the maximum **dose** that are likely to result in adverse health effects (exposure limits, EL);

Exposure Assessment: Quantification of the total dose of COPC received by human receptors *via* all relevant exposure pathways;

Risk Characterization: Comparison of estimated exposures with Exposure Limits to provide an indication of whether unacceptable risks are likely to exist in defined scenarios.

Exposure pathways describe the routes through which contaminants in the environment (soil, air water etc.) come into contact with receptors of concern. These pathways may require direct contact between receptors and media of concern (e.g., inhalation of air), or may rely on indirect pathways which require movement of the chemical in the environment (e.g., transfer of chemicals from soil into vegetables or meat and then to receptors through food consumption). Although human behavioral and physical characteristics will vary, it was assumed that all human receptors are subjected to the same exposure pathways. COPC present in air emissions can descend to ground level where human receptors can be exposed *via* the direct inhalation

exposure pathway. COPC in air emissions may be transported to other media where exposure may occur. Possible “indirect” exposure pathways include ‘ingestion’ of COPC in soil dust, and consumption of agricultural products, meat, fish, etc. Environmental media that are potentially affected by discharges from power plant includes:

- Ambient air through direct emission and dispersion as vapor or suspended particulate;
- Surface soils, through deposition from the air column;
- Fish through the aquatic food chain;
- Vegetation, including home garden produce, crops, as well as natural vegetation, both through direct deposition, and indirectly *via* uptake from soil;
- Agricultural products through uptake from soils, vegetation and water;
- Drinking groundwater

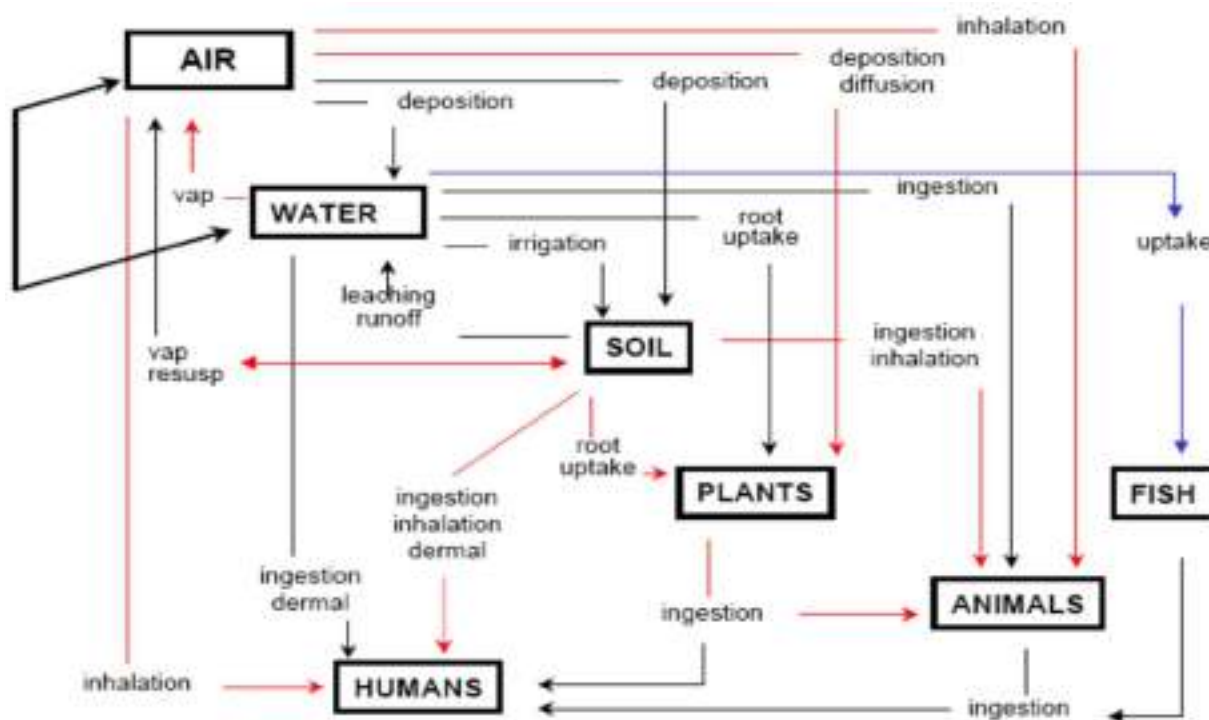


Figure 1: Typical Human Exposure Pathways from Power Plant Emissions

1.2 Concept of Epidemiological Study

Epidemiological is the process to estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media, now or in the future. Epidemiological addresses following things:

- Types of health problems may be caused by environmental stressors
- Chance that people will experience health problems when exposed to different levels of stressors
- The level below which some stressors don't pose a human health risk
- Environmental stressors that people are exposed to and at what levels and for how long
- People who likely to be susceptible to environmental stressors because of factors such as age, genetics, pre-existing health conditions, ethnic practices, gender, etc.
- People more likely to be exposed to environmental stressors because of factors such as where they work, where they play, what they like to eat, etc.

These issues help decision makers to understand the possible human health risks from environmental media. An exposure assessment is the quantitative or qualitative evaluation of that contact; it describes the intensity, frequency, and duration of contact, and often evaluates the rates at which the chemical crosses the boundary (chemical intake or uptake rates), the route by which it crosses the boundary (exposure route; e.g., dermal, oral, or respiratory), and the resulting amount of the chemical that actually crosses the boundary (a dose) and the amount absorbed (internal dose). Planning and scoping is must to make judgments about major risk assessments.

The following structure focuses on Epidemiological:

Who/ What/ Where is at risk?

- Individual
- General population
- Children, teenagers, pregnant/nursing women
- Population subgroups – highly susceptible (for example, due to asthma, genetics, etc.) and/or highly exposed (based on geographic area, gender, racial or ethnic group, or economic status)

What is the environmental hazard of concern?

- Chemicals (single or multiple/cumulative risk)

- Physical (dust, heat)
- Microbiological or biological
- Nutritional (for example, diet, fitness, or metabolic state)
- Socio-Economic (for example, access to health care)

Where do these environmental hazards come from?

- Point sources (for example, smoke or water discharge from a factory);
- Non-point sources (for example, automobile exhaust)

How does exposure occur?

- Pathways (recognizing that one or more may be involved)
 - Air
 - Surface Water
 - Groundwater
 - Soil
 - Food
 - Non-food consumer products, pharmaceuticals

Routes (and related human activities that lead to exposure)

- Ingestion (both food and water)
- Contact with skin
- Inhalation
- Non-dietary ingestion (for example, “hand-to-mouth” behavior)

What does the body do with the environmental hazard and how is this impacted by factors such as age, race, sex, genetics, etc.?)

- Absorption – does the body take up the environmental hazard
- Distribution – does the environmental hazard travel throughout the body or does it stay in one place?
- Metabolism – does the body breakdown the environmental hazard?
- Excretion – how does the body get rid of it?

What are the health effects?

- Example of some health effects include cancer, heart disease, liver disease and nerve disease.

How long does it take for an environmental hazard to cause a toxic effect? Does it matter when in a lifetime exposure occurs?

- How long?
 - Acute – right away or within a few hours to a day
 - Sub chronic – weeks or months (for humans generally less than 10% of their lifespan)
 - Chronic – a significant part of a lifetime or a lifetime (for humans at least seven years)
 - Intermittent
- Timing - Is there a critical time during a lifetime when a chemical is most toxic (e.g., fetal development, childhood, during aging)?

1.3 Objectives and Scope of the Study

The study includes the following objectives:

- To access the information through quantifying environmental pollutant and its effects on human health
- To evaluate the nature of pollutants.
- To estimate physico-chemical load of contaminants.
- To generate health data of population in and around the plant through Epidemiological study on representative number of population and livestock samples
- To suggest corrective measures to improve health status of population in the study area.

1.4 Study Methodology

- Identification of the plant boundary, location of plant equipment, stack, ash pond and the area of study, identification of human settlements in the study area.
- Quantify the pollutants present in different environmental media to which people are exposed, like ambient air, ground water and surface water, soil and food grown on the soil.
- Obtain information on diet, living and working conditions, income, time-activity pattern,
- Generate health data of representative population to establish the baseline and estimate the health risk
- Suggest preventive and corrective measures to improve the environment, if any evidence of adverse impact of human population is observed during the study.

