BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No.107 of 2023(SZ)

IN THE MATTER OF

Tribunal on its own motion Suo Motu based on the news item published in The New Indian Express dated 09.08.2023, under the caption "Huge pollution risk in 8 Km around NLC" and in The Times of India, Chennai Edition dated 09.08.2023 under the caption "Water near NLC full of Mercury".

AND

The Managing Director
NLC India Limited,
Chennai and Ors. ...Respondent(s)

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Dated at Chennai on this 27th day of November, 2023

Counsel for 1st Respondent

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AND

The Managing Director
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Chennai and Ors. ...Respondent(s)

REPORT FILED ON BEHALF OF THE 1ST RESPONDENT/NLCIL

The 1st Respondent, namely, M/s NLC India Limited in terms of Orders dated 28.08.2023 and 10.10.2023 of this Hon'ble Tribunal submits the following Report/Counter Statement with all supporting documents. However, the 1st Respondent with the leave of this Hon'ble Tribunal reserves its right to file additional Report/Counter Statement as and when directed by this Hon'ble Tribunal and also when the circumstances warrants for the same. The signatory to this Report/Counter Statement is an authorized Officer of the 1st Respondent.

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1. THE EXPLANATION AS TO THE CROPPING UP OF THE NEWS ITEMS IN THE DAILY NEWSPAPERS

i. At the outset, it is submitted that the news items reported/published in "The New Indian Express" dated 09.08.2023 under the caption "Huge pollution risk in 8 Km around NLC" and in "The Times of India", Chennai Edition dated 09.08.2023 under the caption "Water near NLC full of Mercury" are speculative in nature and unverified one at the instance of some vested interests. There is no bonafideness and/or an element of truth in the said publications/reporting of the said news items. The allegations in the said news items are unsubstantiated and it was reported with malafide and ulterior motives by some vested interests to sensationalize the issue without any basis.

ii. NLCIL specifically states that all the effluent parameters, ambient air quality, ground water quality and environmental parameters in and around Neyveli are well below the permissible standard limits prescribed by the Statutory authorities and they are periodically monitored by NLCIL and the Statutory authorities, namely, CPCB, TNPCB, MoEF& CC and other agencies. The news items alleging presence of "alarming content of Mercury in drinking water being discharged by NLC" which was published in the above dailies/newspapers were based on a self-styled and unverified reports allegedly prepared by a private NGO, namely, Poovulagin Nanbargal, along with Manthan Adhyayan Kendra, which have no authentication. The alleged reports are unauthenticated and unsupported by any materials. This alleged report was released to the Press by the said NGO at a private event organised at a Hotel in Chennai in the presence of certain political leaders and others as reported by

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several sections of the media the following day. This feature exposes that the said reports and news items are motivated, tainted with malafideness and unreliable.

iii. In response to the said unverified reports/news items, NLCIL had issued certain clarifications regarding the alleged reports in a subsequent Press release, which is attached hereunder for better appreciation of this Hon'ble Tribunal. Thus, it is apparent that the said news items are based on unverified reports of an individual NGO, deliberately exaggerated for publicity, caused damage to the goodwill/reputation of NLCIL and released to the press with an ulterior motive.

iv. At this juncture, it is pertinent to state that the news items published on the basis of alleged reports of NGO did not provide the test results of the alleged analysis to substantiate the alleged claims. For these reasons, it is evident that there are no truths in the said news items published in the daily newspapers.

v. It is pertinent to state that the mining activities and the activities in Thermal Stations do not involve in any chemical alterations, particularly, NLCIL is not using any heavy metals including mercury for any purpose during its activities. The presence of mercury in water even below detectable range around Neyveli may be due to geological formation and not due to any activities of NLCIL.

vi. Notwithstanding the above, following unassailable facts evidently establishes that the allegations contained in the said news items that 'mercury is

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present in the water around Neyveli at alarming level' are palpably false, incorrect, exaggerated and untenable.

2. HISTORY AND DETAILS OF M/s NLC INDIA LIMITED (NLCIL), NEYVELI

i. M/s NLC India Limited (shortly "NLCIL"), the 1st Respondent herein, is a "NAVRATNA" Government of India Public Sector Enterprise functioning under the control of Ministry of Coal. NLCIL was founded in the year 1956, following the discovery of lignite deposits in and around Neyveli, Tamil Nadu. NLCIL mainly engaged in mining lignite and generation of power. All these more than 60 years, NLCIL has been a pioneer amongst the Public Sector Enterprises in the Country in the energy sector, contributing to a major share in lignite production and significant share in thermal and renewable energy generation. As on today, NLCIL has set its footprints in PAN India mode in the States of Tamil Nadu, Rajasthan, Uttar Pradesh, Odisha, Jharkhand and Andaman & Nicobar Islands.

ii. NLCIL has also entered into renewable energy sector. Presently, NLCIL is operating 1370 MW of Solar Power Plants in various Districts of Tamil Nadu and Andaman & Nicobar Islands and 51 MW Wind Power Plant in Tirunelveli District of Tamil Nadu. NLCIL is the first CPSE to cross 1 GW capacity in Solar Power Generation in the Country. Now the Company has become a member of International Solar Alliance (ISA). NLCIL is aiming to achieve a total Renewable energy capacity of 6031 MW by 2030.

iii. It is submitted that NLCIL serves as an important source of power supply to the States of Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Telangana,

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Rajasthan and Union Territory of Puducherry. NLCIL, Neyveli currently operates 3 nos. of Open Cast Lignite Mines of total capacity of 32.5 Million Tonnes per Annum (MTPA) and 4 nos. of Thermal Power Stations with a total installed capacity of 3390 MW.

2.1 THE UNITS, PRODUCTS AND SERVICES OF NLCIL

i. The main activity of NLCIL in Neyveli is mining Lignite and generation of power using the mined out lignite. NLCIL is presently having lignite mining Units, named as, Mine - I, Mine - II & Mine - IA in operation in Neyveli, TamilNadu. The raw lignite is being utilized by the Thermal Power Plants of NLCIL situated in Neyveli and also sold to Small Scale Industries to use it as fuel in their production activities.

2.2 CHRONOLOGICAL ORDER OF COMMISSIONING OF VARIOUS UNITS OF MINES IN NEYVELI

i. The details and capacity of the respective Mines and the year of commissioning of the Mines are as follows: -

MINES	CAPACITY in MTPA (Metric Ton Per Annum)	Year of Commissioning
Mine I	10.5	1962
Mine II	15.0	1983
Mine IA	7.0	2003
Total	**32.5**	

ii. NLCIL is presently generating power in its four Thermal Power Stations, namely, Thermal Power Station - I Expansion (TPS - I Expansion), Thermal

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Power Station - II (TPS - II), Thermal Power Station - II Expansion (TPS - II Expansion) & Neyveli New Thermal Power Station (NNTPS) in Neyveli, Tamil Nadu. All the Southern states are beneficiaries of these power generation projects of NLCIL.

2.3 CHRONOLOGICAL ORDER OF COMMISSIONING OF THE ABOVE SAID THERMAL POWER STATIONS IN NEYVELI

i. The details and capacity of the respective Thermal Power Stations and the year of commissioning of the said Thermal Power Stations are as follows:-

Power Stations	Location of plant	Capacity (MW) (Mega Watt)	Year of Commissioning
TPS - II	Neyveli, TN	1470 (7x210)	1986-1993
TPS - I Expansion	Neyveli, TN	420 (2x210)	2002-2003
TPS - II Expansion	Neyveli, TN	500 (2x250)	2015
NNTPS	Neyveli, TN	1000 (2x500)	2019-2021
TOTAL		**3390**	

ii. It is submitted that in compliance with the commitment of India during COP - 26 & COP - 27 for Climate Change, NLCIL is expanding its Green Portfolio by installing Renewable Energy (Solar & Wind) Projects. At present, NLCIL renewable energy capacity is in the tune of 1421 MW and with a plan to expand Renewable Energy Capacity of 6 GW by 2030. NLCIL presently has the following capacity of Solar and Wind projects.

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NLCIL Green Portfolio	Capacity
Solar	1370 MW
Wind	51 W

2.4 THE COMPLIANCES OF STATUTORY REQUIREMENTS BY NLCIL

i. It is submitted that all the Units of NLCIL are having Environmental Clearance (EC), valid Consent to Establish (CTE), Consent to Operate (CTO) and Hazardous Waste Authorization (HWA), which are issued by Tamil Nadu Pollution Control Board (TNPCB) and the details are tabulated below for the better appreciation of this Hon'ble Tribunal: -

CTO APPLICABLE TO MINES

Mines	CTO
Mine – I	Valid Up to 31.03.2027 (PROCEEDINGSNO.T4/TNPCB/F.0058CUD/RL/CUD/A/2022)
Mine – IA	Valid Up to 31.03.2026 (PROCEEDINGS NO.T4/TNPCB/F.0059CUD/RL/CUD/A/2021)
Mine – II	Valid Up to 31.03.2027 (PROCEEDINGS NO.T4/TNPCB/F.0054CUD/RL/CUD/A/2022)

CTO APPLICABLE TO THERMAL POWER STATIONS

THERMAL STATIONS	CTO
TPS - I Expansion	Valid up to 31.03.2024 (Proceedings No.T2/TNPCB/F.0102CUD/RL/CUD/A/2023)
TPS –II	Valid upto 31.03.2027 (Proceedings No.T4/TNPCB/F.0066CUD/RL/CUD/A/2022)
TPS - II Expansion	Valid upto 31.03.2027 (Proceedings No.T2/TNPCB/F.0214CUD/RL/CUD/A/2022.)
NNTPS	Valid upto 31.03.2024 (Proceedings No.T2/TNPCB/F.0086CUD/RL/CUD/A/2023.

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Thus, it is evident that NLCIL has been complying with all the statutory requirements from time to time for all its Industrial Units without any deviation. NLCIL has been scrupulously following all the applicable provisions of the Environmental laws, rules made there under and the norms prescribed therein.

3. WATER ENVIRONMENT/ WATER QUALITY MANAGEMENT

3.1 POLLUTANTS NOTED/WATER POLLUTION

i. It is submitted that during the mining activities near water sources, which may affect the sources due to pollutants from mining activities enter the water sources via, ground water seepage and/or surface runoff water, which primarily consist of the suspended solids, namely, lignite and Overburden soil.

ii. In fact, the Thermal Power Plants do not involve in any chemical alterations to the water and the majority wastewater is from the boiler blow down, where pH & TDS are the major pollutants observed. In addition, waste water generated from vehicle washing and domestic waste also contributes to the pollution from the industrial areas.

iii. Based on the observations, the major pollutants, such as, the Bio-Chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Temperature, Oil & Grease etc., are being treated in Effluent Treatment Plants (ETPs), monitored continuously and the treated effluent parameters are well below the Tamil Nadu Pollution Control Board (TNPCB) specified limits. As such, NLCIL is strictly complying with all parameters in terms of applicable environmental laws.

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3.2 ENVIRONMENTAL CONTROL MEASURES IMPLEMENTED FOR PREVENTING/MINIMIZING WATER POLLUTION

i. It is submitted that as per the directions, NLCIL in order to control the suspended solids generated from the ground water seepage or surface runoff water, siltation wells and weirs are constructed along the Canal in & around the Mines. Waste water is treated in Effluent Treatment Plants (ETPs) and sewage is treated in Sewage Treatment Plants (STPs). The treated effluents is being utilized for afforestation, green belt development or reused for industrial purposes.

ii. In compliance to the TNPCB's directives, NLCIL is also continuously operating Sewage Treatment Plants (STPs) & Effluent Treatment Plants (ETPs) provided at appropriate locations in the industries to treat the waste water generated and treated effluent is being utilized for greenbelt development or reused for industrial purposes.

3.3 MONITORING OF WATER QUALITY

i. It is submitted that all the above ETP's and STP's are being monitored on monthly basis by NLCIL and TNPCB.

ii. The treated water & effluent samples are regularly tested in Advanced Environmental Lab/TNPCB, Cuddalore.

iii. The Online Effluent Monitoring Systems are also installed by the Industries and is connected to the TNPCB's Water Quality Watch.

iv. The results of the parameters monitored are well below the TNPCB specified and/or permissible limits.

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v. The latest result of treated effluent discharge parameters as measured through Advanced Environmental Lab/TNPCB, Cuddalore for all the industrial units of NLCIL in Neyveli are given in the following table for the better appreciation of this Hon'ble Tribunal: -

Unit Name	pH	TSS (mg/L)	TDS (mg/L)	Chlorides (mg/L)	Sulphates (mg/L)	COD (mg/L)	BOD (mg/L)	% Na
CPCB effluent Discharge standards	**5.5 – 9.0**	**100**	**2100**	**1000**	**1000**	**250**	**30**	-
Mine I	7.98	14	246	125	32	48	9.8	18.25
Mine IA	7.08	16	250	115	72	40	8.2	5.61
Mine II	8.10	12	346	110	62	32	10	7.75
TPS I Exp	7.10	8	380	195	60	56	5.6	9.08
TPS II	6.90	100	330	115	25	40	12	5.66
TPS II Exp	7.90	8	1568	870	112	114	26	16.03
NNTPS	7.51	16	842	325	122	80	20	6.34

vi. In addition to these measures, Centre for Applied Research and Development (CARD) NABL Accredited Laboratory of NLCIL is also carrying out water quality monitoring as per the statutory requirement of the Industrial Units. Thus, it is evident from above data furnished by the 1st Respondent that the news items published are unsubstantiated and motivated one. There are no veracity in the allegations contained in the said news items/reports and they are self-serving allegations made with an ulterior motive without any substance.