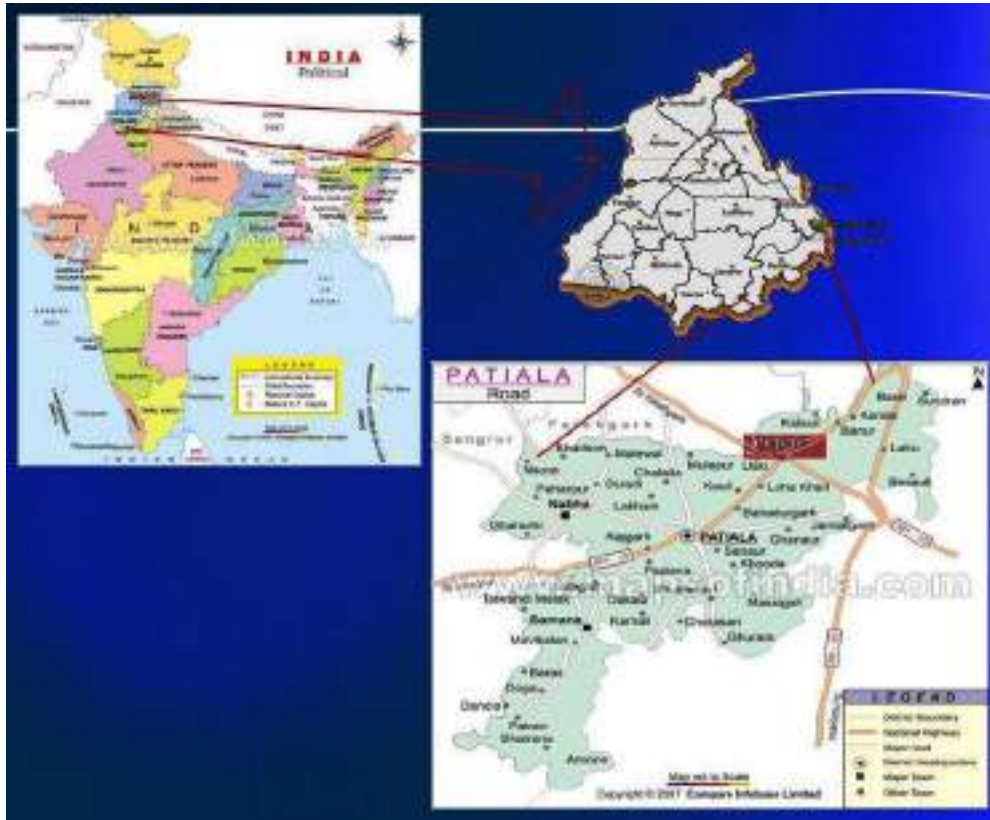


Figure 2 : Location Map

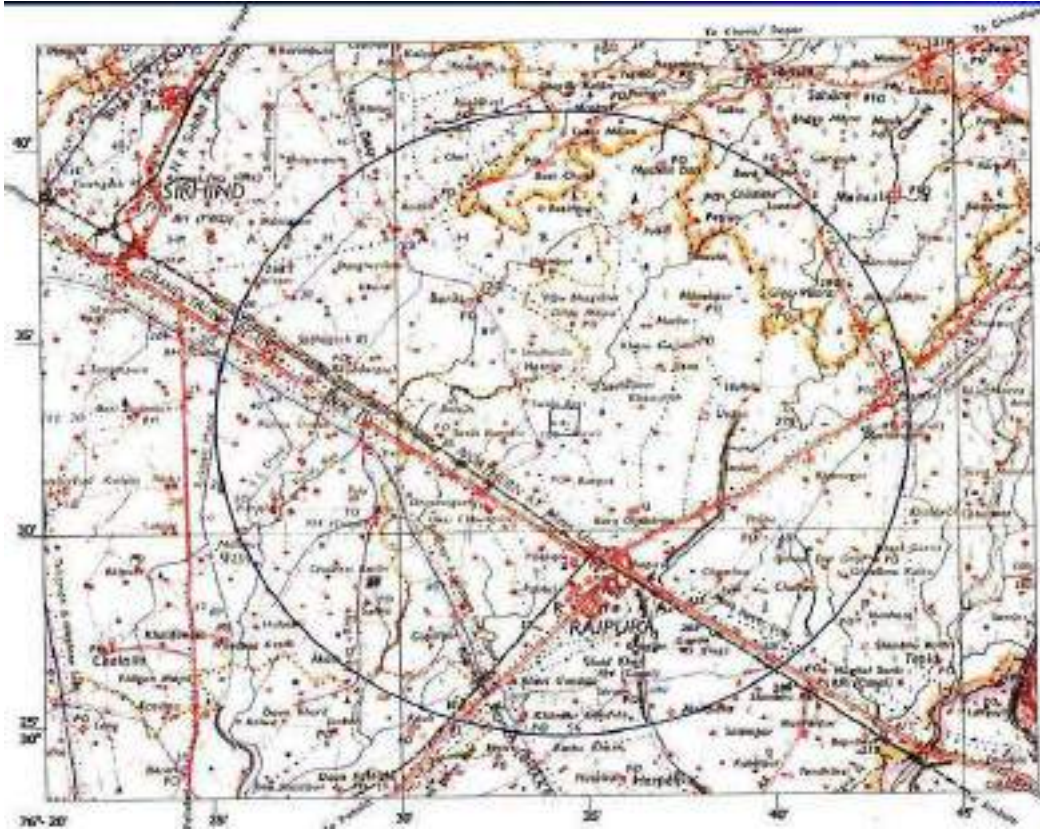


Figure 3: Location of the Power Plant on Survey of India Toposheet



Figure 4: Google Image of Rajpura Power Project

CHAPTER 2 : BASELINE ENVIRONMENTAL STATUS

2.1 Meteorology

Air emissions will follow the wind direction, therefore identification of impacted area and non-impacted around the source is important. The height of emission release governs the location of impact point. Maximum impact from an elevated source is observed at a location which is 6 to 10 times the height of the source in downwind direction. Historical Meteorological Data were obtained from the Climatological Tables of IMD (Ambala)

Table 1 Meteorological Data of Ambala (Source-IMD-1950 to 2010)

Month	Temperature (deg C) daily		Relative Humidity, %		Rainfall (mm)	Wind speed kmph	Pre-dominant wind direction (from)	Cloud cover (Oktas)
	Max	Min	Max	Min				
January	20.4	6.6	80	55	38.5	5.9	NW, W, SE	1.9
February	23.3	9.2	72	48	28.4	6.8	NW, W, SE	1.8
March	29.0	13.9	64	41	29.5	7.9	NW, W, SE	1.6
April	35.8	19.6	47	28	6.1	7.4	NW, W, SE	1.1
May	39.6	23.8	41	26	19.3	7.9	SE, W, NW	1.1
June	39.4	26.6	55	38	73.2	8.6	SE, W, NW	1.8
July	34.8	25.7	80	64	267.2	7.9	SE, W, NW	3.9
August	33.3	25.1	84	70	267.2	6.2	SE, W, NW	3.9
September	34.0	23.6	79	61	161.3	5.4	NW, SE	1.7
October	32.6	18.1	69	46	32.9	5.2	NW, SE	0.6
November	28.0	11.1	70	45	9.3	5.5	NW, SE	0.7
December	22.5	7.4	79	52	13.2	5.1	NW, SE	1.4
Annual	31.1	17.6	68	48	961.4	6.7	NW, SE	1.8

Name of Impacted and Non-impacted villages from NPL Emissions

S.N	Name of Villages	Distance & Direction from NPL	Impacted/ Non-impacted
1	Suralkalan	1.7 Km, West	Slightly Impacted
2	Dabhalikalan	3.8 Km, South	Moderately Impacted
3	Dadumajra	3.5 Km, North	Slightly impacted
4	Nalash	2.0 Km, South East	Severely Impacted
5	Bakshiwala	4.5 Km, South West	Non-Impacted

2.2 Ambient Air Quality: Ambient air quality monitoring inside & outside the plant boundary were done at seven locations. Monitoring was done for 24-hours for PM_{2.5}, PM₁₀, NO₂, SO₂, CO, Pb, As, Ni (in PM₁₀), NH₃, O₃, Benzene, Benzo-a-pyrene. Results of monsoon and post-

monsoon months were provided by Nabha Power Limited. The results of all parameters are well within the NAAQS.

Table:2 Ambient Air Quality inside & outside the Plant Boundary (24-h avg in $\mu\text{g}/\text{m}^3$)

Sr. No	Monitoring Location	Date	Parameters				
			PM ₁₀ $\mu\text{g}/\text{m}^3$	PM _{2.5} $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	CO mg/m ³
1	Dabhali	20-06-2019	70	38	12	22	0.61
		10-09-2019	72	40	12	25	0.59
		29-11-2019	72	41	10	21	0.95
2	Salempura	20-06-2019	71	40	12	26	0.65
		10-09-2019	70	41	14	27	0.65
		29-11-2019	70	39	8	17	0.93
3	Dadumajra	20-06-2019	73	42	12	23	0.67
		10-09-2019	73	38	13	25	0.62
		29-11-2019	68	38	11	23	0.88
4	Near Storm Water Sump	18-06-2019	71	40	13	24	0.68
		10-09-2019	77	46	17	29	0.73
		28-11-2019	71	39	12	26	0.66
5	Near Loco Shed	18-06-2019	79	47	12	26	0.66
		10-09-2019	77	46	15	31	0.71
		28-11-2019	79	42	14	29	0.71
6	Near Switch Yard	18-06-2019	76	43	15	26	0.69
		10-09-2019	78	46	16	30	0.69
		28-11-2019	75	44	16	33	0.74
7	Near NDCT	18-06-2019	77	43	14	26	0.58
		10-09-2019	74	41	14	27	0.76
		28-11-2019	82	46	15	30	0.70
		Min	68	38	8	17	0.58
		Max	82	47	17	33	0.95
		Average	74	42	13	26	0.71
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Eco Laboratories & Consultants Pvt. Ltd. (Sector-74, Mohali, Punjab-160071)

Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in $\mu\text{g}/\text{m}^3$)

Sr. No	Monitoring Location	Date	Parameters				
			PM ₁₀ $\mu\text{g}/\text{m}^3$	PM _{2.5} $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	CO mg/m ³
1	Dabhali	13-03-2020	66	30	12	23	0.77
		24-06-2020	64	33	9	19	0.56
		11-09-2020	70	38	12	28	0.61
		23-12-2020	93	51	10	16	1.2
2	Salempura	13-03-2020	72	38	9	19	0.73
		24-06-2020	67	36	8	17	0.64
		11-09-2020	77	44	11	26	0.65
		23-12-2020	95	54	13	18	1.3

3	Dadumajra	13-03-2020	70	36	9	25	0.76
		24-06-2020	66	34	7	19	0.60
		11-09-2020	75	43	9	23	0.69
		23-12-2020	96	54	11	19	1.3
4	Near Storm Water Sump	13-03-2020	65	36	11	24	0.60
		24-06-2020	61	30	8	18	0.55
		11-09-2020	75	42	10	23	0.73
		22-12-2020	88	43	8	12	1.2
5	Near Loco Shed	13-03-2020	75	40	12	30	0.68
		24-06-2020	71	39	10	22	0.63
		11-09-2020	79	47	13	26	0.64
		21-12-2020	88	49	11	19	1.3
6	Near Switch Yard	13-03-2020	73	41	15	31	0.68
		24-06-2020	66	35	9	20	0.58
		11-09-2020	72	40	13	27	0.71
		22-12-2020	91	46	6	9	1.3
7	Near NDCT	13-03-2020	78	43	13	28	0.63
		24-06-2020	69	38	11	25	0.61
		11-09-2020	72	40	12	25	0.68
		21-12-2020	89	46	10	14	1.4
		Min	61	30	6	9	0.55
		Max	96	54	15	31	1.4
		Average	77	42	11	22	0.85
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Eco Laboratories & Consultants Pvt. Ltd. (Sector-74, Mohali, Punjab-160071)
Inter stellar Testing Centre Pvt. Ltd. (Industrial Area Phase-1, Panchkula-134109, Haryana)

Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in $\mu\text{g}/\text{m}^3$)

Sr. No	Monitoring Location	Date	Parameters				
			PM ₁₀ $\mu\text{g}/\text{m}^3$	PM _{2.5} $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	CO mg/m^3
1	Dabhali	13-03-2021	86	43	10	19	1.3
		19-06-2021	65	34	17	20	1.3
		10-09-2021	82	37	10	17	1.8
		17-12-2021	90	51	8	13	1.0
2	Salempura	13-03-2021	92	48	12	17	1.4
		19-06-2021	73	38	16	19	1.4
		10-09-2021	87	35	9	14	1.4
		17-12-2021	92	48	13	27	1.2
3	Dadumajra	13-03-2021	89	44	10	15	1.2
		19-06-2021	68	31	14	18	1.5
		10-09-2021	93	40	12	18	2.5
		17-12-2021	94	53	12	19	1.1
4	Near Storm Water Sump	10-03-2021	84	43	8	12	1.3
		07-09-2021	86	40	12	17	1.0

5	Near Loco Shed	15-12-2021	94	55	12	20	1.3
		10-03-2021	81	40	9	13	1.3
		07-09-2021	81	37	8	14	2.2
		15-12-2021	89	49	8	13	1.5
6	Near Switch Yard	10-03-2021	88	45	6	10	1.4
		07-09-2021	85	39	6	10	3.6
		15-12-2021	97	57	16	33	1.4
7	Near NDCT	10-03-2021	87	40	6	10	1.2
		07-09-2021	89	42	11	18	2.6
		Min	68	31	6	10	1
		Max	97	57	16	33	3.6
		Average	86	43	10	17	1.65
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Interstellar Testing Centre Pvt. Ltd. (Industrial Area Phase-1, Panchkula-134109, Haryana)

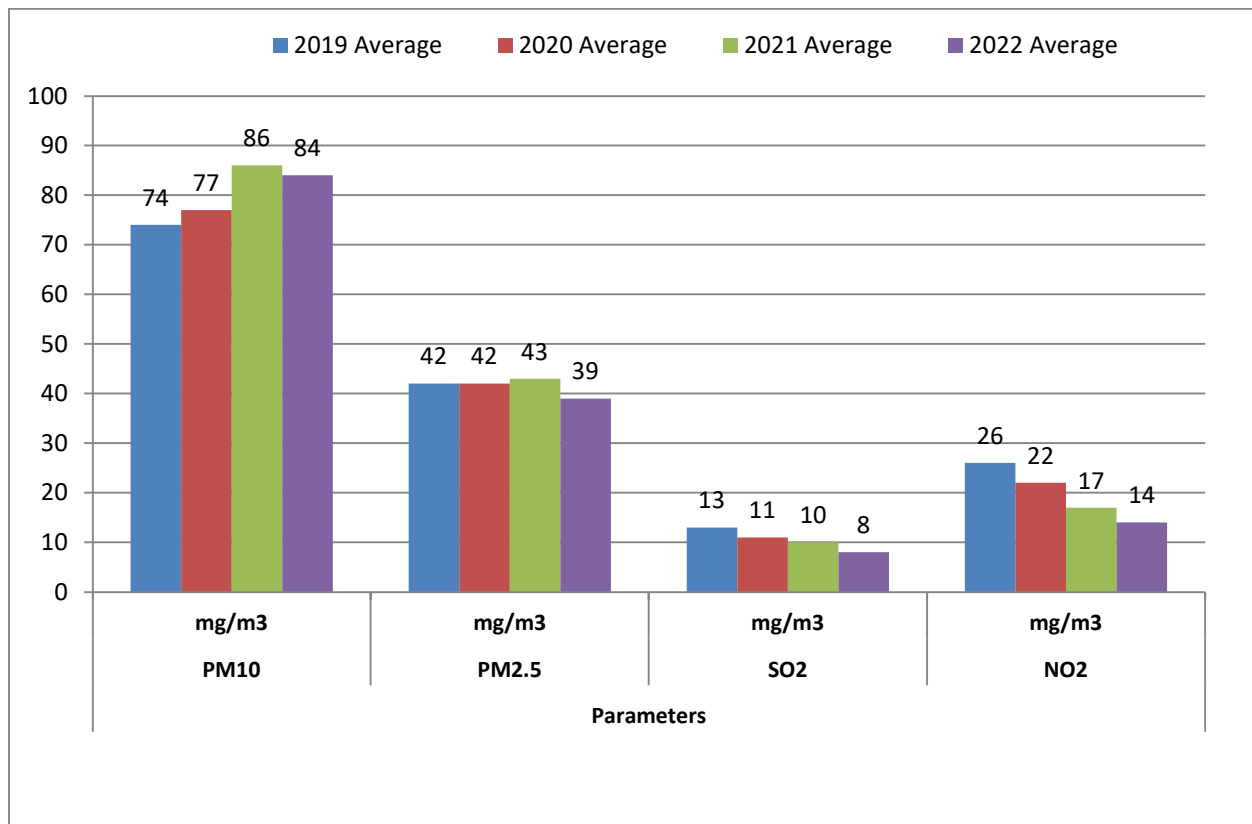
Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in $\mu\text{g}/\text{m}^3$)

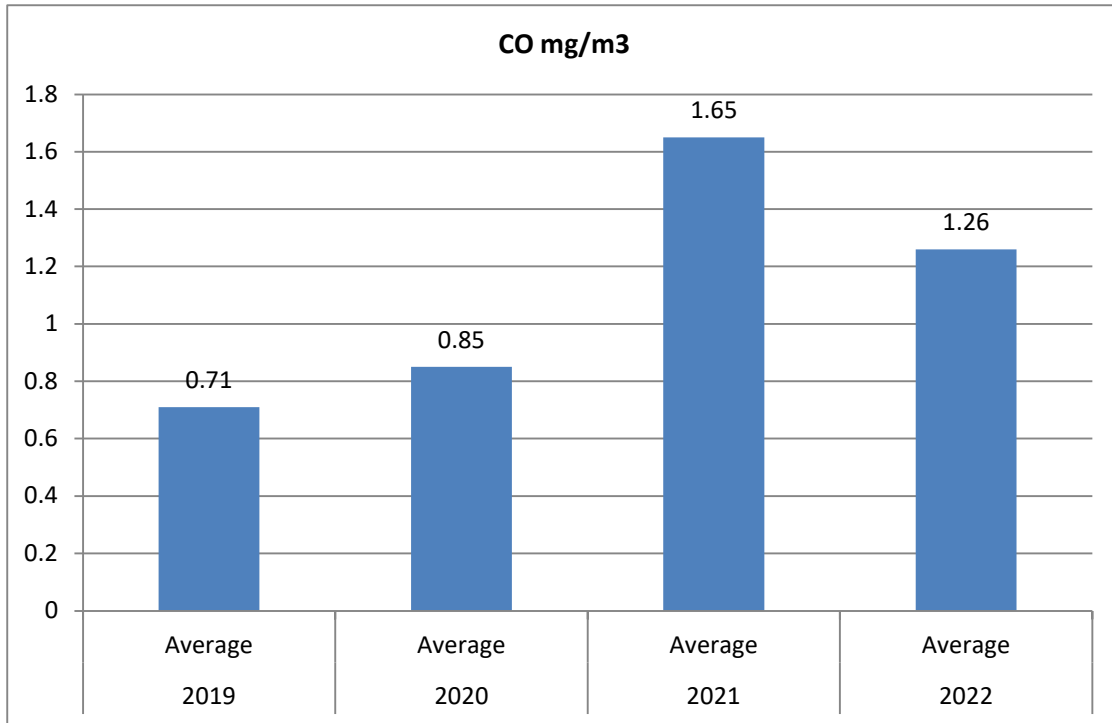
Sr. No	Monitoring Location	Date	Parameters				
			PM ₁₀ $\mu\text{g}/\text{m}^3$	PM _{2.5} $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	CO mg/m^3
1	Dabhali	16-06-2022	87	40	12	22	1.3
		10-09-2022	83	35	7	10	1.1
2	Salempura	16-06-2022	83	37	8	15	1.3
		10-09-2022	90	41	10	15	1.3
3	Dadumajra	16-06-2022	83	41	10	19	1.2
		10-09-2022	86	37	5	10	1.2
4	Near Storm Water Sump	13-06-2022	87	43	8	13	1.4
		08-09-2022	81	36	7	10	1.4
5	Near Loco Shed	13-06-2022	84	43	10	15	1.3
		08-09-2022	85	38	6	12	1.3
6	Near Switch Yard	13-06-2022	83	42	6	11	1.3
		08-09-2022	86	39	8	13	1.1
7	Near NDCT	13-06-2022	80	38	12	22	1.4
		08-09-2022	82	37	7	11	1.1
		Min	80	35	5	10	1.1
		Max	90	43	12	22	1.4
		Average	84	39	8	14	1.26
National Standard			100 (24-hrs average)	60 (24-hrs average)	80 (24-hrs average)	80 (24-hr average)	4 (1-hrs average)

Source : Inter stellar Testing Centre Pvt. Ltd. (Industrial Area Phase-1, Panchkula-134109, Haryana)

Cont.....Ambient Air Quality inside & outside the Plant Boundary (24-h avg in $\mu\text{g}/\text{m}^3$)

Sr. No	Date		Parameters				
			PM ₁₀ $\mu\text{g}/\text{m}^3$	PM _{2.5} $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	CO mg/m^3
1	2019	Minimum	68	38	8	17	0.58
		Maximum	82	47	17	33	0.95
		Average	74	42	13	26	0.71
2	2020	Minimum	61	30	6	9	0.55
		Maximum	96	54	15	31	1.4
		Average	77	42	11	22	0.85
3	2021	Minimum	68	31	6	10	1
		Maximum	97	57	16	33	3.6
		Average	86	43	10	17	1.65
4	2022	Minimum	80	35	5	10	1.1
		Maximum	90	43	12	22	1.4
		Average	84	39	8	14	1.26





2.3 Ground Water Quality

Ground water (hand pump / tube well) is the main source of drinking and irrigation in the study area. Ground water samples (9 Nos) were collected from villages located around the power plant. The water samples were analysed for physicochemical and biological parameters as per the Standard Methods (APHA). The results were compared with the drinking water quality standard prescribed by the Bureau of Indian Standards (IS: 10500:2012). The pH of the samples was found to be alkaline (7.41 - 8.18). TDS values of the sample ranges between 150 - 1380 mg/l. Hardness content of the sample ranges between 52 - 440 mg/l. Calcium values of the samples ranges between 16 - 120 mg/l. Magnesium values of the samples ranges between 2.9 - 34 mg/l. Chloride values of the samples ranges between 35 - 280 mg/l. Fluoride levels were found to be within the beneficial levels of 0.4 mg/l to 1.5 mg/l (less than 0.4 mg/l fluoride in drinking water will cause dental caries and more than 1.5 mg/l fluoride in drinking water will cause dental and skeletal fluorosis). The ground water did not show any oil or bacterial contamination. Heavy metals like Pb, Cu, Mn, Cr, Ni, Cd, Hg, As, and Se were found to be below the detectable limit.