4. <u>AIR ENVIRONMENT IN NEYVELI AND THE SURROUNDING AREAS/AIR QUALITY MANAGEMENT</u>

i. It is submitted that during the activities of mining of lignite and generation of power using the mined out lignite, the following parameters are noticed from the Units of Mines and Thermal Power Stations: -

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SN	Industry	Major Pollutants Emitted	Source of Pollution
1.	Mining	Particulate Matter (PM_{10} & $PM_{2.5}$)	Lignite Mining, Transportation, Lignite Storage, Haul roads
2.	Thermal	Particulate Matter (PM_{10} & $PM_{2.5}$) Sulphur Dioxide (SO_2) Oxides of Nitrogen (NO_x)	Lignite Combustion

4.1 AIR QUALITY MONITORING

In order to ensure the compliances to the statutory norms, TNPCB regularly (twice in a year) conducts half yearly survey to monitor the Ambient Air Quality (AAQ) & Stack Emissions Monitoring in Mines & Thermal Units. The results of the TNPCB for the industrial units in Neyveli are well within the MoEF&CC/TNPCB Specified Standards and the latest results are provided below: -

i. It is submitted that in order to ensure the compliances to the statutory norms, the TNPCB regularly (twice in a year) conducts half yearly surveys to monitor the Ambient Air Quality (AAQ) & Stack Emissions Monitoring in Mines & Thermal Units. The latest results of the TNPCB for the Industrial Units in Neyveli are well below the permissible limits and are provided below for the better appreciation of this Hon'ble Tribunal: -

Mines

Unit	PM_{10}	$PM_{2.5}$	SO_2	NO_x
CPCB Norms For Mines Core Zone	**500 µg/m³**	**250 µg/m³**	**120 µg/m³**	**120 µg/m³**
Mine I	230-264	32-56	14-32	15-38
Mine IA	232-268	34-58	14-30	15-38
Mine II	230-266	30-54	14-34	15-38

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Thermal Power Stations

Stack emissions

Parameters		TPS I Exp. mg/Nm3	TPS II mg/Nm3	TPS II Exp. mg/Nm3	NNTPS mg/Nm3
PM	Test results	51.54	55-58	37	52
	Norms	**100**	**100**	**50**	**30**
SO_2*	Test results	1433.16	1442-1448	741	1348.5
	Norms	**600**	**600**	**600**	**100**
NO_x**	Test results	400.68	476-478	110	488.4
	Norms	**600**	**600**	**450**	**100**

ii. It is submitted that in order to comply with the SOx standards, Flue Gas Desulpurization (FGD) Plant installation is under progress. In fact, the installation of FGD was commenced in 2019 as per the time limit prescribed by MoEF&CC and it is in progress. NLCIL will comply the same within the specified timelines.

iii. Further, for NOx of New Thermal Units (NNTPS), Joint Committee of CPCB and CEA is carrying out study to revise the norms for TPPs operating at partial/technical minimum loads.

iv. It is submitted that all Thermal Power Stations Stack Emissions (Continuous Stack Emission Monitoring System - CEMS) are connected to TNPCB CARE AIR CENTRE and is being continuously monitored to ensure compliances.

v. In addition, the fugitive emissions in Thermal Power Plants are also regularly monitored. The results of the parameters monitored are well below the specified permissible limits. Latest results are mentioned below: -

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FUGITIVE EMISSIONS

Parameters	Applicable Norms (24 Hrs) µg/Nm3	TPS I Exp µg/Nm3	TPS II µg/Nm3	TPS II Exp µg/Nm3	NNTPS µg/Nm3
PM_{10}	100	48-79	44-80	45-72	52-74
$PM_{2.5}$	60	46-53	32-48	38-48	40-48
SO_2	80	28-38	40-68	24-40	30-38
NO_x	80	30-40	42-70	26-42	34-40

**All parameters are well below the permissible limits specified National Ambient Air Quality Standards (NAAQS).

vi. In addition to the above, TNPCB has directed the INDUSTRIAL UNITS of NLCIL to install Continuous Ambient Air Quality Monitoring System (CAAQMS). In compliances to the same, NLCIL has installed 7 Nos. of CAAQMS in & around the Industrial Units of NLCIL, Neyveli, which are connected to TNPCB's CARE AIR CENTRE. Installation of 2 Nos. of additional CAAQMS in and around the Villages are also under progress. The real time monitoring results of the CAAQMS are also well below the CPCB prescribed National Ambient Air Quality Standards (NAAQS). The details of the locations of the CAAQMS are provided below for the appreciation of this Hon'ble Tribunal: -

SN	Station	Location	Status
1.	Mine-I	Block 8	In Operation & connected to TNPCB/ CPCB.
2.	Mine-IA	Vadakuthu	Under progress
3.	Mine-II	Administrative Office	In Operation & connected to TNPCB/CPCB.
4.	TPS-II Exp/Mine-I	Block 6	In Operation & connected to TNPCB/CPCB.
5.	TPS-II	Inside TPS-II premises	In Operation & connected to TNPCB/CPCB.
6.	TPS-II Exp.	Inside TPS-II Expn.premises	In Operation & connected to TNPCB/CPCB.
7.	Mine-II	Substation near Mudhunai	Under progress
8.	NNTPS	Inside NNTPS premises	In Operation & connected to TNPCB/CPCB.

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9.	CARD	Inside CARD	In Operation & connected to TNPCB/CPCB.

vii. It is submitted that as per the directions of TNPCB & CPCB, the Display of CAAQMS parameters & Environment information is also completed at prominent places & entrances of the industries for public viewing.

viii. In addition to the above stated statutory compliances, to strengthen the internal monitoring, NLCIL has established its own Centre for Applied Research & Development (CARD), which is also carrying out manual monitoring of Ambient Air Quality in Township & surrounding Villages regularly through MoEF&CC accredited 3rd Party Lab and Core Zone monitoring in mines also. The monitoring results of the manual AAQ monitoring are also well below the CPCB prescribed National Ambient Air Quality Standards (NAAQS).

4.2 COMPLIANCES BY NLCIL TO THE NORMS/ STANDARDS/ GUIDELINES/ DIRECTIONS PRESCRIBED BY MOEF & CC/CPCB/TNPCB

i. It is submitted that in order to comply with the Ambient Air Quality Norms/Emission Standards prescribed by MoEF& CC, CPCB & TNPCB, following are the various environmental control measures strictly adopted/implemented by NLCIL, namely,

a. Dust Suppression System (DSS) during lignite mining & transportation.

b. Stock Pile Dust Suppression System (SPDS) at Lignite Storage Yards.

c. Three layers of greenbelt development surrounding the mining area, lignite storage area and bunker Areas. The greenbelt around the lignite mining and storage is acting as a wind barrier to prevent the spreading of fugitive dust.

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d. Continuously operating Air Pollution Control (APC) equipment, such as, Agglomerated Dust Suppression System (ADSS), Water Jets, Water Sprinkler Systems etc., to control the fugitive emissions.

e. Electrostatic Precipitators (ESPs) of more than 99% efficiency have been installed & continuously being operated in all the Thermal Power Stations of NLCIL to remove the Particulate Matter (Ash) from the outgoing flue gas.

f. In addition, to ensure compliance to the MoEF&CC emission Norms, the implementation of Flue Gas Desulphurization (FGD) is under progress in Thermal Power Stations.

g. **Greenbelt Development - In order to control the dust emission from the Industrial activities, NLCIL has developed extensive Greenbelt in & around its Industrial units and in its Township area. All the industrial units have developed 33% greenbelt plantation in compliance to the EC/CTO conditions.**

5. Fly Ash Management

5.1 Fly Ash Notification and Demand for Fly Ash

i. It is submitted that according to the Fly Ash Notification dated 31.12.2021, it has been mandated that "all TPPs have to comply 100% utilization of the fly ash". All the Thermal Units of NLCIL in Neyveli, namely, TPS - II, TPS - I Expansion, TPS - II Expansion and NNTPS are achieving 100% fly ash utilisation since, 2013 by supplying the generated fly ash to brick manufacturers, cement manufacturers, etc., strictly complying with the guidelines of MoEF&CC's Fly Ash Notifications. The fly ash is being utilised directly from the ash silos

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through ash bulkers & closed tanker lorries by the end users. NLCIL is ensuring fugitive emission control by providing wind barriers, adequate water spraying system & greenbelt development complying with the Environmental conditions.

ii. Understanding the generation and characterizations of fly ash, which provides a basis for the alternative uses of fly ash in construction & its allied activities has increased the demand for fly ash in recent times. The availability of resource & the government regulations has also contributed significantly to the increase in demand of fly ash. This demand has made Fly Ash a valuable commodity.

iii. It is submitted that the Ash Pond in NLCIL is used only during emergency situations, such as, unavailability of transport during periods, such as, Bharath Bandh, Strikes, etc.,& natural calamities, COVID lockdown, etc., However, the ash in NLCIL's ash pond is also being utilised by supplying to NHAI and other users in compliance with MoEF&CC's Fly Ash notifications.

5.2 <u>NLCIL's Compliances</u>

i. All the Units of NLC India Limited (viz., TPS I Exp, TPS II, TPS II Exp& NNTPS) are achieving 100% ash utilization since 2013 by supplying the generated ash to brick manufacturing companies, cement manufacturing companies, etc., complying with the guidelines of MoEF& CC Fly Ash Notifications.

ii. Complying with MoEF& CC Fly Ash Notifications, Ministry of Power (MoP) Office Memorandums, NLCIL, Neyveli Thermal Power Plants are disposing Fly Ash through e-auction transparent bidding process by MSTC and achieving

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100% fly ash utilization. The details of Fly Ash generation and Utilization for NLCIL, Neyveli TPPs during FY 2022-23 are given below:

		TPS I Exp	TPS II	TPS II Exp	NNTPS
Generation	Total Ash (Dry Fly Ash + Bottom Ash)	2,25,737.8	7,74,991.2	1,42,172	4,53,890
	Total Dry Fly Ash	1,65,956.2	3,36,742.3	1,12,150	4,07,195
	Total Bottom Ash	59,781.6	4,38,248.9	30,022	46,695
Utilization	Total Dry Fly Ash	1,65,956.2	3,36,742.3	1,12,150	4,07,195
	Total Bottom Ash	59,781.6	4,38,248.9	30,022	46,695
	% of Total Ash Utilization	**100%**	**100%**	**100%**	**100%**

iii. In order to dispose the ash from ash pond (legacy ash) complying with the MoEF& CC Notifications, based on the NHAI requests, NLCIL is issuing ash from ash pond (legacy ash) to NHAI, for road construction of National Highway Projects, Tamil Nadu.

6. Eco-Land Restoration Practices

6.1 Land Reclamation & Greenbelt Development:

i. NLCIL always acknowledges the inseparable relationship between sustainable growth and environmental protection, including the preservation of biodiversity. Thus, the economic development will always consider sustainable development along with ecological preservation. NLCIL is actively engaged in reclaiming the areas that have been mined out and the overburden dumps. The external overburden dumps, which were created during the initial mining phase, are being transformed into vegetative areas suitable for habitation. Out of the

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total mined out area of 5907 Hectares, 2773 Hectares have already been reclaimed, and afforestation efforts have been carried out on 2975 Hectares of the reclaimed land. Overall NLCIL has planted around 30 Lakh trees since its inception creating a lush green eco-habitat in Neyveli.

6.2 PROTECTION OF HABITATS

i. In addition to reclamation efforts, NLCIL has also established eco –parks in Neyveli Mines. These parks are accompanied by extensive afforestation activities, including the creation of artificial lakes spread across Mine - I, Mine-IA, and Mine-II. These parks with artificial lakes apart from acting as Ground Water Recharge Points also possess significant biological value due to its diverse range of plants and animal species, contributing to the rich flora and fauna in the area.

ii. In Neyveli, avifaunal study was conducted which revealed a remarkable blend of indigenous and migratory bird species. Throughout the study, a total of 107 bird species were recorded and documented, with 77 species belonging to terrestrial birds and 30 species to wetland birds. These species represented a diverse range of avifaunal families, including 42 families of terrestrial birds and 17 families of wetland birds.

iii. However, it is worth point out that three bird species were classified as "near threatened". The presence of these near threatened species underscores the conservation efforts undertaken to ensure their continued existence and to protect the habitats.

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Order	Family	Common name	Scientific name	IUCN status
Suliformes	Anhingidae	Darter or Snake Bird 	Anhinga melanogaster	Near Threatened (NT)
Pelecaniformes	Threskiornithidae	Oriental White Ibis 	Threskiornismelanocephalus	Near Threatened (NT)
Ciconiiformes	Ciconidae	Painted Stork 	MycteriaLeucocephala	Near Threatened (NT)

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7. OVERALL NLCIL'S ENVIRONMENTAL PROTECTION MEASURES & MEDICAL AIDS EXTENDED TO THE PUBLIC

7.1 Overview of NLCIL's Environmental Protection Control measures

- Air Environment of this report, cited above, Regular monitoring of the Ambient Air Quality by TNPCB, are being conducted periodically to ensure the efficiency of the emission control measures and the consolidated results reveals that all the parameters of Ambient Air Quality is well below the permissible limits.
- CAAQMS are also installed to monitor the real time Ambient Air Quality as recommended by TNPCB. In addition, regular monitoring (alternate days) of Ambient Air Quality in & around the industrial premises in Township & surrounding Villages, is being carried out by in-house NABL accredited lab – CARD and through accredited 3rd party lab. The ambient air quality values monitored are well below the permissible limits.
- Vide Water Environment of this report cited above, as per the directives of TNPCB, NLCIL has provided the required Sewage Treatment Plants & Effluent Treatment Plants and is ensuring its continuous operation to meet the standards prescribed. The quality of treated effluent is being regularly monitored by TNPCB. 3rd Party analysis of water samples are also being carried out as per the EC/CTO conditions stipulated and the same are being submitted to TNPCB & MoEF&CC. The effluent parameters are well below the permissible limits.
- Further ground water samples from the bore well/dug wells/tube wells in and around Mines/Thermal Power Stations are regularly analysed at MoEF& CC approved laboratories viz., Tamil Nadu Water supply and

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Drainage Board State level water testing laboratory & King Institute – Water analysis Laboratories, Department of Public Health and Preventive Medicines, Govt. of Tamil Nadu. The results reveal that, all the parameters are within the permissible limits. These results are being submitted to MoEF& CC as half yearly compliance reports.

- NLCIL is also utilizing 100% the fly ash generated by supplying generated ash to Brick Manufacturing Companies, Cement Manufacturing Companies, etc., complying with the guidelines of MoEF&CC Fly Ash Gazette Notifications. Monthly Ash Generation & Utilization reports are uploaded in CPCB Ash Portal and Annual Ash Generation & Utilization Reports are submitted to MoEF&CC and Central electricity Authority (CEA).
- Comprehensive study is proposed to be carried out once in every 3 years and the latest report on Comprehensive study on combined effects due to all the power plants operated by NLCIL and Combined Water Management Study including all Thermal Power Plants, Mines and Township was carried out by M/s Annamalai University. The report has analyzed the effluent treatment facilities and has found no Exceedance in the limits. The Comprehensive study report was submitted to TNPCB also.
- The detailed analysis of environmental parameters conducted through reputed institutions for Environmental Impact Assessment (EIA) of new projects (based on which the Environmental Clearances are granted by MoEF&CC) which also discloses that the water, soil & ambient air

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parameters are well below the permissible limits. The EIA reports are submitted to MoEF&CC.

- Besides, a study on bio-accumulation of heavy mineral in vegetables crops grown in the mines overburden dump area was undertaken during 2021. Samples of (collected from three lignite mine dump area of NLCIL mines), varied vegetables, were subjected to heavy metals analysis viz. Lead (Pb), Copper (Cu), Arsenic (As), Nickel (Ni), Chromium (Cr), Cadmium (Cd), and Mercury (Hg). The analysis work was carried out through MoEF&CC approved laboratory at Chennai. From the results, it is observed that all the values are Below Detection Limit (BDL).
- As part of compliance to Environmental conditions, recently (during 2023) water samples were collected by NLCIL from Mine-II outlet, Walajah tank inlet and Walajah tank outlet (down steam) were analysed at Government NABL Accredited Testing Laboratories, Chennai. All the quality parameters are well below the permissible limits.
- As per the directives of the TNPCB, NLCIL has carried out various studies through accredited 3rd party agencies undertaking tests from various sources of water, air & soil through authorized laboratories also. The results depicts that the parameters such as Mercury, Selenium etc., are well below the permissible limits. The report was also submitted to TNPCB.
- It may also be noted that Centre for Applied Research & Development (CARD) a NABL accredited lab equipped with Mercury analyser and is

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periodically testing the mercury levels in the water & stack emission and the results are well below the permissible levels.

7.2 An Overview of NLCIL's Medical Aids Extended

- With regard to the health issues in the particular Village (Vadakkuvellore) as stated in the report, it is to inform that medical camps are being conducted periodically for the nearby villages by NLCIL. Incidentally, on 26.02.2023, a medical camp was also conducted in the same village Vadakkuvellore and 913 persons attended the medical camp and no abnormal health issues were noted.

- NLCIL Hospital is open to public, all emergency services and outpatient services are provided at free of cost. It is also to note that for the surgical cases identified in the medical camps, surgery or & post-operative treatment is done at free of cost. The details of the people other than NLCIL employees who were treated at NLCIL hospital for the past three years is as follow:

Sl. No	Year	No. of people excluding NLCIL employees, Indcoserve, Contract workmen given treatment in NLCIL GH
1	2020-21	44702
2	2021-22	31746
3	2022-23	98159

- Apart from the free OP treatment to the common public at NLCIL Hospital, as a socially responsive PSU, NLCIL is rendering service to the common public in the villages around Neyveli, through special medical

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camps, with an aim to supplement health care services provided to the project affected Villages.

- Multi-disciplinary team approach is adopted to provide a holistic health screening experience to the beneficiaries. Disciplines of General Medicine, Obstetrics & Gynecology, Pediatrics, Ophthalmic, Dermatology, ENT, Chest medicine, Ayurveda Medicine, Ortho, Physiotherapy, and Dental from the clinical team provide comprehensive screening and wider coverage of treatment for women, children and elderly population.
- Also, it is proposed to conduct 10 Medical Camps to the common public in the villages around Neyveli, (project affected villages) at the estimated expenditure of Rs 100 lakhs and upgrade the nearby PHC's by providing health care equipment for the value of Rs 15 lakhs for the year 2023-24.

8. PRESENT SOIL & WATER QUALITY STATUS

i. Although NLCIL has ensured compliance to the Environmental norms & conditions stipulated by various statutory bodies, the wild allegations has been raised against NLCIL based on the private NGO report without any basis. In this regard, in order to warrant the status of water & soil quality, NLCIL has collected samples in the same locations as specified in the said NGO Report and had it analyzed through in-house NABL accredited laboratory in Centre for Applied Research & Development (CARD). In addition, NLCIL had collected additional Ground water, Surface water, soil and Ash samples in and around of NLCIL (within 2 km, 5 km, 10 km and 15 km range) to assess the environmental quality.

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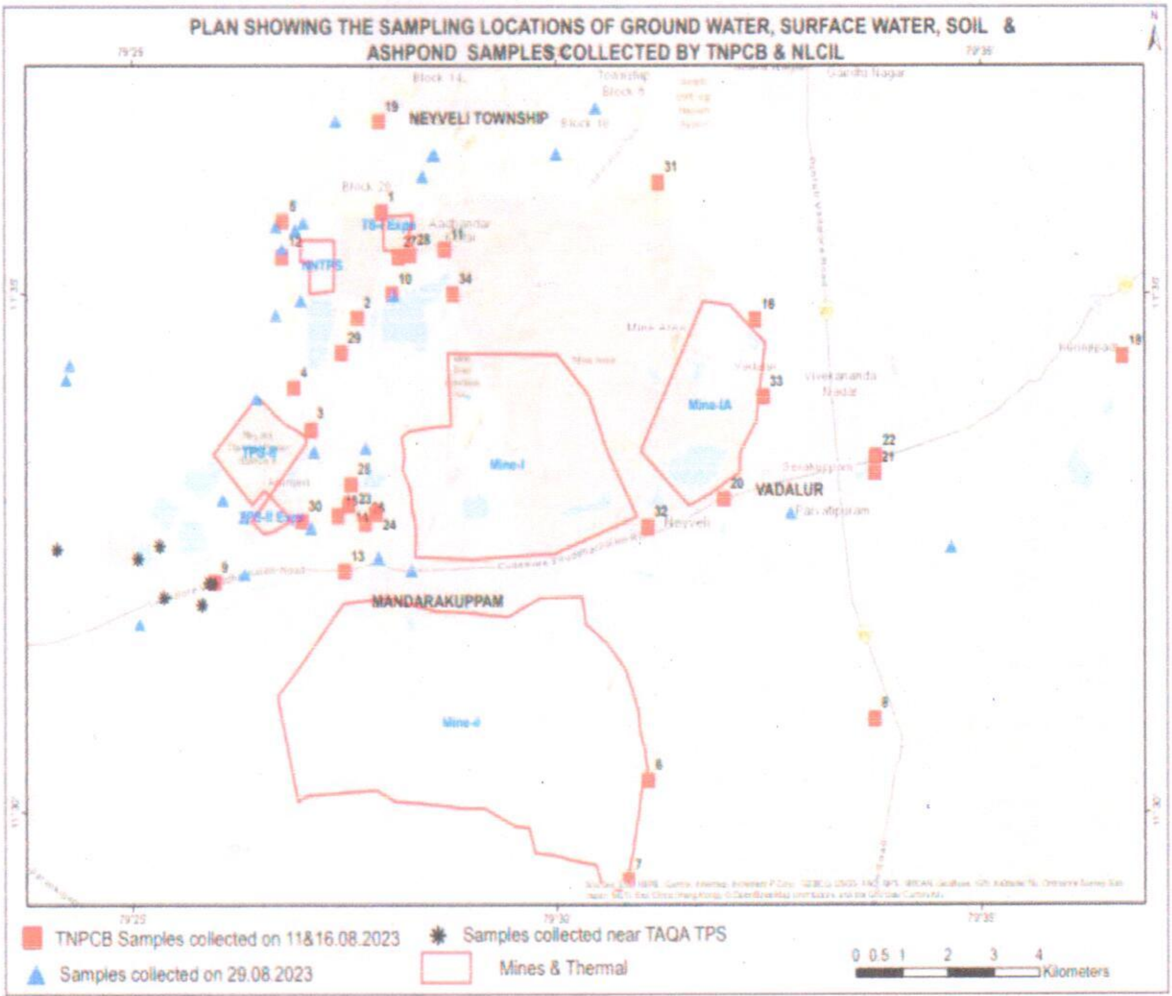
Total 27 parameters are being analyzed for Surface Water & Ground Water (including heavy metals) and 24 parameters are being analyzed for Soil samples.



The locations of the samples is provided in the map above:

The detailed results of analysis and inference from the analysis reports of the samples are briefed as follows: -

8.1 SURFACE WATER

i. Based on the said report, the surface water locations were identified and the samples were collected scientifically in sealed containers and were tested in

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NABL accredited laboratory in CARD. A total of 13 Nos. of samples were collected and sent for analysis. The results are tabulated below:

ID No as per NGO Report	Location	Aluminium (mg/L)	Chromium (mg/L)	pH @ 25°C	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Iron (mg/L)	BOD for 3 days @ 27°C (mg/L)	COD (mg/L)	Dissolved Solids (mg/L)	Total Alkalinity (mg/L)	Total Hardness as $CaCO_3$ (mg/L)	Sulphides as S (mg/L)	Sulphates as SO_4 (mg/L)
R1 L-1 R2-S6	PCS Stores Discharge	2.333	0.0044	6.57	12.9	2.9	5.8	1.8	6.50	37.0	96	32	44.4	BDL	12
R1 L-2 & R1 L-3 R2-S5	Discharge from NNTPS	1.138	0.0029	6.4	111.5	36.3	177.9	4.0	0.9	18.5	1203	39	428.2	BDL	450
R1 L-5 R2-S10	Discharge from TPS II	0.605	0.0012	6.85	147.1	11.8	140.5	1.6	13.5	37.0	1055	17.2	416.1	BDL	647
R1 L-13	Artificial lake North of TPS II	0.0002	0.0007	6.61	100.2	14.7	97.5	0.1	5.3	37.0	771	13	311.1	BDL	402
R1 L-6	Valyamadevi	9.745	0.0167	6.94	75.9	28.4	83.08	2.64	14.1	31.7	623	86	307	BDL	549
R1 L-8	Mine II Discharge - Paravanar River	1.023	0.0082	7.04	80.8	32.4	111.1	1.8	5.2	63.5	683	120	335.3	BDL	434
R1 L-10	Walaja Lake	3.9	0.009	7.53	79.2	33.4	145.2	0.8	5.2	31.7	670	159	335.3	BDL	434
R1 L-7	Mine I Discharge	0.107	0.0001	7.70	48.5	16.7	44.1	0.3	9.9	31.7	348	60	189.9	BDL	174
R1 L-4 R2-S7	Discharge from TPS I	0.113	0.0013	6.55	19.4	5.9	22.4	0.3	1.5	31.7	169	40.9	72.7	BDL	38
R2 S-2	Romapuri - Vadakkuvellur	7.921	0.0102	8.12	103.4	19.6	152.6	1.3	1.2	20.0	926	51.6	339.4	BDL	369
R2 S-3	Vadakkuvelore pond - Near Sivan koil	0.0002	0.0001	7.48	121.2	34.4	188.5	0.3	10.4	40.0	1152	86	444.4	BDL	528
R1 L-16	Kanjamanadanpettai Pond Water	10.987	0.0154	6.38	5.7	4.9	12.6	8.2	14.7	20	96	22	34.3	BDL	26.0
R2 S-1	Mine I Outlet - Venangeni	3.371	0.0063	4.7	79.2	27.5	43.6	1.1	9.0	60	458	12.9	311.1	BDL	365.9
	Norms	-	-	5.5-9.0	-	-	-	-	30	250	2100	-	-	2.0	1000

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ID No as per NGO Report	Location	Conductivity @ 25°C (Micro ohms)	Chlorides (mg/L)	Potassium (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Boron (mg/L)	Arsenic (mg/L)	Turbidity	Cadmium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Zinc (mg/L)
R1 L-1 R2-S6	PCS Stores Discharge	116	13	4.25	0.18	0.055	BDL	0.013	225	BDL	0.006	0.008	0.027	0.0001	0.065
R1 L-2 & R1 L-3 R2-S5	Discharge from NNTPS	1578	302	4.36	0.7	1.235	0.092	0.0012	110	BDL	0.004	0.007	0.046	0.0033	0.039
R1 L-5 R2-S10	Discharge from TPS II	1271	116	2.5	0.4	0.9	0.187	0.0001	82	BDL	0.003	0.007	0.05	0.0016	0.027
R1 L-13	Artificial lake North of TPS II	990	89	4.74	0.42	0.623	0.123	0.0001	12	BDL	0.004	0.006	0.025	0.0019	0.0014
R1 L-6	Valyamadevi	884	64.4	4.3	0.86	0.58	0.02	0.013	1020	BDL	0.012	0.004	0.103	0.0018	0.132
R1 L-8	Mine II Discharge - Paravanar River	920	70	2.27	0.89	0.256	0.002	0.0003	404	BDL	0.003	0.003	0.064	0.0021	0.073
R1 L-10	Walaja Lake	1060	93	2.27	0.89	0.256	0.032	0.0014	488	BDL	0.004	0.003	0.034	0.0025	0.014
R1 L-7	Mine I Discharge	492	30	1.55	0.64	0.031	0.064	0.0002	13.8	BDL	0.006	0.002	0.014	0.0011	0.014
R1 L-4 R2-S7	Discharge from TPS I	209	19	1.14	0.28	0.015	0.010	0.0011	10	BDL	0.001	0.003	0.014	0.0007	0.016
R2 S-2	Romapuri - Vadakkuvellur	1248	171	3.92	0.64	0.18	0.173	0.0037	244	BDL	0.011	0.002	0.048	0.0028	0.491
R2 S-3	Vadakkuvelore pond - Near Sivan koil	1619	267	6.34	0.6	0.021	0.181	0.0004	8.0	BDL	BDL	0.002	0.002	0.004	0.014
R1 L-16	Kanjamanadanpettai Pond Water	117	14	8.34	0.13	0.246	BDL	0.007	801	BDL	0.02	0.002	0.022	0.0007	0.02
R2 S-1	Mine I Outlet - Venangeni	661	38.3	1.97	0.47	0.319	0.0416	0.0009	74	BDL	0.002	0.002	0.175	0.0004	0.278
	Norms	-	**1000**	-	**2.0**	**2.0**	**2.0**	**0.2**	-	**2.0**	**0.1**	**0.01**	**3.0**	**0.05**	**5.0**

Inference: The surface water analysis of the samples reveals that overall the parameters measured are within the permissible limits. It is also noted that the presence of heavy metals, such as, Cadmium, Mercury, Lead, Nickel, Selenium

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etc., are well below the permissible limits of CPCB standards and/or undetectable limits. No abnormalities are noted as claimed in the said Report.

8.2 <u>GROUND WATER</u>

Based on the said report, the ground water sample locations were identified and the samples were collected scientifically in sealed containers and were tested in NABL accredited laboratory in CARD. A total of 5 Nos. of samples were collected and sent for analysis. The results are tabulated below: -

ID No as per NGO Report	Location	Chromium (mg/L)	pH @ 25°C	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Iron (mg/L)	BOD for 3 days @ 27°C (mg/L)	COD (mg/L)	Dissolved Solids (mg/L)	Total Alkalinity (mg/L)	Total Hardness as $CaCO_3$ (mg/L)	Sulphides as S (mg/L)	Sulphates as SO_4 (mg/L)
R1 L-12	S-5 Borewell	0.0001	6.25	14.5	4.9	16.74	0.10	8.0	18.5	135	49.5	56.6	BDL	6.5
R1 L-17	S-9 U. Mangalam Tank	0.0005	6.14	79.2	21.6	133.9	0.20	9.6	15.9	736	32.25	286.8	BDL	404.4
R1 L-14	S-16 Vanathirayapuram	0.0002	5.94	15.4	4.4	32.5	0.03	4.6	60.0	144	34	56.6	BDL	15.3
R1 L-15	S-17 Borewell	0.0004	6.55	30.7	13.7	54.2	0.18	10.1	20.0	275	77.4	133.3	BDL	34
R1 L-18	S-19 Borewell IBI 22	0.001	7.5	11.3	3.9	10.6	0.04	1.4	30	129	40.9	44.4	BDL	11
R2-S8	S-24 Tholkappiar Nagar	0.004	6.29	20.2	6.9	15.08	0.28	6.0	20.0	130	53.8	78.8	BDL	31.5
	Norms	0.05	6.5-8.5	75	30	-	0.3	-	-	500	200	200	0.05	200

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ID No .as per NGO Report	Location	Conductivity @ 25°C (Micro ohms)	Chlorides (mg/L)	Potassium (mg/L)	Fluoride (mg/L)	Manganese (mg/L)	Boron (mg/L)	Arsenic (mg/L)	Turbidity	Cadmium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Zinc (mg/L)
R1 L-12	S-5 Borewell	154	15	2.84	0.17	0.003	0.02	0.003	1.0	BDL	0.003	0.001	0.003	0.001	0.067
R1 L-17	S-9 U. Mangalam Tank	1032	111	3.22	0.32	0.014	0.14	0.0	3.0	BDL	0.006	0.001	0.048	0.002	0.034
R1 L-14	S-16 Vanathirayapuram	166.6	25	1.6	0.18	0.001	0.02	0.002	22.0	BDL	0.033	0.001	0.034	0.001	0.014
R1 L-15	S-17 Borewell	404	64	1.87	0.40	0.015	0.08	0.001	1.0	BDL	BDL	0.001	0.01	0.002	0.085
R1 L-18	S-19 Borewell BI 22	135.3	12	0.83	0.17	0.004	0.04	0.002	12.0	BDL	0.002	0.001	0.01	0.0004	0.014
R2-S8	S-24 Tholkappiar Nagar	196.0	13	1.18	0.48	0.006	0.086	0.001	12.2	0.002	0.003	0.0005	0.015	0.0008	0.019
	Norms	-	250	-	1.0	0.10	0.5	0.01	1.0	0.003	0.01	0.001	0.02	0.01	5.0

INFERENCE The ground water analysis of the samples reveals that most of the parameters measured are well below the permissible limits as per IS 10500:2012- Drinking Water Standards. The heavy metal parameters, such as, Mercury, Selenium etc., are well below the norms for drinking water. However, there is marginal variations in parameters, such as, Nickel, Turbidity, Hardness, & Sulphates, which can be removed with preliminary treatment process of chemical-coagulation. It is to be noted that the water samples collected are raw samples directly from borewells without any treatment process and the analysis values are compared with drinking standards (IS10500-2012). The parameters such as Turbidity, Hardness, & Sulphates, in ground water will vary depending on the type of soil strata or the geological formations prevailing in the area or the source points of the ground water. It is ensured through continuous monitoring that no process of NLCIL is discharging water without treatment that may cause

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environmental degradation. Hence, it is ensured that there is no alarming levels of pollution in the Ground water in the region surrounding the industrial premises of NLCIL, Neyveli.