Figure 5: Ground Water Sampling Locations

Table 3: Ground Water Quality Test Results

	Parameters	Unit	Nalash	Surkalan	Dadu majra	Salempur	Dabhali	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	8.14	7.41	8.14	8.18	7.78	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	1120	890	850	880	1980	-	-
3	Turbidity	NTU	1.5	<1	<1	1.8	2	5	15
4	Total Dissolved Solids	mg/l	790	630	590	620	1380	500	2000
5	Total Hardness as CaCO ₃	mg/l	210	260	210	260	440	200	600
6	Calcium as Ca	mg/l	60	64	56	68	120	75	200

7	Magnesium as Mg	mg/l	14.6	24	17	22	34	30	100
8	Sulphate	mg/l	72	58	52	65	112	200	400
9	Chlorides as Cl	mg/l	90	72	60	80	280	250	1000
10	Nitrates as NO ₃	mg/l	8.5	7.5	7.2	10.5	12.5	45	No relaxation
11	Fluoride as F	mg/l	0.54	0.45	0.42	1.24	1.32	1.0	1.5
12	Iron as Fe	mg/l	0.18	0.12	0.08	0.22	0.26	0.3	No relaxation
13	Copper as Cu	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	1.5
14	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	0.58	0.48	0.40	0.82	1.08	5	15
17	Chromium	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	Nil	Nil	Nil	Nil	Nil		0.03
20	Cadmium as Cd	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	0.05
23	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Cont.....Ground Water Quality Test Results

	Parameters	Unit	Rangia	Harna	Haripur	Badalimajra	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	7.89	7.68	8.08	8.12	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	920	710	980	210	-	-
3	Turbidity	NTU	1.5	<1	1.5	<1	5	15
4	Total Dissolved Solids	mg/l	650	510	690	150	500	2000
5	Total Hardness as CaCO ₃	mg/l	250	260	210	52	200	600
6	Calcium as Ca	mg/l	60	64	60	16	75	200
7	Magnesium as Mg	mg/l	24	24	14.6	2.9	30	100
8	Sulphate	mg/l	72	62	72	28	200	400

9	Chlorides as Cl	mg/l	85	70	85	35	250	1000
10	Nitrates as NO ₃	mg/l	9.2	8.2	10.8	6.8	45	No relaxation
11	Fluoride as F	mg/l	0.40	1.14	1.24	0.42	1.0	1.5
12	Iron as Fe	mg/l	0.12	0.22	0.24	0.08	0.3	No relaxation
13	Copper as Cu	mg/l	<0.02	<0.02	<0.02	<0.02	0.05	1.5
14	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	<0.05	<0.05	<0.05	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	0.75	0.85	0.95	0.25	5	15
17	Chromium	mg/l	<0.005	<0.005	<0.005	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	<0.01	<0.01	<0.01	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	Nil	Nil	Nil	Nil		0.03
20	Cadmium as Cd	mg/l	<0.001	<0.001	<0.001	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	0.01	0.05
23	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	Nil	Nil	Nil	Nil	Nil	Nil

2.4 Surface Water Quality

One canal water sample was collected. The sample was analyzed for physico-chemical and biological parameters as per Standard Methods (APHA). Hg, As, Pb and Cr were found to be below the detectable limit. The surface water quality is fit for irrigation purpose.

2.5 Soil Quality

Nine soil samples were collected from agriculture fields around the plant. The samples were analysed for pH, conductivity, Organic Matter and metallic constituents. pH was found to be moderately alkaline (7.8 to 8.5), conductivity was found to be normal (<1000 µmhos/cm) and Organic Matter was found to be sufficient (0.8%). The concentration of Lead was found to be <0.3 mg/kg, Nickel: 6.2 to 8.5 mg/kg, Cadmium: <0.1 mg/kg, Chromium: <0.2 mg/kg, Arsenic: < 0.2 mg/kg and Mercury: <0.1 mg/kg.

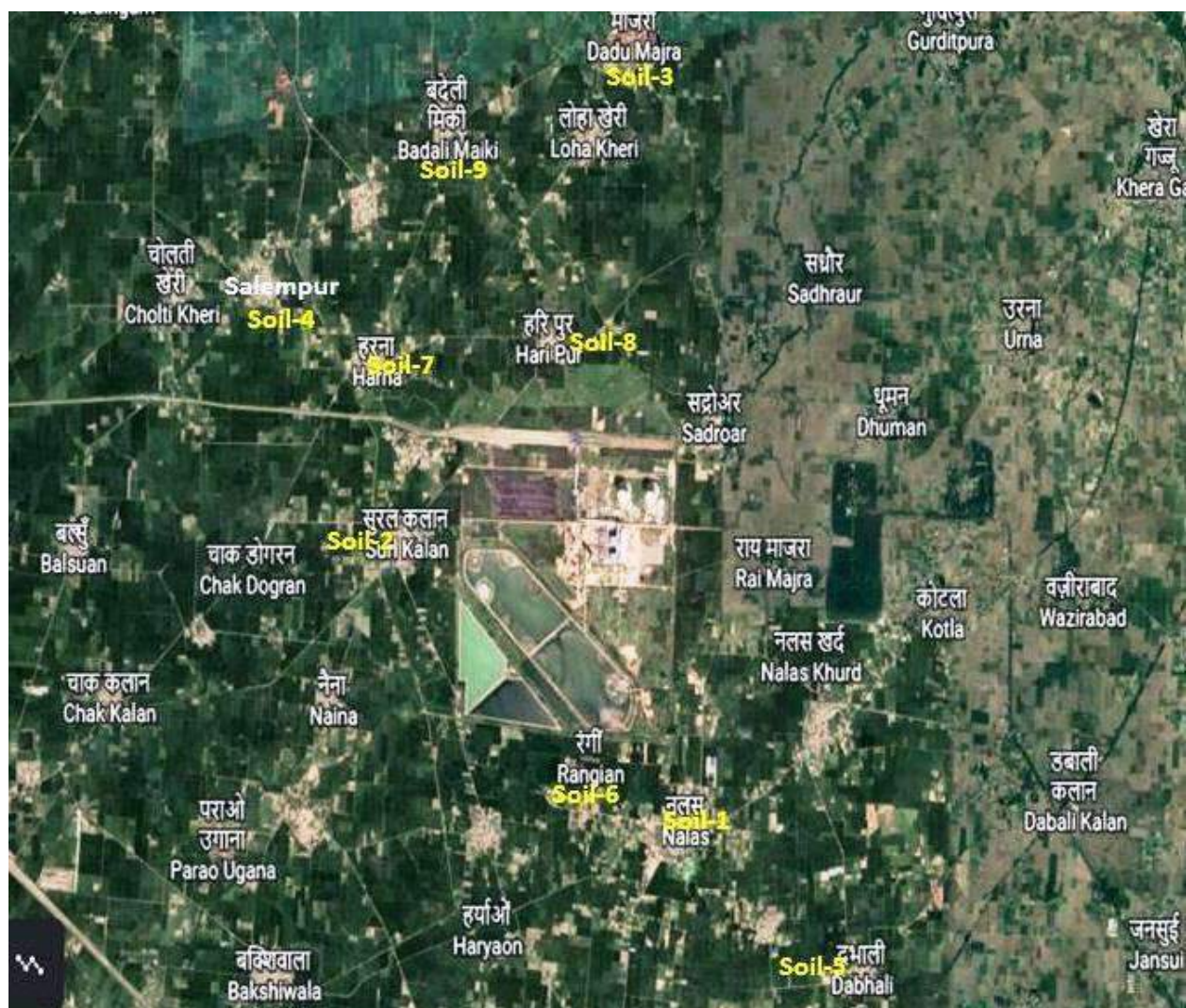


Figure 6: Soil Sampling Locations

Table 4: Soil Quality Test Results

	Parameters	Unit	Nalash	Surkalalan	Dadumajra	Salempur	Dabhali
1	pH (20% slurry)	-	8.35	8.32	8.26	8.16	8.18
2	Conductivity (20% slurry)	µmhos/cm	120	70	120	60	110
3	Organic Matter	%	0.82	0.80	0.90	0.78	0.88
4	Available Phosphorous	kg/ha	52	48	52	45	56
5	Available Nitrogen	kg/ha	174	168	176	162	180
6	Nickel as Ni	mg/kg	8.5	7.5	6.8	6.5	7.2
7	Copper as Cu	mg/kg	3.2	3.5	2.5	2.8	2.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.18	0.16	0.12	0.10	0.14

10	Iron as Fe	mg/kg	2.8	4.2	3.2	3.8	3.5
11	Zinc as Zn	mg/kg	22	32	18	26	26
12	Lead as Pb	mg/kg	ND	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND	ND

cont.....Soil Quality Test Results

	Parameters	Unit	Rangia	Harna	Haripur	Badali Maiki
1	pH (20% slurry)	-	7.98	7.90	8.38	7.96
2	Conductivity (20% slurry)	µmhos/cm	60	110	90	50
3	Organic Matter	%	0.80	0.92	0.88	0.78
4	Available Phosphorous	kg/ha	45	58	52	45
5	Available Nitrogen	kg/ha	172	180	182	170
6	Nickel as Ni	mg/kg	6.5	7.8	8.2	6.2
7	Copper as Cu	mg/kg	2.2	2.5	3.8	2.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.10	0.12	0.18	0.14
10	Iron as Fe	mg/kg	2.8	2.5	3.5	2.2
11	Zinc as Zn	mg/kg	22	24	28	20
12	Lead as Pb	mg/kg	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND

2.6 Heavy Metals in Food Samples

Rice, dal, wheat and maize and locally grown vegetables are the staple food of the people of this area. Chicken, goat meat and eggs are also consumed by about 30% people. Samples of rice, dal, wheat, gram, pulses, potato, onion, tomato were collected from 9 crop fields around the power plant. No heavy metals were detected in any of the food samples (heavy metals like Arsenic, mercury, cadmium, chromium, lead and nickel were found to be less than 0.1 mg/kg).

CHAPTER 3: BASELINE HEALTH STATUS

3.1 Pre-Project Data of Human Health

Village-wise or Taluk-wise health records of population of villages of the study area is not available with the Health Department of State Government.

3.2 Primary Health Survey

A cross-sectional study is an observational one. The defining feature of a cross-sectional study is that it can compare different population groups at a single point in time. This is like taking a snapshot. Findings are drawn from whatever fits into the frame. The benefit of a cross-sectional study design is that it allows comparing many different variables at the same time. However, cross-sectional studies may not provide definite information about cause-and-effect relationships. This is because such studies offer a snapshot of a single moment in time; they do not consider what happens before or after the snapshot is taken.