8.3 SOIL

Based on the said report, the soil sample locations were identified and the samples were collected scientifically in sealed containers and were tested in NABL accredited laboratory in CARD. A total of 9 Nos. of samples were collected and sent for analysis. The results are tabulated below: -

Parameter	Paddy Field near NNTPS R1 L-9	Vadakuvellore R2 S-4	Near Ayyan Lake, Vadakuvellore R1 L-11	Palitheru, Vadakuvellore R1 L-19	Bypass – Vadakuvellore R2-S11	Kaikakuppam	Kunankurichi	Umangalam	Mudhanai
Moisture (%)	17.37	20.0	12.34	10.18	13.29	10.41	13.13	17.91	8.91
pH	5.2	8.33	4.49	6.24	5.41	5.84	7.49	7.24	5.87
Electrical Conductivity (µS/cm)	81.6	355	309.0	124.0	101.0	47.4	390.0	294.0	23.1
Organic Carbon (%)	1.02	2.94	0.43	2.17	0.73	0.64	1.20	0.59	0.14
Organic Matter (%)	1.76	5.08	0.74	3.75	1.27	1.09	2.07	1.01	0.24
Available Nitrogen (Kg/Ha)	175.62	191.30	166.21	185.02	169.34	206.98	178.75	116.03	122.30
Available Potassium (Kg/ha)	124.32	298.82	84.54	123.65	63.84	70.11	250.32	288.96	46.14
Humid Acid content (%)	0.28	0.86	0.21	0.62	0.56	0.21	0.62	0.14	0.05
Mercury Content (µg/Kg)	20.14	72.21	12.26	13.59	49.62	54.80	25.60	24.90	26.85

The report of additional 26 parameters analysis for soil is provided in Report Enclosed.

INFERENCE The soil sample analysis report reveals that overall the parameters do not point out to any alarming levels of pollution. In addition, it may be noted that there are no specific standards available for Mercury content in

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soil, however, based on the document published by CPCB (Mercury - Environmental Implications & Toxicity), it is noted that the stringent permitted limits for Mercury content in soil is 6.6 mg/kg (referring to CCME - Canadian Council of Ministers for Environment, 1999, revised again in 2001, 2002, 2004, 2006 & 2007).

Based on the above results, the maximum Mercury content present is only 0.072 mg/Kg which is well below the guidelines referred in the CPCB publications. In addition, the mercury levels in surface & ground water is also well below the permissible limits from which it can be inferred that there is no alarming levels of Mercury in the soil. It may also be noted that, there is no involvement of any Mercury based materials in any of the industrial processes (mining & power generation) of NLCIL. **Hence, the possibility of Heavy metal contamination, such as, Mercury, Selenium, Lead, Zinc etc., in water and soil is non-viable.**

9. MONITORING BY TNPCB & OTHER STATUTORY BODIES

i. It is admitted fact that regular monitoring by TNPCB is being carried out in NLCIL units and the results are depicting that no alarming situation of pollution and Environmental degradation exists in Neyveli and the surrounding areas. In addition, based on the statement filed by CMWSSB (6th Respondent), it is evident that the test analysis results of the statutory authorities also reveals that the Mercury levels are well below the permissible limits and/or undetectable limits. The statements filed by the statutory bodies ruled out that the water sent from NLCIL to the public, which is also utilized for consumption of NLCIL employees, is free from any serious contamination from heavy metals.

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ii. However, due to the allegations raised in News articles based on the private NGO Report, various Statutory Authorities, namely, TNPCB (on 11, 16 & 29 August, 2023), TWAD Board, CMWSSB, CPCB (28 & 29 Sept, 2023) & MoEF&CC (05 & 06 Oct, 2023) have also carried out inspections & monitoring of the water samples in locations in & around Neyveli. Among the statutory authorities, TNPCB had formed a Committee and has carried out various comprehensive Monitoring exercises for Air, Ground Water, Surface water and soil in various locations in & around Neyveli to ensure the ground reality of the prevailing Environmental conditions.

10. Statutory Compliance Reports submitted by NLCIL to MOEF&CC/ CPCB/ TNPCB

i. The following are the reports regularly submitted by NLCIL to the environmental authorities in compliance with the statutory requirements: -

- The Compliance status of Environmental Clearance (EC)/Forest Clearance (FC) conditions and the Environment Monitoring data are regularly being updated and are also being submitted to MoEF&CC and TNPCB on timely basis as stipulated in the EC/FC conditions.
- Other periodical statutory filings, such as, Annual Environmental Statements (Form V), Hazardous Waste Annual returns (Form IV), E-Waste Annual Returns (Form III), Fly Ash Generation & Utilization Annual Reports, Battery Waste half yearly returns (Form VIII) etc., are regularly being submitted.
- Environmental Studies/Environmental Audits carried out by MoEF&CC accredited agencies are also being submitted to MOEF&CC/ CPCB/ TNPCB as part of compliance reports.

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ii. From these undisputed facts, it is apparent that NLCIL has been complying all environmental issues in and around Neyveli strictly. There are no complaints from any of the statutory authorities in this regard. Being so, the unverified news items reported in the daily newspapers are imaginary and self-serving one.

iii. It is submitted that NLCIL Thermal Units and Mines are certified for Environmental Management System ISO:14001, strictly complying to the environmental stipulations. NLCIL is equipped with the required Effluent Treatment Plants and is ensuring its continuous operation to meet the standards prescribed by Central Pollution Control Board (CPCB), Ministry of Environment, Forest and Climate Change (MoEF&CC), Tamil Nadu Pollution Control Board (TNPCB). The quality of treated effluent is being regularly monitored by TNPCB, in which parameters are well below the permissible limits. In addition, 3rd party analysis of water samples is also being carried out, as per the Environment Clearances (EC) conditions stipulated and the same are being submitted to TNPCB and MoEF&CC. All the effluent parameters are well below the permissible limits.

iv. It is submitted that regular monitoring of the Ambient Air Quality by TNPCB, in-house NABL accredited lab .& 3rd party laboratories are also being conducted periodically to ensure the efficiency of the emission control measures. In addition, Continuous Ambient Air Quality Monitoring Stations (CAAQMS) are installed to monitor the real time Ambient Air Quality as recommended by TNPCB. The values are well below the permissible limits. Comprehensive study on combined effects due to all the Power Plants operated by NLCIL was also

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carried out by M/s Centre for Environment, Health & Safety (Annamalai University – an accredited Environmental Impact Assessment (EIA) organization under National Accreditation Board for Education and Training (NABET) by Quality Council of India (QCI) for MoEF&CC recently in 2022 and all the Environmental parameters, water quality parameters and ambient quality parameters levels are well below the permissible limits.

v. It is submitted that the Combined Water Management Study including all Thermal Power Plants, Mines and Township was also carried out by M/s Centre for Environment, Health & Safety (Annamalai University – an accredited EIA organization under NABET by QCI for MoEF&CC) recently in 2022. The report has analyzed all the sewage and effluent treatment facilities and confirmed that all the water parameters are well below the permissible limits. The effluent analysis and Bottom ash analysis reports depicts that all the parameters are well below the permissible limits. The Centre for Applied Research & Development (CARD) a NABL accredited lab of NLCIL is periodically testing the requisite parameters in the environment, which are well below the permissible levels.

vi. It is again submitted that NLCIL has been taking the following measures to keep in check the fugitive dust emissions from its industrial activities as a part of creating an ambient atmosphere and to provide a good healthier environment: -

a. Installation of Water sprinkler/Fog systems
    i. Haul Road Water Sprinklers
    ii. Vehicular Water Spraying/Pressurized Mobile Water Sprinkling System For Roads Inside The Mines
    iii. Conveyor Water Spraying

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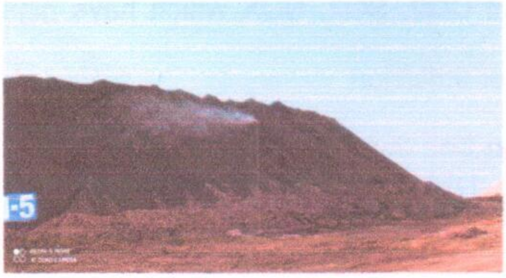
..ia Ltd., Neyveli-607 801.

35

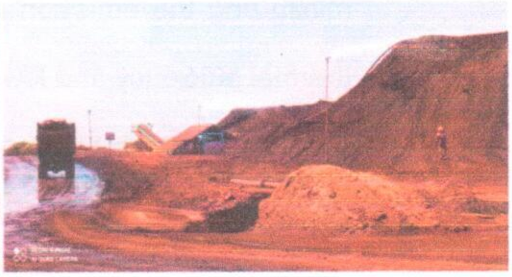
iv. Working Face Water Spray Pipelines

v. Fixed Water Sprinklers Guns in Bunker area

vi. Fog Cannon Dust Suppression System in Coal Stock Yard



Spray Guns in Bunker Area



Vehicular Water Spraying

BEML Made Mist/Fog and rain gun water sprinkler deployed for arresting Fugitive emission

Conveyor Belt Water Spraying

b. Practice of Wet Drilling

c. Adoption of Electrically Operated Belt Conveyor System & Bucket Wheel Excavators (BWE) for the past 3 decades to the

GENERAL MANAGER,
Corporate Environment Cell,
NLC India Ltd., Neyveli-607 801.

maximum extent to reduce pollution load & carbon footprint.

d. NLCIL has also installed CFBC boilers in place of PF (Pulverised Fuel burning) for NLCIL's new and expansion Thermal Power Plants at Neyveli and it is a remarkable breakthrough for further minimizing the emission of CO_2, SO_2, NOX which have higher thermal efficiency and lower emission

e. Dust suppression by green belt development in Bunker Areas & around the mining area.

Green belt development

f. Continuously operating Air Pollution Control (APC) measures, such as, Agglomerated Dust suppression system (ADSS), Water Jets, Water Sprinkler Systems etc., to control the fugitive emissions.

g. Electrostatic Precipitators (ESPs) of more than 99% efficiency have been installed & continuously operated in all the power stations of NLCIL to remove the ash particles from the outgoing flue gas.

h. In addition, the implementation of Flue Gas Desulfurisation (FGD) is under progress to comply with the MoEF&CC's revised emission norms.

GENERAL MANAGER,
Corporate Environment Cell,
NLC India Ltd., Neyveli-607 801.

vii. NLCIL also complies with all the directions issued from time to time by MoEF&CC/CPCB/TNPCB. NLCIL is continuously undertaking all the necessary Environmental Protection measures to ensure air and water quality parameters at ambient level, which are well below the permissible limit and it is known for carrying out Industrial activities along with sustainable environmental activities since its inception.

viii. At the risk of repetition, it is submitted that regular monitoring of the Ambient Air Quality by TNPCB, are being conducted periodically to ensure the efficiency of the emission control measures and the consolidated results reveals that all the parameters of Ambient Air Quality is well below the permissible limits. CAAQMS are also installed to monitor the real time Ambient Air Quality as recommended by TNPCB. In addition, regular monitoring (alternate days) of Ambient Air Quality in & around the industrial premises in Township and surrounding Villages, is being carried out by in-house NABL accredited lab - CARD and through NABL accredited 3rd party laboratory. The ambient air quality values monitored are well below the permissible limits as per National Ambient Air Quality Standards.

ix. As regards, the Water Environment, it is submitted that as per the directives of TNPCB, NLCIL has provided the required Sewage Treatment Plants & Effluent Treatment Plants and is ensuring its continuous operation to meet the standards prescribed. The quality of treated effluent is being regularly monitored by TNPCB as already stated above, 3rd party analysis of water samples are also being carried out as per the EC/CTO conditions stipulated and the same are being submitted to TNPCB & MOEF&CC periodically. The effluent parameters

GENERAL MANAGER,
Corporate Environment Cell,
NLC India Ltd., Neyveli-607 801.

are well below the permissible limits. That apart, the ground water samples from the bore well/dug wells/tube wells in and around Mines and Thermal Power Stations are regularly analysed at MOEF & CC approved laboratories viz., Tamil Nadu Water Supply and Drainage Board State Level Water Testing Laboratory & King Institute - Water Analysis Laboratories, Department of Public Health and Preventive Medicines, Govt. of Tamil Nadu. The results reveal that, all the parameters are well below the permissible limits. These results are being submitted to MOEF& CC by NLCIL as half yearly compliance reports regularly.

x. In addition, NLCIL has proposed to conduct Comprehensive study once in every 3 years and the latest report on Comprehensive Study on combined effects due to all the power plants operated by NLCIL and Combined Water Management Study including all Thermal Power Plants, Mines and Township was carried out by M/s Annamalai University. The said report has analyzed the effluent treatment facilities and has found no Exceedance in the limits and the said Comprehensive study report was submitted to TNPCB also.

xi. It is submitted that the detailed analysis of environmental parameters conducted through reputed institutions for Environmental Impact Assessment (EIA) of new projects (based on which the Environmental Clearances are granted by MoEF&CC) discloses that the water, soil & ambient air parameters are well within the permissible limits. The EIA reports are also submitted to MoEF&CC.

xii. As part of compliance to Environmental conditions, recently (during 2023) water samples were collected from Mine-II outlet, Walajah Tank inlet and

GENERAL MANAGER,
Corporate Environment Cell,
'ndia Ltd., Neyveli-607 801.

Walajah Tank outlet (down steam) were analysed at Government Accredited Testing Laboratories, Chennai. All the quality parameters are well below the permissible limits. As per the directives of the TNPCB, NLCIL has carried out various studies undertaking test of from various sources of water, air & soil through authorized laboratories also. The results depicts that the parameters, such as, Mercury, Selenium etc., are well below the permissible limits. The said report was also submitted to TNPCB.

xiii. It is submitted that NLCIL is giving paramount importance to the health and other requirements of the surrounding Villages. In the medical camps, the residents of the Villages were screened for various ailments and no adverse result was found. NLCIL to support the medical aids and facilities to the surrounding Villages has spent an amount of Rs.75 Lakhs during 2022-2023 and distributed 179 hearing aids, 103 wheel chairs, 105 tripods, 8 water purifiers and 80 walkers to the residents. In addition, NLCIL has spent an amount of Rs.211.99 Lakhs towards various medical expenditures to the Village people.

xiv. That apart, NLCIL Hospital is open to public, all emergency services and outpatient services are provided at free of cost in the said Hospital. It is also pertinent to state that for the surgical cases identified in the medical camps, surgery and/or post-operative treatment is done at free of cost in NLC Hospital. Apart from the free OP treatment to the common public at NLCIL Hospital, as a socially responsive PSU, NLCIL is rendering service to the common public in the Villages around Neyveli, through special medical camps, with an aim to supplement health care services provided to the Project Affected Villages. Multi-disciplinary team approach is adopted to provide a holistic health screening

GENERAL MANAGER,
Corporate Environment Cell,
NLC India Ltd., Neyveli-607 801.

experience to the beneficiaries. Disciplines of General Medicine, Obstetrics & Gynecology, Pediatrics, Ophthalmic, Dermatology, ENT, Chest medicine, Ayurveda Medicine, Ortho, Physiotherapy, and Dental from the clinical team provide comprehensive screening and wider coverage of treatment for women, children and elderly population. It is also proposed to conduct 10 Medical Camps to the common public in the Villages around Neyveli, (Project Affected Villages) at the estimated expenditure of Rs.100 lakhs and upgrade the nearby PHC's by providing health care equipment for the value of Rs.15 lakhs for the year 2023-24.

11. CONCLUSION

i. In fine, NLCIL has taken up various Environmental Protection measures to ensure safe and sustainable industrial development and is committed to improve its sustainable practices. This has ensured preserving the air, water & soil quality in the surrounding areas and will continue to undertake Environmental protection measures relentlessly.

ii. NLCIL is adhering to the Environmental regulations and continually improving the monitoring & control measures to meet the environmental norms/conditions stipulated to its industries on timely basis. In addition, the conditions stipulated to the units by TNPCB and other statutory bodies are being continually implemented.

iii. Based on the test results of the Environmental Monitoring carried out in Surface Water, Ground Water and soil at the same locations as mentioned in the NGO report, it is observed that the Heavy metal parameters are well within the

GENERAL MANAGER,
Corporate Environment Cell,
NLC India Ltd., Neyveli-607 801.

permissible limits as prescribed under CPCB standards. Hence, the allegations in the said news items are unsubstantiated and unverified.

iv. It is submitted that NLCIL being a responsible Central PSU, is continuously striving towards sustainable development and protection of Environment by adopting Green Power Generation, Greenbelt development and uplifting of Socio- economic wellbeing of NLCIL surroundings. NLCIL is also committed to ensure continual improvement in preserving the Eco-habitat.

For all the reasons stated above, it is humbly submitted that the news items reported in the "The New Indian Express" dated 09.08.2023, under the caption "Huge pollution risk in 8 Km around NLC" and in "The Times of India", Chennai Edition dated 09.08.2023 under the caption "Water near NLC full of Mercury" are unverified, false, motivated, publicity oriented and contrary to the records of the Statutory authorities and deserves to be rejected and accordingly it is prayed this Hon'ble Tribunal may be pleased to close the Suo Moto Petition and pass such further or other orders as this Hon'ble Tribunal may deem fit and proper in the facts and circumstances of the case and render justice.

Dated at Chennai on this the 28th day of November, 2023.

Counsel for the 1st Respondent

1st Respondent

GENERAL MANAGER
Corporate Environment GE.,
NLC India Ltd., Neyveli-607 801.

Annex - 5

TAMIL NADU POLLUTION CONTROL BOARD

REPORT OF ANALYSIS

ROA NO: 02/1491 Dt: 27.03.2023

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.	Date of Analysis	28.02.2023
Nature & Number of samples.	:	1 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container
Date & Time of sample collection		28.02.2023 at 14.30 Hrs	Date & Time of sample receipt at the lab	28.02.2023 at 19.15 Hrs
Point of Collection	1.	Mini Auto ETP Outlet (Treated).		Page No 1 of 1

Sl. No	DEE Code no		ICP 02/40	
	Lab Code no		1491	Tested as per APHA23rd edition 2017
	Parameters	Unit		
1.	pH @ 25° C	No.	7.98	APHA 23rdEdn 2017 – 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	14	APHA 23rdEdn2017 – 2540D
3.	Total Dissolved Solids @ 180°C	mg/L	246	APHA 23rdEdn 2017 - 2540 C
4.	Chloride as Cl	mg/L	125	APHA 23rdEdn 2017- 4500 - Cl^- B
5.	Sulphate as SO_4	mg/L	32	APHA 23rdEdn 2017-4500- SO_4^{2-}E
6.	BOD @ 27°C 3 days	mg/L	9.80	IS 3025 (Part 44) - 1993 (RA : 2009)
7.	COD	mg/L	48	IS 3025 (Part 58) – 2006 (RA 2017)
8.	Percent Sodium	mg/L	18.25	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

A. Pa... 2/4/23

Assistant Director (Lab),
TNPCB/AEL/CUDDALORE.

TAMIL NADU POLLUTION CONTROL BOARD

REPORT OF ANALYSIS

ROA NO: 02/1494 & 02/1495 Dt: 16.03.2023

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.		Date of Analysis	28.02.2023
Nature & Number of samples.	:	1 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		28.02.2023 at 15.00Hrs	Date & Time of sample receipt at the lab	28.02.2023 at 19.15 Hrs	
Point of Collection	1.	Mini Auto ETP Outlet (Treated)		Page No 1 of 1	
	2.	Seepage Water			

Sl. No	DEE Code no		ICP 02/43	ICP 02/44	Tested as per APHA 23rd Edition 2017
	Lab Code no		1494	1495	
	Parameters	Unit			
1.	pH @ 25° C	No.	7.08	7.16	APHA 23rdEdn 2017 - 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	16	12	APHA 23rdEdn2017 – 2540D
3.	Total Dissolved Solids @ 180°C	mg/L	250	58	APHA 23rdEdn 2017-2540 C
4.	Chloride as Cl	mg/L	115	25	APHA 23rdEdn 2017- 4500 - Cl^- B
5.	Sulphate as SO_4	mg/L	72	13	APHA 23rdEdn 2017- 4500- SO_4^{2-} E
6.	BOD @ 27°C 3 days	mg/L	8.20	7.80	IS 3025 (Part 44) - 1993 (RA : 2009)
7.	COD	mg/L	40	32	IS 3025 (Part 58) – 2006 (RA 2017)
8.	Percent Sodium	mg/L	5.61	3.50	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

A. B... 16/3/23
Assistant Director (Lab)
TNPCB/AEL/CUDDALORE.

TAMIL NADU POLLUTION CONTROL BOARD

REPORT OF ANALYSIS

ROA NO: 02/1487 & 02/1488 Dt: 16.03.2023

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board,Cuddalore.		Date of Analysis	28.02.2023
Nature & Number of samples.	:	2 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		28.02.2023 at 13.25 Hrs	Date & Time of sample receipt at the lab	28.02.2023 at 19.15 Hrs	
Point of Collection	1.	Canteen ETP Outlet (Treated)		Page No 1 of 1	
	2.	Seepage Water			

Sl. No	DEE Code no		ICP 02/36	ICP 02/37	Tested as per APHA 23[rd] Edition 2017
	Lab Code no		1487	1488	
	Parameters	Unit			
1.	pH @ 25° C	No.	8.10	7.56	APHA 23[rd]Edn 2017 - 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	12	18	APHA 23[rd]Edn2017 – 2540D
3.	Total Dissolved Solids @ 180°C	mg/L	346	362	APHA 23[rd]Edn 2017-2540 C
4.	Chloride as Cl	mg/L	110	160	APHA 23[rd]Edn 2017- 4500 - Cl^- B
5.	Sulphate as SO_4	mg/L	62	78	APHA 23[rd]Edn 2017- 4500- SO_4^{2-} E
6.	BOD @ 27°C 3 days	mg/L	10	7.20	IS 3025 (Part 44) - 1993 (RA : 2009)
7.	COD	mg/L	32	24	IS 3025 (Part 58) – 2006 (RA 2017)
8.	Percent Sodium	%	7.75	10.43	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

Assistant Director (Lab), 3/4/23
TNPCB/AEL/CUDDALORE.

TAMIL NADU POLLUTION CONTROL BOARD

REPORT OF ANALYSIS

ROA NO: 03/1647 Dt:28.04.2023

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.		Date of Analysis	27.03.2023
Nature & Number of samples.	:	1 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		27.03.2023 at 15.25 Hrs	Date & Time of sample receipt at the lab	27.03.2023 at 18.00 Hrs	
Point of Collection	1.	ETP Outlet (Treated)		Page No 1 of 1	

Sl. No	DEE Code no		ICP 03/14	
	Lab Code no		1647	Tested as per APHA23rd edition 2017
	Parameters	Unit		
1.	pH @ 25° C	No.	7.1	APHA 23rdEdn 2017 – 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	08	APHA 23rd Edn2017 – 2540D
3.	Total Dissolved Solids @ 180°C	mg/L	380	APHA 23rdEdn 2017 - 2540 C
4.	Chloride as Cl	mg/L	195	APHA 23rd Edn 2017- 4500 - Cl^- B
5.	Sulphate as SO_4	mg/L	60	APHA 23rdEdn 2017-4500- SO_4^{2-} E
6.	BOD @ 27°C 3 days	mg/L	5.60	IS 3025 (Part 44) - 1993 (RA.: 2009)
7.	COD	mg/L	56	IS 3025 (Part 58) – 2006 (RA 2017)
8.	Percent Sodium	mg/L	9.08	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

Assistant Director (Lab),
TNPCB/AEL/CUDDALORE.

TAMIL NADU POLLUTION CONTROL BOARD

REPORT OF ANALYSIS

ROA NO: 03/1639 Dt:11.04.2023

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.		Date of Analysis	27.03.2023
Nature & Number of samples.	:	1 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		27.03.2023 at 14.45 Hrs	Date & Time of sample receipt at the lab	27.03.2023 at 18.00 Hrs	
Point of Collection	1.	ETP Outlet (Treated)		Page No 1 of 1	

Sl. No	DEE Code no		ICP 03/06	
	Lab Code no		1639	Tested as per APHA23rd edition 2017
	Parameters	Unit		
1.	pH @ 25° C .	No.	6.9	APHA 23rdEdn 2017 – 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	100	APHA 23rdEdn2017 – 2540D
3.	Total Dissolved Solids @ 180°C	mg/L	330	APHA 23rdEdn 2017 - 2540 C
4.	Chloride as Cl	mg/L	115	APHA 23rdEdn 2017- 4500 - Cl^- B
5.	Sulphate as SO_4	mg/L	25	APHA 23rdEdn 2017-4500- SO_4^{2-} E
6.	BOD @ 27°C 3 days	mg/L	12	IS 3025 (Part 44) - 1993 (RA : 2009)
7.	COD	mg/L	40	IS 3025 (Part 58) – 2006 (RA 2017)
8.	Percent Sodium	mg/L	5.66	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

Assistant Director (Lab),
TNPCB/AEL/CUDDALORE.

TAMIL NADU POLLUTION CONTROL BOARD

REPORT OF ANALYSIS

ROA NO 12/1075 Dt 26.12.2022

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.		Date of Analysis	08.12.2022
Nature & Number of samples.		1 Number of Trade Effluent sample	Sample Quantity	Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		08.12.2022 at 13.30 Hrs	Date & Time of sample receipt at the lab	08.12.2022 at 17.30 Hrs	
Point of Collection	1	ETP Outlet (Treated)		Page No	1 of 1

Sl No	DEE Code no		ICP 12/05	
	Lab Code no		1075	Tested as per APHA23rd edition 2017
	Parameters	Unit		
1	pH @ 25° C	No.	7.90	APHA 23rdEdn 2017 – 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	8	APHA 23rdEdn2017 – 2540D
3.	Total Dissolved Solids @ 180°C	mg/L	1568	APHA 23rdEdn 2017 - 2540 C
4	Chloride as Cl	mg/L	870	APHA 23rdEdn 2017- 4500 - Cl^- B
5	Sulphate as SO_4	mg/L	112	APHA 23rdEdn 2017-4500- SO_4^{2-} E
6.	BOD @ 27°C 3 days	mg/L	26.0	IS 3025 (Part 44) - 1993 (RA : 2009)
7.	COD	mg/L	114	IS 3025 (Part 58) – 2006 (RA 2017)
8.	Percent Sodium	mg/L	16.03	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

[signature] 17/2/23

Assistant Director (Lab),
For TNPCB/AEL/CUDDALORE.

TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE.
REPORT OF ANALYSIS

ROA NO:3/1539 ,Dt:28.4.2022

Name and address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.		Date of Analysis	23.3.2022
Nature and number of samples.	:	1 numbers of Trade Effluent samples	Sample quantity	Sealed and Fastened in 2.5 L polythene container	
Date and time of sample collection		23.3.2022 at 10.00 Hrs	Date and time of sample receipt at the lab	23.3.2022 at 17.00 Hrs	
Point of collection	1	ETP Outlet (Treated)		Page No	1 of 1

Sl No	DEE Code no		PAN 36/03	
	Lab Code no		1539	Tested as per APHA 23rd edition 2017
	Parameters	Unit		
1.	pH @ 25° C	No.	7.51	APHA 23rdEdn 2017 - 4500 H^+ B
2.	Total Suspended Solids @ 105 C	mg/L	16	APHA 23rdEdn 2017 – 2540D
3	Total Dissolved Solids @ 180°C	mg/L	842	APHA 23rdEdn 2017 - 2540 C
4	Chloride as Cl^-	mg/L	325	APHA 23rdEdn 2017-4500 - Cl^- B
5	Sulphate as SO_4^{2-}	mg/L	122	APHA 23rdEdn 2017-4500- SO_4^{2} E
6	BOD @ 27°C 3 days	mg/L	20.0	IS 3025 (Part 44) - 1993 (RA : 2009)
7	COD	mg/L	80.0	IS 3025 (Part 58) – 2006 (RA 2012)
8	Percent Sodium	%	6.34	

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

K. Rajanaman 10.5.22

Deputy Chief Sceintific Officer,
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD

1. Name of the Industry : NLC India Limited,
Mine-I,

2. Address of the Industry : Administrative Office (Mine I & IA), Block – 26, Neyveli – 607 803.

3. Date of Survey : 23.02.2023
4. Duration of Survey : 24 Hours.
5. Category : Red/Large.
6. Land use classification : Industrial

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	28	34		54	91
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	NE - SW		Mean Wind Speed (Km/hr.)	9.3	

Fugitive Emission Source Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration (µg/m^3)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			Mines Standard for 24 hrs 300	National Standard for 24 hrs 60	Mines Standard for 24 hrs 120	Mines Standard for 24 hrs 120
1	Lignite Storage Yard	NE	250	32	16	20
2	Lignite Transfer Point – 1	E	254	-	20	26
3	Lignite Transfer Point – 2	SE	258	-	24	30
4	Lignite Transfer Point – 3	SW	264	56	32	38
5	Lignite Transfer Point – 4	W	238	-	16	20
6	Lorry Movement on Road	NW	230	-	14	15

Dy.CSO

22/3/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
REPORT OF ANALYSIS.

1. Name of the Industry : NLC India Limited, **Mine-IA,**

2. Address of the Industry : Administrative Office (Mine I & IA), Block – 26, Neyveli – 607 803.

3. Date of Survey : 24.02.2023

4. Duration of Survey : 24 Hours.

5. Category : Red/Large.

6. Land use classification : Industrial

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	28	35		44	89
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	NE - SW		Mean Wind Speed (Km/hr.)	8.9	

Fugitive Emission Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration (μg/m³)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			Mines Standard for 24 hrs **300**	National Standard for 24 hrs **60**	Mines Standard for 24 hrs **120**	Mines Standard for 24 hrs **120**
1	Lignite Storage yard	NE	252	34	18	22
2	Lignite Transfer Point – 1	E	256	-	20	24
3	Lignite Transfer Point – 1	SE	260	-	26	30
4	Lignite Transfer Point – 1	SW	268	58	30	38
5	Lignite Transfer Point – 1	W	240	-	18	20
6	Lignite Transport by Trucks	NW	232	-	14	15

A. Balasu... 22/3/23

Dy.CSO

Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
REPORT OF ANALYSIS.