Principally two issues were focused during the survey; i) the types of health problems likely to be caused by discharges from coal based thermal power plant and ii) the spectrum of health problems that the subjects living in the study area might experience when exposed to different environmental media.

Suitable random sample of people living in the impact and non-impact zone was considered for health check-up. The sample people live, eat and work in similar microenvironment and are likely to be exposed to similar environmental pollutants. For completing the exercise designed questionnaire was used. The design of the questionnaire was "Interviewer Administered".

Primary health survey was carried out by organizing health camps at five (5) locations during the period 07-12-2022 to 09-12-2022. The selected locations represented the highest and moderate impact area and control area due to stack emissions from NPL. Cross-sectional population was screened for the health check-up. Health check-up was done using a questionnaire. Each subject was initially asked questions by the team and then the health checkup was done by a qualified Doctor.

A total of 309 subjects includes children, adolescents, adults and elderly, who were exposed in the existing environment for more than 5 years. The selected locations for carrying out health survey is provided in Table 6 and marked in Figure 6.

Table 5: Name of Locations Selected for Carrying out Health Survey

S. No	Location	Distance & Direction from NPL	Impacted / Control Area	Date of Health Check-up	Persons Checked
1	Surkalan	1.7 Km, West	Slightly Impacted	08-12-2022 (FN)	74
2	Dabhali	3.8 Km, South	Moderately Impacted	07-12-2022 (AN)	38
3	Dadumajra	3.5 Km, North	Slightly impacted	08-12-2022 (AN)	110
4	Nalash	2.0 Km, South East	Severely Impacted	07-12-2022 (FN)	44
5	Bakshiwala	4.5 Km, South West	Non-Impacted	09-12-2022 (FN)	43
	Total				309



Figure 7 Health Survey Locations Marked on Google Image

3.3 Findings of Primary Health Survey

Five vital signs were observed for each subject; namely height, weight, temperature, blood pressure and pulse rate. General appearance of each subject like development and nutrition status, body habits, deformities, attention to grooming, cleanliness of nail, skin, hair and tongue were also noted. Lung Function was done for willing and capable subjects. ECG was done for subjects who complained of heart problems and as recommended by the Doctor-in-charge. Routine urine test and blood test were done for subjects who were recommended by the Doctor-in-charge.

The physical examination included the following parameters:

HEENT (Head, Eyes, Ears, Nose, Throat)

Head: Size and shape

Eyes: Inspection of conjunctivae and lids, Examination of pupils and irises (e.g., reaction to light and accommodation, size and symmetry).

Ears, Nose and Throat: External inspection of ears and nose (e.g., overall appearance, scars, lesions, masses), Otoscopic examination of external auditory canals and tympanic membranes, Assessment of hearing (e.g., whispered voice, finger rub, tuning fork), Inspection of nasal mucosa, septum and turbinate, Inspection of lips, teeth and gums, Examination of pharynx, oral mucosa, salivary glands, hard and soft palates, tongue, tonsils and posterior pharynx.

Neck: Examination of neck (e.g., masses, overall appearance, symmetry, tracheal position, crepitus), Examination of thyroid (e.g., enlargement, tenderness, mass)

Respiratory System: Assessment of respiratory effort (e.g., intercostal retractions, use of accessory muscles, diaphragmatic movement), Percussion of chest (e.g., dullness, flatness, hyper-resonance), Palpation of chest (e.g., tactile fremitus), Auscultation of lungs (e.g., breath sounds, adventitious sounds, rubs), Lung Function using Peak Expiratory Function Meter.

Cardiovascular System: Palpation of heart (e.g., location, size, thrills), Auscultation of heart with notation of abnormal sounds and murmurs, examination of carotid arteries (e.g., pulse amplitude, bruits), abdominal aorta (e.g., size, bruits), femoral arteries (e.g., pulse amplitude, bruits), pedal pulses (e.g., pulse amplitude) and extremities for edema and/or varicosities

3.4 Body Mass Index (BMI)

BMI is calculated using the weight and height of the people. Normal BMI ranges from 18.5 kg/m² – 24.9 kg/m². Person with BMI below 18.5 kg/m² is termed underweight and above 25 kg/m² is overweight. People with BMI greater than 30 kg/m² are termed obese.

Table 6 : BMI Results of the Five Sampling Locations (n= 309)

	Name of Location	Normal Weight (%)	Overweight (%)	Obese %	Underweight (%)
1	Surkalan	37.83	28.37	8.1	25.67
2	Dabhalikalan	31.57	28.95	34.21	5.26
3	Dadumajra	45.45	16.36	5.4	32.72
4	Nalash	59.1	20.45	20.45	0
5	Bakshiwala	65.11	23.25	11.63	0

Majority of people in Bakshiwala and Nalash were found to have normal weight. Majority of people in Dabhalii and Surkalan were found to be overweight. 32.72% people of Dadumajra were found to be underweight. 34.21% people of Dabhali were found to be Obese.

3.5 Lung Function Test

The peak expiratory flow rate (PEFR) is a test that measures how fast a person can exhale (breathe out). This test checks lung functioning, and is often used by patients who have asthma. Asthma is a chronic condition characterized by ongoing inflammation of the airways. Common asthma symptoms include shortness of breath that worsens with activity, wheezing, and cough. The flow of exhaled air from the lungs may be restricted due to inflammation or congestion from excess mucous.

The basic pulmonary function as per the standard prescribed by the American Thoracic Society was conducted [including the equipment that met the specifications so as to have reproducible and reliable measurements of lung functions]. Each subject was educated before the Spirometry that was undertaken by a trained person in a comfortable and sitting posture so as to get the best value. Out of the three attempts made by each subject, best value is selected.

Table 7: Normal PEF Values for Males (l / min)

Age in years	PEF Values of People of Specified Height and Years				
	60"	65"	70"	75"	80"
20	554	602	649	693	740
25	543	590	636	679	725
30	532	577	622	664	710
35	521	565	609	651	695
40	509	552	596	636	680
45	498	540	583	622	665
50	486	527	569	607	649
55	475	515	556	593	634
60	463	502	542	578	618
65	452	490	529	564	603
70	440	477	515	550	587

Table 8: Normal PEF Values for Females (l / min)

Age in years	PEF Values of People of Specified Height and Years				
	60"	65"	70"	75"	80"
20	390	423	460	496	529
25	385	418	454	490	523
30	380	413	448	483	516
35	375	408	442	476	509
40	370	402	436	470	502
45	365	397	430	464	495
50	360	391	424	457	488
55	355	386	418	451	482
60	350	380	412	445	475
65	345	375	406	439	468
70	340	369	400	432	461

Table 9: Normal PEF Values for Adolescents (l / min)

Height (Inches)	Males & Females
43"	147
44"	160
45"	173
46"	187
47"	200
48"	214
49"	227
50"	240
51"	254
52"	267

53"	280
54"	293
55"	307
56"	320
57"	334
58"	347
59"	360
60"	373
61"	387
62"	400
63"	413
64"	427
65"	440
66"	454

Table 10: Results of Lung Function Test

Location	Males		Females	
	Normal PEF % population	Below Normal PEF % population	Normal PEF % population	Below Normal PEF % population
Surkalan	90	10	93	7
Dabhalikalan	91	9	92	8
Dadumajra	92	8	92	8
Nalash	90	10	90	10
Bakshiwala	93	8	95	5

Observation: 93% males and 95% females of the study area have normal lung function. This shows a healthy population status of the study area.

3.6. General Health Parameters

Majority of subjects were from good to moderate socio economic background but their health was not under any stress due to environmental factors, nutritional factors, or availability of primary health care, etc. The general hygiene related to nails, skin and teeth of the people were found to be good. Malnutrition was absent. No disease or any chronic condition that could be related to environmental pollution has been observed in the population of study area.

None of the people reported cancer, gross neurologic, cardiovascular, hepatic or renal damage/ There was not a single case of congenital abnormality.

Table 11 General Health Disorders Found in Population around NPL

S. No	Disorders	% cases observed
Cardiovascular Disorders		
1	Persistent chest pain	2
2	Abnormal pulse rate	1
3	Hypertension	7
Respiratory Disorders		
1	Cough	5.8
2	Headache	11
3	Breathlessness	3
4	Asthma	0
5	Chronic Obstructive Pulmonary Disease (COPD)	0
Other Health Disorders		
1	Dental problems	10
2	Joint pain	26
2	Diabetes Mellitus	14
3	Eye Disorder	8
4	Low hemoglobin in Females	15
5	Low hemoglobin in Males	10

Table 12: Cases of Health Disorders found in Population around NPL

	Name of Disorders	%		Name of Disorders	%
1	Eye Checkup		4	Dental Checkup	
	Corneal clouding	0.8		Fluorosis	0.6
	Conjunctival Xerosis	1		Leadline	0.4
	Muddy conjunctiva	0.8		Bleeding gums	1.2
	Cataract	4		Dental caries	2
2	Ear Check up			Pyorrhea	3
	Ear ache	0.4	5	Skin check up	
	Ear discharge	0		Dermatitis	2
	Deafness	0.4		Rash	1
	Ear Infection	0.4		Fungal or Bacterial Infection	1
3	Tongue check up		6	Oedema (Present)	0.4
	Desquamation		7	Tonsils (Enlarged)	0.4
	Thrush	1		Neck lymph nodes	
	Protruded	1	8	(enlarged)	0.4

Table 13- Results of Health Survey: Category of Disease Vs. Age Group

LOCATION 1 SURKALAN					
Category of Disease	% of Cases Reported in Following Age Groups				
	Children (5 to 12)	Adolescence (12+ to 18)	Adult (18+ to 40)	Middle Age (40+ to 60)	Elderly Above 60
Addiction				1	
High BP			3	15	17
Low BP			4	1	1
Coughing			4	4	5
Fever			3		2
Headache			8	3	8
Breathlessness				1	3
Chest Pain			1		1
LOCATION 2 DABHALIKALAN					
Category of Disease	% of Cases Reported in Following Age Groups				
	Children	Adolescence	Adult	Middle Age	Above 60
Addiction					
High BP			13	24	21
Low BP		1		2	
Coughing		4	2		4
Fever	2	4	1		
Headache			10	5	8
Breathlessness			3		
Chest Pain				2	
LOCATION 3 DADUMAJRA					
Category of Disease	% of Cases Reported in Following Age Groups				
	Children	Adolescence	Adult	Middle Age	Above 60
Addiction				1	
High BP			3	11	14
Low BP			1		
Coughing				1	1
Fever					2
Headache			3	1	6
Breathlessness					
Chest Pain			1		2
LOCATION 4 NALASH					
Category of Disease	% of Cases Reported in Following Age Groups				
	Children	Adolescence	Adult	Middle Age	Above 60
Addiction				1	
High BP			6	10	45
Low BP					