1. Name of the Industry : NLC India Ltd,
Mine-II & Expansion,

2. Address of the Industry : Administrative Office (Mine-II & Expansion), Neyveli - 607 802.

3. Date of Survey : 27.02.2023

4. Duration of Survey : 24 Hours.

5. Category : Red/Large.

6. Land use classification : Industrial

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	25	33		46	87
Weather condition	Clear sky		Rain Fall(mm)	-	
Predominant Wind Direction	NE-SW		Mean Wind Speed (Km/hr.)	8.3	

Fugitive Emission Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration (µg/m^3)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			Mines Standard for 24 hrs **300**	National Standard for 24 hrs **60**	Mines Standard for 24 hrs **120**	Mines Standard for 24 hrs **120**
1	Lignite Storage Yard	NE	248	30	17	22
2	Lignite Transfer Point – 1	E	252	-	22	24
3	Lignite Transfer Point – 2	ENE	260	-	26	30
4	Lignite Transfer Point – 3	SE	266	54	34	38
5	Lignite Transfer Point – 4	SW	236	-	15	18
6	Lignite Transport by Trucks Point	W	230	-	14	15

Dy.CSO

Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
REPORT OF ANALYSIS.

1. Name of the Industry : NLC India Limited,
Thermal Power Station – I Expansion,

2. Address of the Industry : Neyveli – 607 807.

3. Date of Survey : 09.03.2023
4. Duration of Survey : 24 Hours.
5. Category : 17 Category (Ultra Red).
6. Land use classification : Industrial

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	29	36		49	91
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	NE – SW		Mean Wind Speed (Km/hr.)	9.3	

Fugitive Emission Source Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration (μg/m³)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			National Standard for 24 hrs **100**	National Standard for 24 hrs **60**	National Standard for 24 hrs **80**	National Standard for 24 hrs **80**
1	Lignite Transfer in Conveyors	NE	56	46	28	30
2	Lignite Transfer Chute of conveyors - 1	E	61	-	30	32
3	Lignite Transfer Chute of conveyors - 2	SE	56	-	32	34
4	Lignite Transfer Chute of conveyors – 3	SW	79	53	38	40
5	Lignite Transfer Chute of conveyors - 4	W	48	-	32	34
6	Lignite Transfer Chute of conveyors - 5	NW	52	-	34	36

Dy.CSO

24/4/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD

1. Name of the Industry : M/s. NLC India Limited,
Thermal Power Station – I (Expansion)

2. Address of the Industry : Neyveli – 607 807.

3. Date of Survey : 09.03.2023

Stack Monitoring Survey Results

Unit: Thermal Power station I – Expansion.

Sl. No.	Stack attached to	Stack Temp °K	Velocity in (m/Sec)	Discharge rate in (Nm^3/Hr)	Pollutants Concentration (mg/Nm^3)		
					PM	SO_2	NO_x
1	Boiler I – 690 T/H **Fuel:** Lignite **APC:** Electro Static Precipitators	455	7.6	363820.6	51.54	1433.16	400.68

Dy.CSO

A. Balan 24/4/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
REPORT OF ANALYSIS.

1. Name of the Industry : NLC India Limited, Thermal Power Station – II,
2. Address of the Industry : Neyveli – 607 807.
3. Date of Survey : 10.03.2023
4. Duration of Survey : 24 Hours.
5. Category : 17 Category (Ultra Red).
6. Land use classification : Industrial

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	29	36		65	93
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	NE - SW		Mean Wind Speed (Km/hr.)	8.9	

Fugitive Emission Source Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration ($\mu g/m^3$)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			National Standard for 24 hrs **100**	National Standard for 24 hrs **60**	National Standard for 24 hrs **80**	National Standard for 24 hrs **80**
1	Lignite Storage Yard	N	45	-	41	43
2	Lignite Transfer Conveyors – 1	NE	48	32	52	58
3	Lignite Transfer Conveyors – 2	E	50	-	56	60
4	Lignite Transfer Conveyors – 3	SE	54	-	60	64
5	Lignite Transfer Conveyors – 4	SW	80	48	68	70
6	Lignite Transfer Conveyors – 5	NW	44	-	40	42

Dy.CSO

A. B. [signature] 3/4/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
STACK MONITORING SURVEY – Report of Analysis.

1. Name of the Industry : M/s. NLC India Limited, Thermal Power Station – II

2. Address of the Industry : Neyveli – 607 807.

3. Date of Survey : 10.03.2023

Stack Monitoring Survey Results

Unit: Thermal Power station - II

Sl. No.	Stack attached to	Stack Temp °K	Velocity in (m/Sec)	Discharge rate in (m^3/Hr)	Pollutants Concentration (mg/Nm^3)		
					PM	SO_2	NO_x
1	Boiler – II	453	7.4037	213109	58	1442	478
2	Boiler – III	455	7.6290	218629	56	1442	476
3	Boiler – IV	457	7.8497	223888.5	55	1442	478
4	Boiler – V	457	7.6458	218144.7	57	1444	476
5	Boiler – VI	451	7.4921	216610	56	1448	478
6	Boiler – VII	459	7.8669	223482.4	58.0	1444	476.0

Dy.CSO

A. Balasubramanian 3/4/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
REPORT OF ANALYSIS.

1. Name of the Industry : NLC India Limited,
   Thermal Power Station – II Expansion,
2. Address of the Industry : Neyveli – 607 807.
3. Date of Survey : 09.03.2023 & 10.03.2023
4. Duration of Survey : 24 Hours.
5. Category : 17 Category (Ultra Red).
6. Land use classification : Industrial

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	29	34		63	91
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	NE - SW		Mean Wind Speed (Km/hr.)	8.5	

Fugitive Emission Source Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration (µg/m³)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			National Standard for 24 hrs **100**	National Standard for 24 hrs **60**	National Standard for 24 hrs **80**	National Standard for 24 hrs **80**
1	Lignite Storage Yard	NE	52	38	24	28
2	Lignite Transferring Conveyor -1	E	58	-	28	30
3	Lignite Transferring Conveyor -2	SE	60	-	32	34
4	Lignite Transferring Conveyor -3	SW	72	48	40	42
5	Lignite Transferring Conveyor -4	W	45	-	24	26
6	Lignite Transferring Conveyor -5	NW	48	-	26	28

Dy.CSO

A. B... 3/4/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD

STACK MONITORING SURVEY – Report of Analysis.

1. Name of the Industry : M/s. NLC India Limited, **Thermal Power Station – II (Expansion)**
2. Address of the Industry : Neyveli – 607 807.
3. Date of Survey : 26.7.2022

Stack Monitoring Survey Results

Unit: Thermal Power station II – Expansion.

Sl. No	Stack attached to	Stack Temp °K	Velocity in (m/Sec)	Discharge rate in (Nm^3/Hr)	Pollutants Concentration (mg/Nm^3)		
					PM	SO_2	NO_x
1	Boiler unit-I **Fuel:** Lignite **APC:** ESP	446	8.2431	164881	37	741	110

A. Prakash 8/8/22

Deputy Chief Scientific Officer,
TNPCB/AEL/Cuddalore

TAMIL NADU POLLUTION CONTROL BOARD
REPORT OF ANALYSIS.

1. Name of the Industry : NLC India Limited, Neyveli New Thermal Power Station,
2. Address of the Industry : Neyveli.
3. Date of Survey : 09.03.2023
4.. Duration of Survey : 24 Hours.
5. Category : 17 Category (Ultra Red)
6. Land use classification : Industrial

Meteorological Conditions

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity(%)	Min	Max
	28	35		55	91
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	NE - SW		Mean Wind Speed (Km/hr.)	9.3	

Fugitive Emission Monitoring Results

Sl. No.	Location	Direction	Pollutants Concentration ($\mu g/m^3$)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
			National Standard for 24 hrs 100	National Standard for 24 hrs 60	National Standard for 24 hrs 80	National Standard for 24 hrs 80
1	Near Gate -I	NE	56	40	30	34
2	Near Gate -II	N	58	-	36	38
3	Near Store	W	58	-	32	34
4	Near Crusher Home	S	74	48	38	40
5	Boiler area -I	SW	52	-	32	36
6	Boiler area -II	SE	54	-	34	36

Dy.CSO

A - Rafeal 8/4/23
Assistant Director (Lab),
TNPCB/AEL/CUDDALORE

TAMIL NADU POLLUTION CONTROL BOARD
STACK MONITORING SURVEY – Report of Analysis.

1. Name of the Industry : M/s. NLC India Limited, Neyveli New Thermal Power Station

2. Address of the Industry : Neyveli.

3. Date of Survey : 09.03.2023

Stack Monitoring Survey Results

Unit: Neyveli New Thermal Power station

Sl. No.	Stack attached to	Stack Temp °K	Velocity in (m/Sec)	Discharge rate in (m^3/hr)	Pollutants Concentration (mg/Nm^3)		
					PM	SO_2	NO_x
1.	Boiler Unit-I Fuel : Lignite APC: ESP	453	7.7	702056	52	1348.5	488.4

Dy.CSO

Assistant Director (Lab), 14/2
TNPCB/AEL/CUDDALORE

एनएलसी इंडिया लिमिटेड
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)
नेयवेली - 607807
NLC INDIA LIMITED
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)
NEYVELI – 607 807

CREATING WEALTH FOR WELLBEING

कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date :- Reg.No :10886/23-24 Dt: 28 Aug 2023

परीक्षण प्रतिवेदन/ TEST REPORT

ग्राहक / Customer : **M/s.DGM/PLANNING/TPS-11 EXPN.**	**रिपोर्ट सं./दिनांक / Report No / Date**	TR/1004/23-24 Dt-14 Sep 2023
	उपभोक्ता सं./ दिनांक / Customer Ref. / Date	ENV. CELL/AUG. 2023 DT.12/08/2
	नमूने का विवरण/Description of the Sample	LIQUID
	नमूनों की संख्या/ No. of Samples	13
	परीक्षण की तिथि / Date of Testing	28 Aug 2023 - 14 Sep 2023
	नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures & Done by	BY CUSTOMER
	कोई विशिष्ट जानकारी / Any Specific Information	

नमूने का ब्यौरा Sample particulars : 1.Neyveli PCS Store Discharge

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	2.333	-
2	Total Chromium as Cr (mg/l)	--	0.0044	-
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.57	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	12.9	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	2.9	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	5.8	-
7	Iron as Fe	--	1.8	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		6.50	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	37.0	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	96	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	32	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	44.4	-

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

Note : This result relates to the particular sample tested. The results apply to the sample as received. Report shall not be reproduced, unless in full, without consent of the laboratory. Sample description is given by the Customer. Samples are not drawn by us unless otherwise stated

एनएलसी इंडिया लिमिटेड
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)
नेयवेली - 607807

NLC INDIA
CREATING WEALTH FOR WELLBEING

NLC INDIA LIMITED
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)
NEYVELI – 607 807

रिपोर्ट सं./दिनांक / Report No / Date TR/1004/23-24 Dt-14 Sep 2023

13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	12	1000
15	Conductivity in micromhos @ 25°C	—	116	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	13	1000
17	Potassium as K (mg/l)	—	4.25	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.18	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.055	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	BDL	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.013	0.20
22	Turbidity	—	225	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.006	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.008	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.027	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0001	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.065	5.00

नमूने का ब्यौरा **Sample particulars : 2.Discharge from NNTPS**

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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एनएलसी इंडिया लिमिटेड
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)
नेयवेली - 607807

NLC INDIA LIMITED
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)
NEYVELI – 607 807

CREATING WEALTH FOR WELLBEING

रिपोर्ट सं./दिनांक / Report No / Date TR/1004/23-24 Dt-14 Sep 2023

क्र.सं. SlNo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	1.138	-
2	Total Chromium as Cr (mg/l)	--	0.0029	-
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.4	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	111.5	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	36.3	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	177.9	-
7	Iron as Fe	--	4.0	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		0.90	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	18.5	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	1203	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	39	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	428.2	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	450	1000
15	Conductivity in micromhos @ 25°C	--	1578	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	302	1000
17	Potassium as K (mg/l)	--	4.36	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.7	2.00

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

Note : This result relates to the particular sample tested. The results apply to the sample as received. Report shall not be reproduced, unless in full, without consent of the laboratory. Sample description is given by the Customer. Samples are not drawn by us unless otherwise stated

एनएलसी इंडिया लिमिटेड
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नेयवेली - 607807
NLC INDIA LIMITED
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)
NEYVELI – 607 807

CREATINGWEALTH FORWELLBEING

रिपोर्ट सं./दिनांक / Report No / Date TR/1004/23-24 Dt-14 Sep 2023

19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	1.235	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.092	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0012	0.20
22	Turbidity	--	110	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.004	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.007	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.046	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0033	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.039	5.00

नमूने का ब्यौरा **Sample particulars : 3.Discharge from Neyveli TPS II**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.605	-
2	Total Chromium as Cr (mg/l)	--	0.0012	-
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.85	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	147.1	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	11.8	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	140.5	-
7	Iron as Fe (mg/l)	--	1.6	-

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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एनएलसी इंडिया लिमिटेड
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नेयवेली - 607807

NLC INDIA LIMITED
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)
NEYVELI – 607 807

CREATING WEALTH FOR WELLBEING

रिपोर्ट सं./दिनांक / Report No / Date TR/1004/23-24 Dt-14 Sep 2023

8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		13.50	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	37.0	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	1055	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	17.2	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	416.1	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	647	1000
15	Conductivity in micromhos @ 25°C	--	1271	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	116	1000
17	Potassium as K (mg/l)	--	2.5	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.4	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.900	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.187	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0001	0.20
22	Turbidity	--	82	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.003	0.10

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.007	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.05	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0016	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.027	5.00

नमूने का ब्यौरा **Sample particulars : 4.Artificial Lake North side of TS II**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.0002	-
2	Total Chromium as Cr (mg/l)	--	0.0007	-
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.61	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	100.2	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	14.7	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	97.5	-
7	Iron as Fe (mg/l)	--	0.1	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		5.30	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	37.0	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	771	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	13	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	311.1	-
13	Sulphides as S (mg/l)		BDL	2.0

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	402	1000
15	Conductivity in micromhos @ 25°C	--	990	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	89	1000
17	Potassium as K (mg/l)	--	4.74	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.42	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.623	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.123	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0001	0.20
22	Turbidity	--	12	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.004	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.006	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.025	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0019	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.0014	5.00

नमूने का ब्यौरा **Sample particulars : 6.Opp to Main Gate of MII-Valyamadevi**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	9.745	-

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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2	Total Chromium as Cr (mg/l)	--	0.0167	
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.94	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	75.9	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	28.4	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	83.08	-
7	Iron as Fe (mg/l)	--	2.64	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		14.1	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	31.7	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	623	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	86	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	307	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	549	1000
15	Conductivity in micromhos @ 25°C	--	884	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	64.4	1000
17	Potassium as K (mg/l)	--	4.3	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.86	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.580	2.00

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.020	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.013	0.20
22	Turbidity	--	1020	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.012	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.004	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.103	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0018	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.132	5.00

नमूने का ब्यौरा **Sample particulars : 7.Paravanar River -NLC MII discharge**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	1.023	-
2	Total Chromium as Cr (mg/l)	--	0.0082	
3	pH @ 25 C (--)	IS: 3025 Part No.11	7.04	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	80.8	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	32.4	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	111.1	-
7	Iron as Fe (mg/l)	--	1.8	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		5.2	30

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9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	63.5	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	683	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	120	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	335.3	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	434	1000
15	Conductivity in micromhos @ 25°C	--	920	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	70	1000
17	Potassium as K (mg/l)	--	2.27	
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.89	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.256	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.002	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0003	0.20
22	Turbidity	--	404	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.003	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.003	0.01

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.064	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0021	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.073	5.00

नमूने का ब्यौरा Sample particulars : 8.Walaja Lake

क्र.सं. SlNo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	3.9	-
2	Total Chromium as Cr (mg/l)	--	0.0090	
3	pH @ 25 C (--)	IS: 3025 Part No.11	7.53	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	79.2	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	33.4	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	145.2	-
7	Iron as Fe (mg/l)	--	0.8	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		5.2	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	31.7	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	670	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	159	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	335.3	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	434	1000

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15	Conductivity in micromhos @ 25°C	--	1060	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	93	1000
17	Potassium as K (mg/l)	--	2.27	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.89	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.256	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.032	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0014	0.20
22	Turbidity	--	488.0	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.004	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.003	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.034	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0025	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.014	5.00

नमूने का ब्यौरा **Sample particulars : 10.Coal MIne Discharge from MI**

क्र.सं. SlNo	परीक्षण मापदंड **Test Parameter**	विधि **Method**	परीक्षण परिणाम **Test Results**	स्वीकार्य सीमा **Acceptable range**
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.107	-
2	Total Chromium as Cr	--	0.0001	
3	pH @ 25 C (--)	IS: 3025 Part No.11	7.70	5.5-9.0

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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4	Calcium as Ca (mg/l)	IS-3025 Part No.40	48.5	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	16.7	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	44.1	-
7	Iron as Fe	--	0.3	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		9.9	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	31.7	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	348	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	60	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	189.9	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	174	1000
15	Conductivity in micromhos @ 25°C	--	492	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	30	1000
17	Potassium as K (mg/l)	--	1.55	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.64	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.031	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.064	2.00

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21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0002	0.20
22	Turbidity	--	13.8	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.006	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.002	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.014	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0011	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.014	5.00

नमूने का ब्यौरा **Sample particulars : 11.Direct Discharge from TPS I**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.113	-
2	Total Chromium as Cr (mg/l)	--	0.0013	
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.55	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	19.4	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	5.9	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	22.4	-
7	Iron as Fe (mg/l)	--	0.3	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		1.5	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	31.7	250

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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10	Dissolved Solids (mg/l)	IS 3025 Part No.16	169	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	40.9	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	72.7	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	38	1000
15	Conductivity in micromhos @ 25°C	--	209	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	19	1000
17	Potassium as K (mg/l)	--	1.14	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.28	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.015	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.010	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0011	0.20
22	Turbidity	--	10	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.001	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.003	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.014	3.00

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0007	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.016	5.00

नमूने का ब्यौरा **Sample particulars : 13.Romapuri,Mandarakuppam ,Vadakkuvellur**

क्र.सं. SlNo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable rang
1	Aluminum as Al (mg/l)	IS 3025 Part 55	7.921	-
2	Total Chromium as Cr (mg/l)	--	0.0102	
3	pH @ 25 C (--)	IS: 3025 Part No.11	8.12	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	103.4	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	19.6	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	152.6	-
7	Iron as Fe (mg/l)	--	1.3	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		1.2	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	20.0	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	926	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	51.6	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	339.4	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	369	1000
15	Conductivity in micromhos @ 25°C	--	1248	-

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	171	1000
17	Potassium as K (mg/l)	--	3.92	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.64	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.18	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.173	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0037	0.20
22	Turbidity	--	244	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.011	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.002	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.048	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0028	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.491	5.00

नमूने का ब्यौरा **Sample particulars : 14.Vadakkuvellur Pond Near sivan koil**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.0002	-
2	Total Chromium as Cr (mg/l)	--	0.0001	
3	pH @ 25 C (--)	IS: 3025 Part No.11	7.48	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	121.2	-

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	34.4	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	188.5	-
7	Iron as Fe (mg/l)	--	0.3	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		10.4	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	40.0	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	1152	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	86	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	444.4	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	528	1000
15	Conductivity in micromhos @ 25°C	--	1619	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	267	1000
17	Potassium as K (mg/l)	--	6.34	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.6	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.021	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.181	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0004	0.20

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22	Turbidity	--	8.0	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	BDL	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.002	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.002	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0040	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.014	5.00

नमूने का ब्यौरा **Sample particulars : 18.Kanjamanadanpettai pond Water**

क्र.सं. SlNo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	10.987	-
2	Total Chromium as Cr (mg/l)	--	0.0154	
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.38	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	5.7	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	4.9	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	12.6	-
7	Iron as Fe (mg/l)	--	8.2	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		14.7	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	20	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	96	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	22	-

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	34.3	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	26.0	1000
15	Conductivity in micromhos @ 25°C	--	117	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	14	1000
17	Potassium as K (mg/l)	--	8.34	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.13	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.246	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	BDL	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.007	0.20
22	Turbidity	--	801	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.02	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.002	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.022	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0007	0.05

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28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.020	5.00

नमूने का ब्यौरा **Sample particulars : 20.MI Outlet Veenangeni**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	3.371	-
2	Total Chromium as Cr (mg/l)	--	0.0063	
3	pH @ 25 C (--)	IS: 3025 Part No.11	4.7	5.5-9.0
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	79.2	-
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	27.5	-
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	43.6	-
7	Iron as Fe (mg/l)	--	1.1	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		9.0	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	60	250
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	458	2100
11	Total Alkanity (mg/l)	IS-3025 Part No.23	12.9	-
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	311.1	-
13	Sulphides as S (mg/l)		BDL	2.0
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	365.9	1000
15	Conductivity in micromhos @ 25°C	--	661	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	38.3	1000

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17	Potassium as K (mg/l)	--	1.97	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.47	2.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.319	2.00
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.0416	2.00
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.0009	0.20
22	Turbidity	--	74	-
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.0
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.002	0.10
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.002	0.01
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.175	3.00
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0004	0.05
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.278	5.00

प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो / Special mention if any by the Laboratory	ACCEPTABLE RANGE AS PER TNPCB NORMS

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना बिवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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नेयवेली - 607807
NLC INDIA LIMITED
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NEYVELI – 607 807

CREATING WEALTH FOR WELLBEING

रिपोर्ट सं./दिनांक / Report No / Date TR/1004/23-24 Dt-14 Sep 2023

परीक्षण परिणाम का अंत/ End of the test result

कृते एनएलसी इंडिया लिमिटेड / For NLC INDIA LIMITED

A. Francis Xavier
DCM/Sci/CARD

द्वारा सत्यापित किया गया / Verified By

S.Prabakaran
ACM/Sci/CARD

अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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CREATING WEALTH FOR WELLBEING

कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date : Reg.No :10885/23-24 Dt: 28 Aug 2023

परीक्षण प्रतिवेदन/ TEST REPORT

ग्राहक / Customer:		
M/s.DGM/PLANNING/TPS-11 EXPN.	रिपोर्ट सं./दिनांक / Report No / Date	TR/1003/23-24 Dt-14 Sep 2023
	उपभोक्ता सं./ दिनांक / Customer Ref. / Date	ENV. CELL/AUG. 2023 DT.12/08/2
	नमूने का विवरण/Description of the Sample	LIQUID
	नमूनों की संख्या/ No. of Samples	5
	परीक्षण की तिथि / Date of Testing	28 Aug 2023 - 14 Sep 2023
	नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures & Done by	BY CUSTOMER
	कोई विशिष्ट जानकारी / Any Specific Information	

नमूने का ब्यौरा **Sample particulars : 5.Borewell water**

क्र.सं. SlNo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.0002	0.03
2	Total Chromium as Cr (mg/l)	IS 3025 Part 52	0.0001	0.05
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.25	6.5 TO 8.5
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	14.5	75
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	4.9	30
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	16.74	-
7	Iron as Fe (mg/l)	3120 B APHA 21ST EDITION	0.10	0.3
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		8.0	-
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	18.5	-
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	135	500
11	Total Alkanity (mg/l)	IS-3025 Part No.23	49.5	200
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	56.6	200

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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13	Sulphides as S (mg/l)		BDL	0.05
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	6.5	200
15	Conductivity in micromhos @ 25°C	--	154	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	15	250
17	Potassium as K (mg/l)	--	2.84	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.17	1.0
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.003	0.10
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.02	0.5
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.003	0.01
22	Turbidity	--	1.0	1.0
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	0.003
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.003	0.01
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.001	0.001
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.003	0.02
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.001	0.01
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.067	5.0

नमूने का ब्यौरा Sample particulars : 9.U.Mangalam Tank

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क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.032	0.03
2	Total Chromium as Cr (mg/l)	IS 3025 Part 52	0.0005	0.05
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.14	6.5 TO 8.5
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	79.2	75
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	21.6	30
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	133.9	-
7	Iron as Fe (mg/l)	3120 B APHA 21ST EDITION	0.20	0.3
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		9.6	-
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	15.9	-
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	736	500
11	Total Alkanity (mg/l)	IS-3025 Part No.23	32.25	200
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	286.8	200
13	Sulphides as S (mg/l)		BDL	0.05
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	404.4	200
15	Conductivity in micromhos @ 25°C	--	1032	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	111	250
17	Potassium as K (mg/l)	--	3.22	

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.32	1.00
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.014	0.10
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.14	0.5
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.000	0.01
22	Turbidity	--	3.0	1.0
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	0.003
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.006	0.01
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.001	0.001
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.048	0.02
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.002	0.01
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.034	5.0

नमूने का ब्यौरा Sample particulars : 16.Vanadhirayapuram Bore Well

क्र.सं. SlNo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.0002	0.03
2	Total Chromium as Cr (mg/l)	IS 3025 Part 52	0.0002	0.05
3	pH @ 25 C (--)	IS: 3025 Part No.11	5.94	6.5 TO 8.5
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	15.4	75
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	4.4	30

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	133.3	200
13	Sulphides as S (mg/l)		BDL	0.05
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	34	200
15	Conductivity in micromhos @ 25°C	--	404	-
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	64	250
17	Potassium as K (mg/l)	--	1.87	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.40	1.0
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.015	1.0
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.08	0.5
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.001	0.01
22	Turbidity	--	1.0	1.0
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	0.003
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	BDL	0.01
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.001	0.001
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.010	0.02
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.002	0.01

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.085	5.0

नमूने का ब्यौरा **Sample particulars : 19.Borewater BL 22**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.0002	0.03
2	Total Chromium as Cr (mg/l)	IS 3025 Part 52	0.0010	0.05
3	pH @ 25 C (--)	IS: 3025 Part No.11	7.50	6.5 TO 8.5
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	11.3	75
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	3.9	30
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	10.6	-
7	Iron as Fe (mg/l)	3120 B APHA 21ST EDITION	0.04	0.3
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		1.4	-
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	30.0	-
10	Dissolved Solids (mg/l)	IS 3025 Part No.16	129	500
11	Total Alkanity (mg/l)	IS-3025 Part No.23	40.9	200
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	44.4	200
13	Sulphides as S (mg/l)		BDL	0.05
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	11	200
15	Conductivity in micromhos @ 25°C	--	135.3	-

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16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	12	250
17	Potassium as K (mg/l)	--	0.83	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.17	1.0
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.004	0.10
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.04	0.5
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.002	0.01
22	Turbidity	--	12.0	1.0
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	0.003
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.002	0.01
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.001	0.001
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.010	0.02
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0004	0.01
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.014	5.0

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प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो / Special mention if any by the Laboratory	ACCEPTABLE RANGE AS PER DRINKING WATER NORMS IS 10500 2012

परीक्षण परिणाम का अंत/ End of the test result

1कृते एनएलसी इंडिया लिमिटेड / For NLC INDIA LIMITED

A. Francis Xavier
DCM/Sci/CARD

S.Prabakaran
ACM/Sci/CARD

द्वारा सत्यापित किया गया / Verified By

अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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एनएलसी इंडिया लिमिटेड
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)
नेयवेली - 607807

NLC INDIA LIMITED
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)
NEYVELI – 607 807

NLC INDIA
CREATING WEALTH FOR WELLBEING

कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date : Reg.No :10994/23-24 Dt. 12 Sep 2023

परीक्षण प्रतिवेदन/ TEST REPORT

ग्राहक / Customer : M/s.DGM/PLANNING/TPS-II EXPAN.	रिपोर्ट सं./दिनांक / Report No / Date	TR/1168/23-24 Dt-06 Oct 2023
	उपभोक्ता सं./ दिनांक / Customer Ref. / Date	ENV. CELL/AUG. 2023 DT.16/08/2
	नमूने का विवरण/Description of the Sample	LIQUID
	नमूनों की संख्या/ No. of Samples	1
	परीक्षण की तिथि / Date of Testing	12 Sep 2023 - 06 Oct 2023
	नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures & Done by	BY CUSTOMER
	कोई विशिष्ट जानकारी / Any Specific Information	

नमूने का ब्यौरा Sample particulars : 24

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Aluminum as Al (mg/l)	IS 3025 Part 55	0.01	0.03
2	Total Chromium as Cr (mg/l)	IS 3025 Part 52	0.004	0.05
3	pH @ 25 C (--)	IS: 3025 Part No.11	6.29	6.5-8.5
4	Calcium as Ca (mg/l)	IS-3025 Part No.40	20.2	75
5	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	6.9	30
6	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	15.08	-
7	Iron as Fe (mg/l)	3120 B APHA 21ST EDITION	0.28	0.30
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		6.0	-
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	20	-
10	Total Solids (mg/l)	IS 3025 Part No.15	130	500
11	Total Alkanity (mg/l)	IS-3025 Part No.23	53.8	200
12	Total Hardness as $CaCO_3$ (mg/l)	IS-3025 Part No.21 / 2340 C APHA 21st Edition	78.8	200

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13	Sulphides as S (mg/l)		BDL	0.05
14	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	31.5	200
15	Conductivity in micromhos @ 25°C	–	196	
16	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	13	250
17	Potassium as K (mg/l)	–	1.18	-
18	Fluoride as F (mg/l)	4110 B APHA 21ST EDITION	0.48	1.0
19	Manganese as Mn (mg/l)	3120 B APHA 21ST EDITION	0.006	0.10
20	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.086	0.5
21	Arsenic as As (mg/l)	3120B APHA 21st edition	0.001	0.01
22	Turbidity	–	12.2	1.0
23	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	0.002	0.003
24	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.003	0.01
25	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.0005	0.001
26	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.015	0.02
27	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	0.0008	0.01
28	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.019	5.0

एनएलसी इंडिया लिमिटेड
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)
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रिपोर्ट सं./दिनांक / Report No / Date TR/1168/23-24 Dt-06 Oct 2023

प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो / Special mention if any by the Laboratory	

परीक्षण परिणाम का अंत/ End of the test result

कृते एनएलसी इंडिया लिमिटेड / For NLC INDIA LIMITED

A. Francis Xavier
DCM/Sci/CARD

द्वारा सत्यापित किया गया / Verified By

S.Prabakaran
ACM/Sci/CARD

अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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Soil samples

CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)

NLC India Limited,

NEYVELI - 607 807

Report No. : MB/CGM/CARD /TS II Exp/Results/2023, Dt:25.09.2023

Sample received from Environment Cell / TS II Expn

Sample details: Soil from surrounding villages fields of NLCIL

Registration no.: 10890, 10900 and 10993

Number of samples: 9 (12, 15, 21, 23, 26, 28, 29, 30, 31)