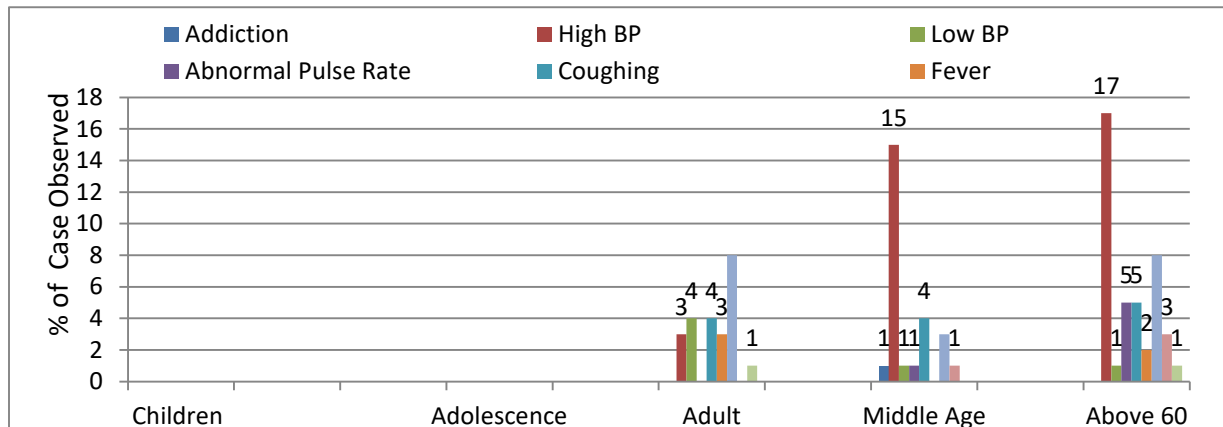
Coughing			2		4
Fever	1	1	2		6
Headache			2	2	10
Breathlessness					
Chest Pain			1		2
LOCATION 5 BAKSHIWALA					
Category of Disease	% of Cases Reported in Following Age Groups				
	Children	Adolescence	Adult	Middle Age	Above 60
Addiction					
High BP			9	25	23
Low BP					
Coughing		1	3	3	
Headache			2	14	10
Breathlessness					
Chest Pain					

Table 14 Summary of Health Checkup Done at Five Locations

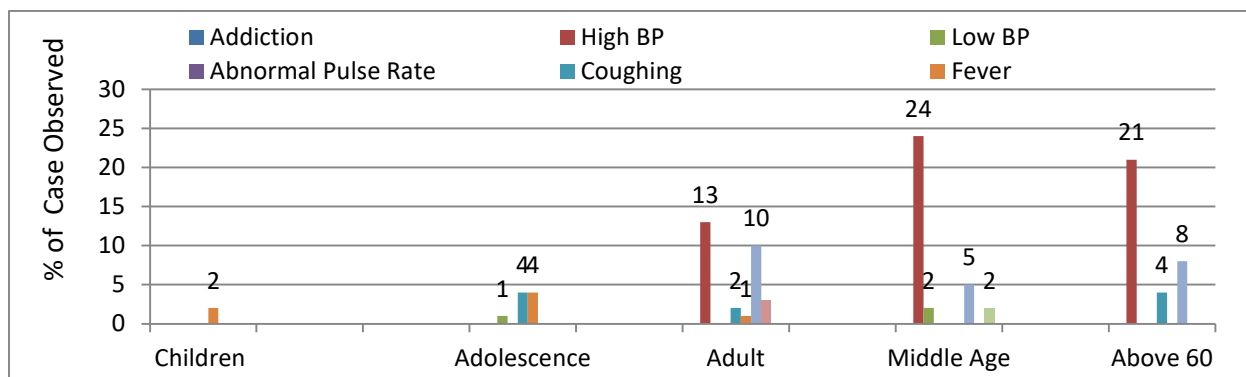
	Name of Location	Over Weight	Cough	High BP	Headache	Other Noted Health Problems
1	Surkalan Slightly impacted	28	13	35	19	Knee joint pain in elderly
2	Dabhali kalan Moderately impacted	29	10	58	23	-
3	Dadumajra Slightly impacted	16	2	28	10	Knee joint pain in elderly
4	Nalash Severely impacted	20	6	61	14	-
5	Bakshiwala Non-Impacted -Control)	23	7	57	26	-

3.7 Observation on Each Locations

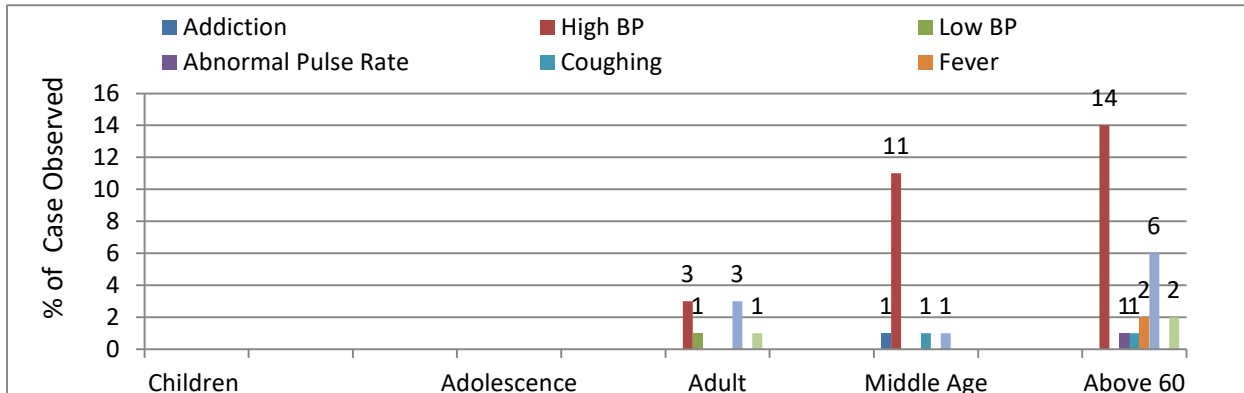
1. Surkalan: 3% of adult age and 2% of aged were suffering from fever. 4% adult, 4% middle age and 5% of aged were suffering from coughing. 3% of adult age, 15% of middle aged and 17% of elderly aged have high BP. 4% of adult age, 1% of middle aged and 1% of elderly aged have low BP. 1% of adult and 1% of aged were suffering from prominent chest pain. 8% of adult, 3 % of middle aged 8% of aged were suffering from headache. No people were suffering from asthma and COPD were reported.



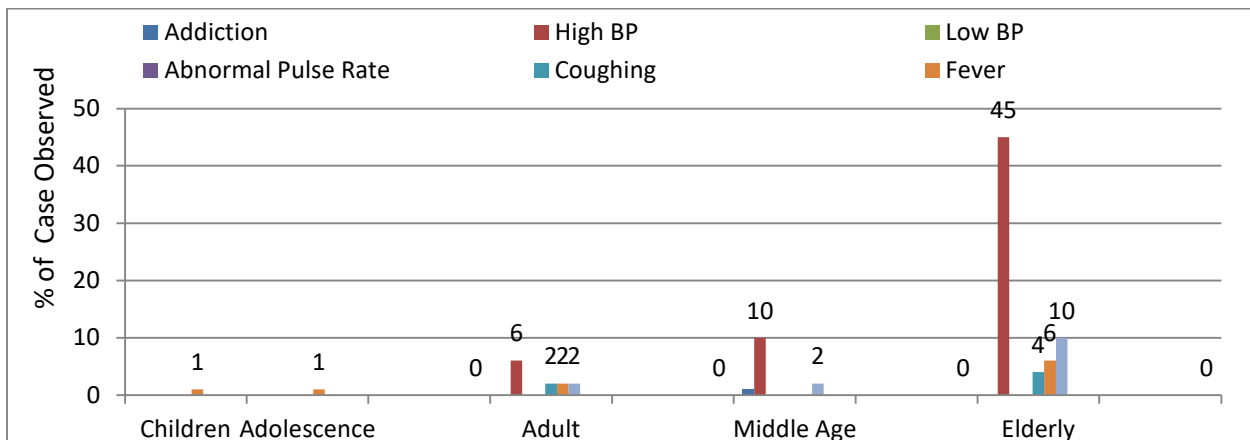
2. Dabhalikalan: 2% children, 4% adolescence and 1% of adult aged were suffering from fever. 4% adolescence, 2% adult and 4% of aged were suffering from coughing. 13% of adult age, 24% of middle aged and 21% of elderly aged have high BP. 1% of adolescence age and 2% of middle aged have low BP. 2% of middle age was suffering from prominent chest pain. 10% of adult, 5 % of middle aged 8% of aged were suffering from headache. No cases of asthma and COPD were reported.



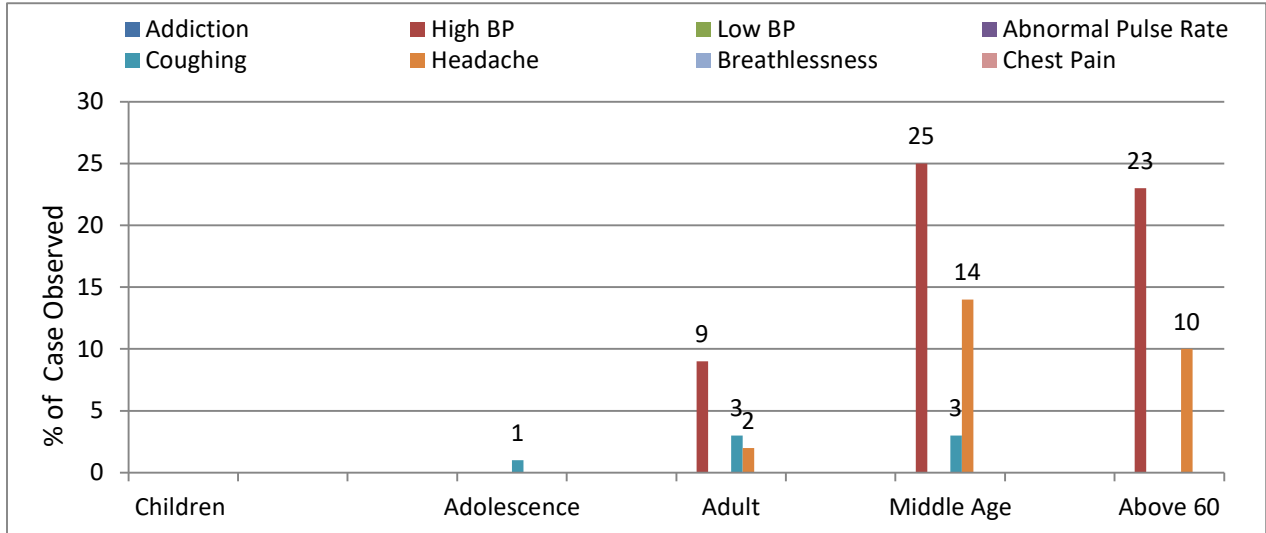
3. Dadumajra: 2% of aged were suffering from fever. 1% middle age and 1% of aged were suffering from coughing. 3% of adult age, 11% of middle aged and 14% of elderly aged have high BP. 1% of adult age have low BP. 1% of adult and 2% of aged were suffering from prominent chest pain. 3% of adult, 1 % of middle aged 6% of aged were suffering from headache. No people were suffering from asthma and COPD were reported.



4. Nalash: 1% children, 1% adolescence 2% adult and 6% of aged were suffering from fever. 2% adult and 4% of aged were suffering from coughing. 6% of adult age, 10% of middle aged and 45% of elderly aged have high BP. 1% of adult and 2% of aged was suffering from prominent chest pain. 2% of adult, 2 % of middle aged 10% of aged were suffering from headache. No cases of asthma and COPD were reported.



5. Bakshiwala: 1% adolescence, 3% adult and 3% middle age were suffering from coughing. 9% of adult age, 25% of middle aged and 23% of elderly aged have high BP. 2% of adult, 14 % of middle aged 10% of aged were suffering from headache. No people were suffering from asthma and COPD were reported.



CHAPTER 4 : SUMMARY & RECOMMENDATION

- a. Air Environment: The ambient air quality of the impacted and non-impacted areas is found to be well-within the prescribed National Standards.
- b. Water Environment: The ground water samples were found to meet the BIS standards at all locations. The surface water sample were found to meet the Best Designated Use Criteria 'C' of CPCB (fit for irrigation and drinking after conventional treatment).
- c. Soil Environment: Lead, nickel, arsenic, mercury, cobalt, cadmium, chromium levels were found to be within the normal level. Organic matter was found to be suffience, conductivity was found to be normal and pH was found to be moderately alkaline.
- d. Crops and vegetables: No heavy metals were detected in the crops and vegetable samples.
- e. Impact on Human Health: Human Health Survey: Human health profiling was done for 309 resident people of five villages, who are exposed to the existing environment for more than seven years. High BP was found in majority of male adults; Nalash - 61%, Dhabali - 58% Bakshiwala - 57% and Surkalan - 35%. Major complaints of elderly people in Surkalan and Dadumajra were related to pain in knee joints.

No cases of respiratory disorders linked to air pollution like Bronchitis, Asthma or Chronic Obstructive Pulmonary Disorder were found in the people. No disease or any chronic condition that could be related to air pollution / effluent discharges from coal based power plant has been observed in the population of the study area. None of the people in the study area reported any serious health problem such as Cancer, Gross Neurologic, Hepatic or Renal Damage and Congenital Abnormality.

Recommendation

Considering the fact that there is a growing international pressure against coal based thermal power plants because it is perceived that the emission and discharges are causative factors for some adverse human health impacts, the health study should be continuously done after a gap of two years or as suggested by the regulatory authorities.

APPENDIX - A

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APPENDIX-B

PHOTO GALLERY



HEALTH CHECKUP CAMP SURAL KALAN



HEALTH CHECKUP CAMP SURAL KALAN



HEALTH CHECKUP CAMP DABHALIKALAN



HEALTH CHECKUP CAMP DADUMAJRA



HEALTH CHECKUP CAMP NALAS



HEALTH CHECKUP CAMP BAKSHIWALA

APPENDIX-C

TEST RESULTS

EMTRC CONSULTANTS PRIVATE LIMITED

EMTRC Lab: Recognized by Ministry of Environment, Forests & Climate Change, Govt. of India

Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

Registered Office Tower 5 / 102 (FF), CWG village, NH24, Near Akshardham Temple, Delhi 110092

Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com, website: www.emtrc.in


TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 01/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Nalash
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.14	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	1120	-	-
3	Turbidity	NTU	APHA-2030B	1.5	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	790	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	210	200	600
6	Calcium as Ca	mg/l	APHA-4500B	60	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	14.6	30	100
8	Sulphate	mg/l	APHA-4500B	72	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	90	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	8.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.54	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.18	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.58	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.002	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


Authorized Signatory
MUKESH KUMAR

ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009

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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 02/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Surkalan
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.41	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	890	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	630	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	260	200	600
6	Calcium as Ca	mg/l	APHA-4500B	64	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	24	30	100
8	Sulphate	mg/l	APHA-4500B	58	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	72	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	7.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.45	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.12	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.48	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.002	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 03/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Dadumajra
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.14	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	850	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	590	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	210	200	600
6	Calcium as Ca	mg/l	APHA-4500B	56	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	17	30	100
8	Sulphate	mg/l	APHA-4500B	52	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	60	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	7.2	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.42	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.08	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.40	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.002	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 04/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Salempur
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.18	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	880	-	-
3	Turbidity	NTU	APHA-2030B	1.8	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	620	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	260	200	600
6	Calcium as Ca	mg/l	APHA-4500B	68	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	22	30	100
8	Sulphate	mg/l	APHA-4500B	65	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	80	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	10.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.24	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.22	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.82	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


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Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 05/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Dhabali
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.78	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	1980	-	-
3	Turbidity	NTU	APHA-2030B	2	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	1380	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	440	200	600
6	Calcium as Ca	mg/l	APHA-4500B	120	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	34	30	100
8	Sulphate	mg/l	APHA-4500B	112	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	280	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	12.5	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.32	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.26	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	1.08	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


Authorized Signatory
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Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 02/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Rangia
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.89	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	920	-	-
3	Turbidity	NTU	APHA-2030B	1.5	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	650	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	250	200	600
6	Calcium as Ca	mg/l	APHA-4500B	60	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	24	30	100
8	Sulphate	mg/l	APHA-4500B	72	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	85	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	9.2	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.40	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.12	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.75	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 07/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Harna
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	7.68	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	710	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	510	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	260	200	600
6	Calcium as Ca	mg/l	APHA-4500B	64	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	24	30	100
8	Sulphate	mg/l	APHA-4500B	62	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	70	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	8.2	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.14	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.22	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.85	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


Authorized Signatory
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Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com , website: www.emtrc.in


TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 08/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Haripur
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.08	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	980	-	-
3	Turbidity	NTU	APHA-2030B	1.5	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	690	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	210	200	600
6	Calcium as Ca	mg/l	APHA-4500B	60	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	14.6	30	100
8	Sulphate	mg/l	APHA-4500B	72	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	85	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	10.8	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	1.24	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.24	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.95	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


Authorized Signatory
MUKESH KUMAR

EMTRC CONSULTANTS PRIVATE LIMITED

EMTRC Lab: Recognized by Ministry of Environment, Forests & Climate Change, Govt. of India

Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

Registered Office Tower 5 / 102 (FF), CWG village, NH24, Near Akshardham Temple, Delhi 110092

Phone: 9810032481, 011 21211228, email: emtrcjkm@gmail.com, website: www.emtrc.in


TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 09/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Ground Water
Date of Sampling : 17-10-2022
Location of Sampling : Badalimai
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS	Acceptable Limit IS:10500:2012	Permissible Limit IS:10500:2012
1	pH	-	APHA-4500	8.12	6.5 to 8.5	No relaxation
2	Conductivity	µmhos/cm	APHA-2510	210	-	-
3	Turbidity	NTU	APHA-2030B	<1	5	15
4	Total Dissolved Solids	mg/l	APHA-2540B	150	500	2000
5	Total Hardness as CaCO ₃	mg/l	APHA-2340C	52	200	600
6	Calcium as Ca	mg/l	APHA-4500B	16	75	200
7	Magnesium as Mg	mg/l	APHA-4500B	2.9	30	100
8	Sulphate	mg/l	APHA-4500B	28	200	400
9	Chlorides as Cl	mg/l	APHA-4500B	35	250	1000
10	Nitrates as NO ₃	mg/l	APHA-4500	6.8	45	No relaxation
11	Fluoride as F	mg/l	APHA-4500D	0.42	1.0	1.5
12	Iron as Fe	mg/l	APHA-3111B	0.08	0.3	No relaxation
13	Copper as Cu	mg/l	APHA-3111B	<0.02	0.05	1.5
14	Lead as Pb	mg/l	APHA-3111B	<0.01	0.01	No relaxation
15	Manganese as Mn	mg/l	APHA-3111B	<0.05	0.1	0.3
16	Zinc as Zn	mg/l	APHA-3111B	0.25	5	15
17	Chromium	mg/l	APHA-3111B	<0.005	0.05	No relaxation
18	Nickel as Ni	mg/l	APHA-3111B	<0.01	0.02	No relaxation
19	Oil & Grease	mg/l	APHA-5520D	Nil		0.03
20	Cadmium as Cd	mg/l	APHA-3111B	<0.001	0.003	No relaxation
21	Mercury as Hg	mg/l	APHA-3111B	<0.001	0.001	No relaxation
22	Arsenic as As	mg/l	APHA-3111B	<0.001	0.01	0.05
23	Selenium as Se	mg/l	APHA-3111B	<0.01	0.01	No relaxation
24	Total coliform	MPN/100 ml	APHA-9230B	Nil	Nil	Nil


Authorized Signatory
MUKESH KUMAR

ENVIRONMENT MONITORING TRAINING & RESEARCH CENTRE

EMTRC Lab: F-66, Road-2, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad (UP) 201009

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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 10/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Surface Water
Date of Sampling : 17-10-2022
Location of Sampling : Bhakra Nagal
Sampling Procedure : Grab Sampling
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Test Methods	RESULTS
1	pH	-	APHA-4500	7.82
2	Conductivity	µmhos/cm	APHA-2510	260
3	Turbidity	NTU	APHA-2030B	1.5
4	Temperature	°C	APHA-4500	24
5	Total Dissolved Solids	mg/l	APHA-2540B	180
6	Total Hardness as CaCO ₃	mg/l	APHA-2340C	110
7	Calcium as Ca	mg/l	APHA-4500B	36
8	Magnesium as Mg	mg/l	APHA-4500B	4.8
9	BOD	mg/l	IS:3025 P44 1993 (RA 2003)	2.5
10	COD	mg/l	APHA-5220C	15
11	Sulphate	mg/l	APHA-4500B	24
12	Chlorides as Cl	mg/l	APHA-4500B	32
13	Nitrates as NO ₃	mg/l	APHA-4500	4.8
14	Fluoride as F	mg/l	APHA-4500D	0.38
15	Iron as Fe	mg/l	APHA-3111B	0.14
16	Copper as Cu	mg/l	APHA-3111B	<0.02
17	Lead as Pb	mg/l	APHA-3111B	<0.01
18	Manganese as Mn	mg/l	APHA-3111B	<0.05
19	Zinc as Zn	mg/l	APHA-3111B	0.32
20	Chromium	mg/l	APHA-3111B	<0.005
21	Nickel as Ni	mg/l	APHA-3111B	<0.01
22	Oil & Grease	mg/l	APHA-5520D	0.28
23	Cadmium as Cd	mg/l	APHA-3111B	<0.001
24	Mercury as Hg	mg/l	APHA-3111B	<0.001
25	Arsenic as As	mg/l	APHA-3111B	<0.001
26	Selenium as Se	mg/l	APHA-3111B	<0.01
27	Total coliform	MPN/100 ml	APHA-9230B	80


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TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 11/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Soil Sample
Date of Sampling : 17-10-2022
Sampling Procedure : SOP
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Nalash	Dhabali	Dadumajra	Surkalan	Salempur
1	pH (20% slurry)	-	8.35	8.18	8.26	8.32	8.16
2	Conductivity (20% slurry)	µmhos/cm	120	110	120	70	60
3	Organic Matter	%	0.82	0.88	0.90	0.80	0.78
4	Available Phosphorous	kg/ha	52	56	52	48	45
5	Available Nitrogen	kg/ha	174	180	176	168	162
6	Nickel as Ni	mg/kg	8.5	7.2	6.8	7.5	6.5
7	Copper as Cu	mg/kg	3.2	2.8	2.5	3.5	2.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.18	0.14	0.12	0.16	0.10
10	Iron as Fe	mg/kg	2.8	3.5	3.2	4.2	3.8
11	Zinc as Zn	mg/kg	22	26	18	32	26
12	Lead as Pb	mg/kg	ND	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND	ND


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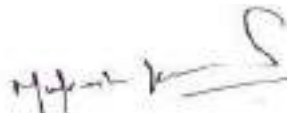
TEST REPORT

Date: 24-10-2022

Report No. : EMTRC/NPL - 12/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Soil Sample
Date of Sampling : 17-10-2022
Sampling Procedure : SOP
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

	Parameters	Unit	Harna	Rangia	Badali Majra	Haripur
1	pH (20% slurry)	-	7.90	7.98	7.96	8.38
2	Conductivity (20% slurry)	µmhos/cm	110	60	50	90
3	Organic Matter	%	0.92	0.80	0.78	0.88
4	Available Phosphorous	kg/ha	58	45	45	52
5	Available Nitrogen	kg/ha	180	172	170	182
6	Nickel as Ni	mg/kg	7.8	6.5	6.2	8.2
7	Copper as Cu	mg/kg	2.5	2.2	2.8	3.8
8	Cadmium as Cd	mg/kg	ND	ND	ND	ND
9	Chromium as Cr	mg/kg	0.12	0.10	0.14	0.18
10	Iron as Fe	mg/kg	2.5	2.8	2.2	3.5
11	Zinc as Zn	mg/kg	24	22	20	28
12	Lead as Pb	mg/kg	ND	ND	ND	ND
13	Arsenic	mg/kg	ND	ND	ND	ND
14	Mercury	mg/kg	ND	ND	ND	ND


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TEST REPORT

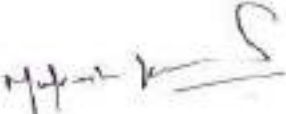
Date: 24-10-2022

Report No. : EMTRC/NPL - 12/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dhabali Village					
Parameter	Unit	Grass	Milk	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dhabali Village					
Parameter	Unit	Potato	Tomato	Onion	Chana Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


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TEST REPORT

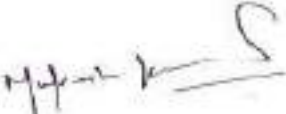
Date: 24-10-2022

Report No. : EMTRC/NPL - 13/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dadumajra Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Dadumajra Village					
Parameter	Unit	Potato	Tomato	Onion	Green Chilli
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


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TEST REPORT

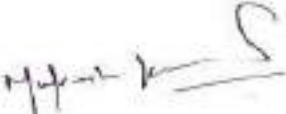
Date: 24-10-2022

Report No. : EMTRC/NPL - 14/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Nalash					
Parameter	Unit	Grass	Gram	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Nalash					
Parameter	Unit	Potato	Tomato	Onion	Green Chilli
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


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TEST REPORT


Date: 24-10-2022

Report No. : EMTRC/NPL - 15/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Salempur Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Salempur Village					
Parameter	Unit	Potato	Tomato	Onion	Tur Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


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TEST REPORT

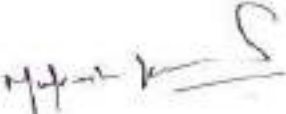
Date: 24-10-2022

Report No. : EMTRC/NPL - 16/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Surkalan Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Surkalan Village					
Parameter	Unit	Potato	Tomato	Onion	Chana Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


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TEST REPORT

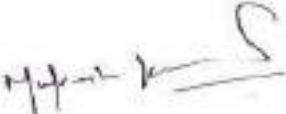
Date: 24-10-2022

Report No. : EMTRC/NPL - 17/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Rangia Village					
Parameter	Unit	Grass	Jowar	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Rangia Village					
Parameter	Unit	Potato	Tomato	Onion	Masood Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


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TEST REPORT

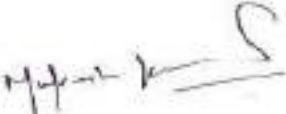
Date: 24-10-2022

Report No. : EMTRC/NPL - 18/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patial, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Harna Village					
Parameter	Unit	Grass	Milk	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Harna Village					
Parameter	Unit	Potato	Tomato	Onion	Green Chilli
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


Authorized Signatory
MUKESH KUMAR

EMTRC CONSULTANTS PRIVATE LIMITED

EMTRC Lab: Recognized by Ministry of Environment, Forests & Climate Change, Govt. of India

Gazette Notification SO: 3744 (E), 17-10-2019 Accredited by NABL - ISO/IEC 17025:2005 (TC-7376)

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TEST REPORT

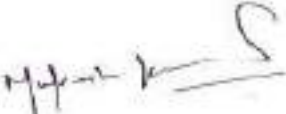
Date: 24-10-2022

Report No. : EMTRC/NPL - 19/2022
Issued To : Nabha Power Limited
Village Nalash, Tehsil Rajpura, District Patiala, Punjab
No. of Pages : 1 of 1
Type of Sample : Fruits & Vegetables
Date of Sampling : 17-10-2022 & 18-10-2022
Sample Collected & Brought to Lab by : EMTRC Staff

TEST RESULTS

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Haripur Village					
Parameter	Unit	Grass	Gram	Rice	Wheat
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND

Heavy Metal in grass, milk, Fruits, vegetable and other products collected from Haripur Village					
Parameter	Unit	Potato	Tomato	Onion	Chana Dal
Lead as Pb	mg/kg	ND	ND	ND	ND
Chromium as Cr	mg/kg	ND	ND	ND	ND
Nickel as Ni	mg/kg	ND	ND	ND	ND
Cadmium as Cd	mg/kg	ND	ND	ND	ND
Mercury as Hg	mg/kg	ND	ND	ND	ND
Arsenic as As	mg/kg	ND	ND	ND	ND


Authorized Signatory
MUKESH KUMAR

Annexure-18

Public Grievances Redressal Cell Minutes of Meeting



Minutes Of Meeting			
Date	22.02.2023	Time	14:30 Hrs
Subject	Public Grievances Redressal Cell		
Venue	Virtual (TEAMS)		
Participants	<ol style="list-style-type: none">1. Mr. R S Lall, Chairman2. Mr. Rajesh Kumar, Member3. Mr. Prateek Gupta, Member4. Mr. Amit Kumar Garg, Member5. Mr. Devdutta Sarma, Convener6. Mr. Gagandeep Singh Bajwa, Invitee		
Absent	None		

1. Mr. R S Lall, ascertained that the requisite quorum was present and called the meeting to order.
2. Mr. Devdutta Sarma apprised the committee members of the action undertaken regarding the issue of Wild Boars. The details are below: -
 - a. NPL had sent a letter on 14th Nov'22 to District Forest Officer (DFO), Patiala with a request to help NPL solve the Wild Boar problem by sending a team. The DFO had in turn written to Officer Forests (Wildlife), Parks and Protected Areas, Mohali on 29th Nov'22 for further guidance on the matter.
 - b. Mr. Gagandeep Singh, CSR Department & Mr. Gurjeet Singh, Administration Department, had visited the office of Chief Conservator (Wildlife) Mohali on 20th Feb'23 and met Mr. Arun Kumar, DFO on the subject matter. During the interaction, DFO shared that at present there are no specific guidelines which permits hunting inside the Power plant premises. However, there are certain establishments like Air Force Stations etc. which are exempted from the prevailing hunting guidelines. Considering the issue, they (DFO office) may put up case of obtaining similar exceptions for Power plants in the ensuing Wildlife Board meeting.
 - c. Further DFO stated that, for sending hunting teams inside the Plant premises or to explore other options for resolving this issue immediately, NPL may write to DFO Patiala along with the written request of surrounding villages panchayats.



- d) Inline with point No. c, it was decided that Mr. Gagandeep Singh shall obtain the written request letter from concerned panchayats.
3. Mr. R.S. Lall shared that few villagers were requesting for construction of speed breakers at key road junctions of Vill. Rai Majra and Jansua. So, considering the safety of the school children and daily commuters, it was decided that NPL can construct speed breakers at key locations in both the villages. The following actions were agreed to be undertaken:
- a. Mr. Gagandeep Singh shall obtain written request letters, stating the need of speed breakers, from concerned Panchayats.
 - b. Mr. Amit Garg to take up the construction work of speed breakers on priority. If required, he may keep the concerned PWD official informed of this work being undertaken by NPL.
4. As there were no other open points for discussion and as no other member had any other points for discussion, the meeting was concluded.