Results*

S. No.	Parameter*	Sample 12	Sample 15	Sample 21	Sample 23	Sample 26	Sample 28	Sample 29	Sample 30	Sample 31
1	Moisture content (%)	17.37	20.00	12.34	10.18	13.29	10.41	13.13	17.91	8.19
2	pH	5.2	8.33	4.49	6.24	5.41	5.84	7.49	7.24	5.87
3	Electrical conductivity (µS/cm)	81.6	355	309.00	124.00	101.00	47.4	390.0	294.0	23.1
4	Organic carbon (%)	1.02	2.94	0.43	2.17	0.73	0.64	1.20	0.59	0.14
5	Organic matter (%)	1.76	5.08	0.74	3.75	1.27	1.09	2.07	1.01	0.24
6	Available nitrogen (Kg/ha)	175.62	191.30	166.21	185.02	169.34	206.98	178.75	116.03	122.30
7	Available potassium (Kg/ha)	124.32	298.82	84.54	123.65	63.84	70.11	250.32	288.96	46.14
8	Humic acid content (%)	0.28	0.86	0.21	0.62	0.56	0.21	0.62	0.14	0.05
9	Mercury content (µg/Kg)	20.14	72.21	12.26	13.59	49.62	54.80	25.60	24.90	26.85

S. No.	Elements Requested	Elements reported in ED XRF as	Soil 12	Soil 15	Soil 21	Soil 23	Soil 26	Soil 28	Soil 29	Soil 30	Soil 31
1	Chlorides	Chlorine (µg/g)	39.33	73.17	143.27	62.70	49.30	16.7	212.3	166.5	9.2
2	Sulphate	Sulphur (%)	0.09	0.22	0.19	0.15	0.12	0.05	0.13	0.09	0.03
3	Zinc	Zinc (µg/g)	78.60	2197.67	121.37	97.53	81.77	34.2	48.9	49.73	9.8
4	Cadmium	Cadmium (µg/g)	1.00	1.60	<0.2	<0.2	1.20	<0.2	<0.2	<0.2	<0.2
5	Nickel	Nickel (µg/g)	37.93	237.83	45.17	71.53	59.27	25.63	29.1	27.73	10.5
6	Lead	Lead (µg/g)	18.47	17.00	13.37	16.73	15.30	9.77	8.5	9.9	3.9
7	Arsenic	Arsenic (µg/g)	5.37	12.23	5.00	61.13	43.17	3.37	3.1	2.93	1.5

8	Total chromium	Chromium(µg/g)	130.03	157.67	168.97	182.43	163.40	373.37	295.87	249.63	150.9
9	Selenium	Selenium (µg/g)	0.70	3.93	0.50	1.53	1.13	0.37	0.3	0.33	0.23
10	Calcium	Calcium (%)	0.30	3.54	0.33	0.71	0.44	0.19	0.56	0.45	0.17
11	Magnesium	Magnesium (%)	0.34	1.69	0.35	0.45	0.44	0.22	0.45	0.38	0.20
12	Manganese	Manganese (µg/g)	444.60	648.50	202.40	479.20	280.00	359	376.2	405.7	95.7
13	Sulphide	Sulphur (%)	0.09	0.22	0.19	0.15	0.12	0.05	0.13	0.090	0.03
14	Aluminium	Aluminium (%)	11.95	18.37	12.69	16.95	16.26	8.26	8.381	8.587	2.78
15	Iron	Iron (%)	2.33	4.06	2.62	3.05	2.59	1.56	1.47	1.406	0.55
16	Potassium	Potassium (%)	0.34	0.28	0.33	0.33	0.23	0.17	0.24	0.26	0.11
17	Sodium	Sodium (%)	0.09	0.22	0.19	0.15	0.12	0.15	0.22	0.23	0.17
18	Antimony	Antimony (µg/g)	<2.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
19	Barium	Barium (µg/g)	158.00	288.47	130.30	104.20	154.03	112.26	131.76	160.66	83.66
20	Bromine	Bromine (µg/g)	3.27	34.00	5.53	8.40	5.17	2.2	3.43	3.36	0.76
21	Cesium	Cesium (µg/g)	28.83	17.80	15.7	18.27	23.17	23.8	17.86	37.3	26.1
22	Cobalt	Cobalt (µg/g)	<1.0	46.33	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
23	Copper	Copper (µg/g)	35.03	61.37	36.73	49.47	42.70	21.9	21.96	22.4	7.13
24	Gallium	Gallium (µg/g)	10.13	23.77	12.27	18.23	15.80	7.0	6.4	6.5	2.1
25	Iodine	Iodine (µg/g)	11.27	27.78	10.60	15.60	13.20	9.40	11.70	15.23	6.13
26	Germanium	Germanium (µg/g)	0.90	7.20	1.33	1.40	1.40	0.83	0.87	0.83	0.53

* All experiments except moisture content were carried out in dry soils and results are expressed in dry weight basis.

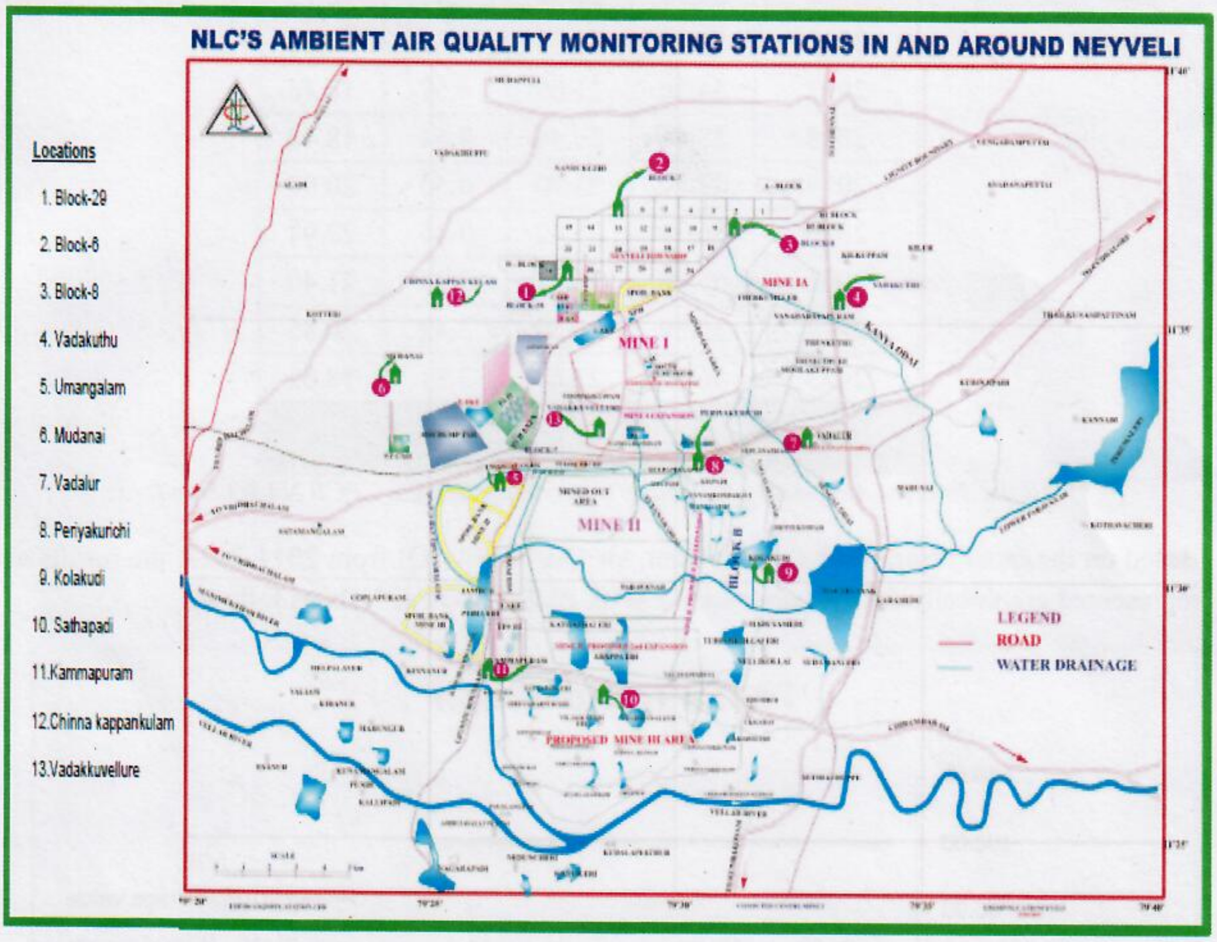
26/09/2023
DM/MB/CARD

24/9/23
DGM/MB/CARD

Ambient Air Quality – 10 Years Trend Graph

NLCIL is continuously monitoring the Ambient Air Quality (AAQ) at 13 locations in and around of the NLCIL premises (covering the nearby villages) through NABL Accredited authorized laboratories and in-house NABL accredited laboratory at Center for Applied Research & Development (CARD). NLCIL's AAQ monitoring is as per the guidelines laid down by Central Pollution Control Board (CPCB) National Ambient Air Quality Standards (NAAQS).

The 13 nos. of locations monitored are plotted in the map below:



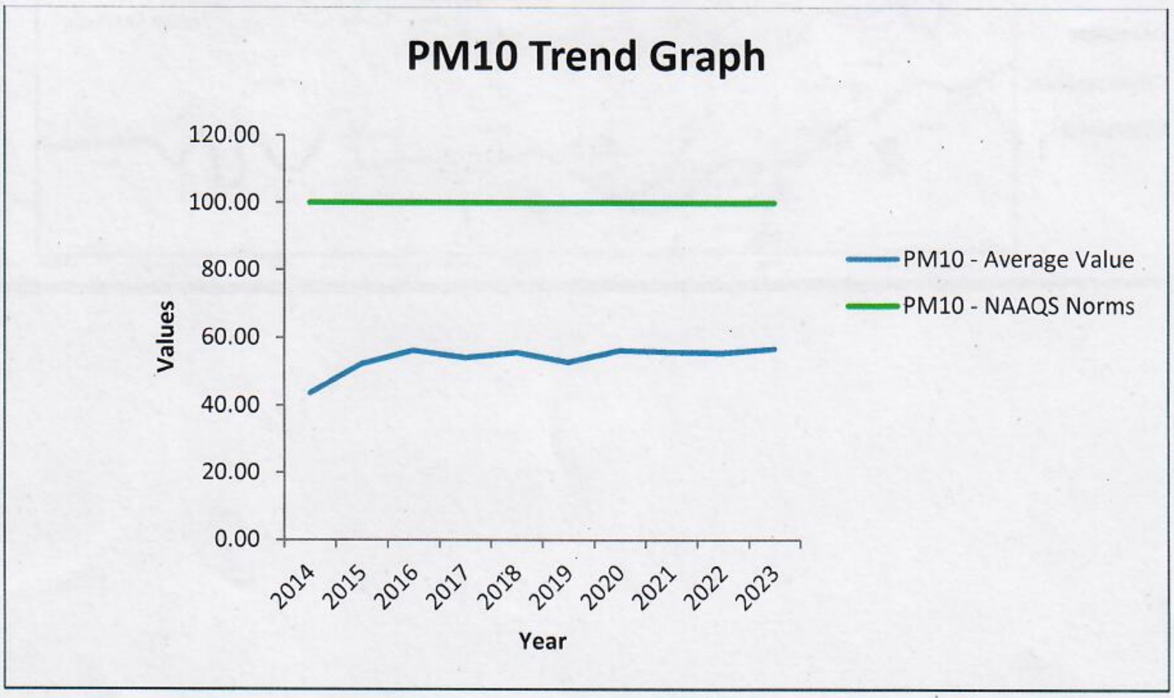
All the Ambient Air Quality Parameters of 13 nos. of AAQ locations are well below the permissible limits as per CPCB NAAQ Standards.

The average values of the 13nos. of locations year-wise are tabulated below:

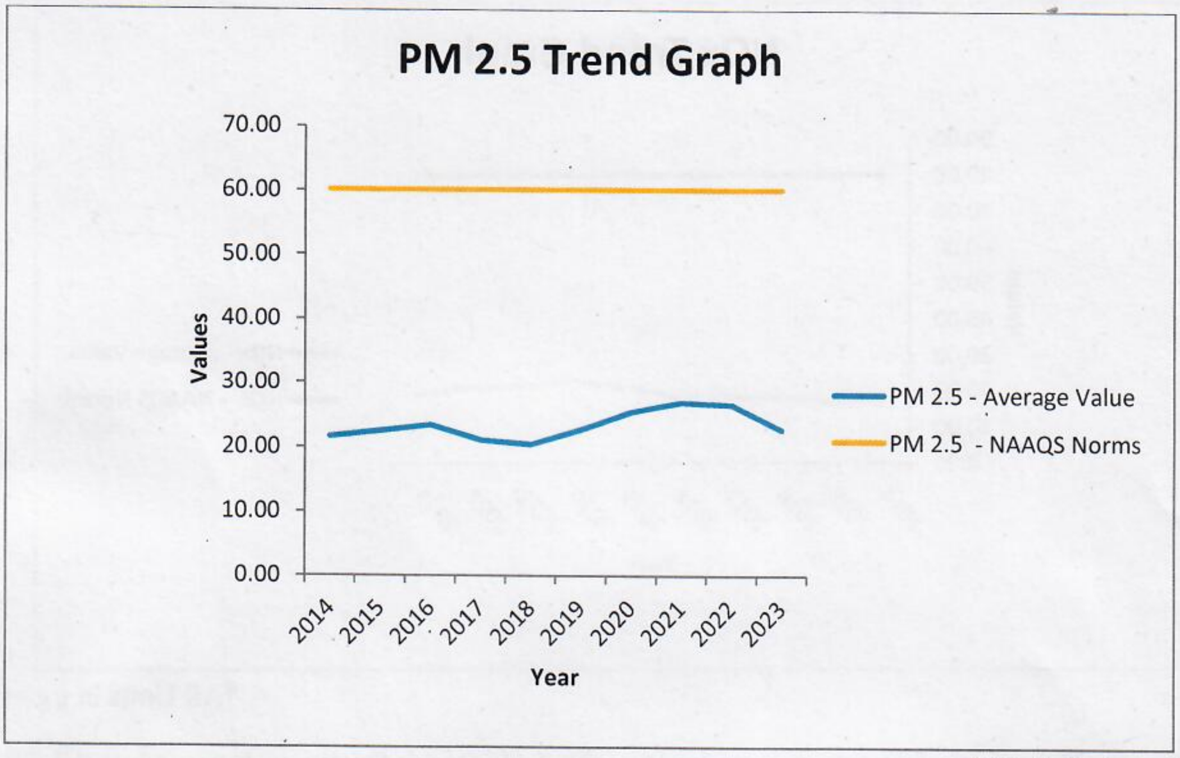
Monitored Results (in μg/m³)				
Year	**PM10**	**PM 2.5**	**SO2**	**NOx**
2014	43.65	21.59	2.70	16.66
2015	52.32	22.42	3.88	16.75
2016	56.19	23.33	4.39	17.83
2017	54.10	21.09	4.57	18.46
2018	55.66	20.46	4.54	18.48
2019	52.87	22.70	4.50	20.97
2020	56.30	25.42	3.46	22.94
2021	55.86	26.91	3.35	21.40
2022	55.59	26.54	3.42	20.85
2023	56.73	22.68	3.51	18.65
NAAQ Standards	**100**	**60**	**80**	**80**

** *All the Ambient Air Quality Parameters are well below the CPCB NAAQ Standards.*

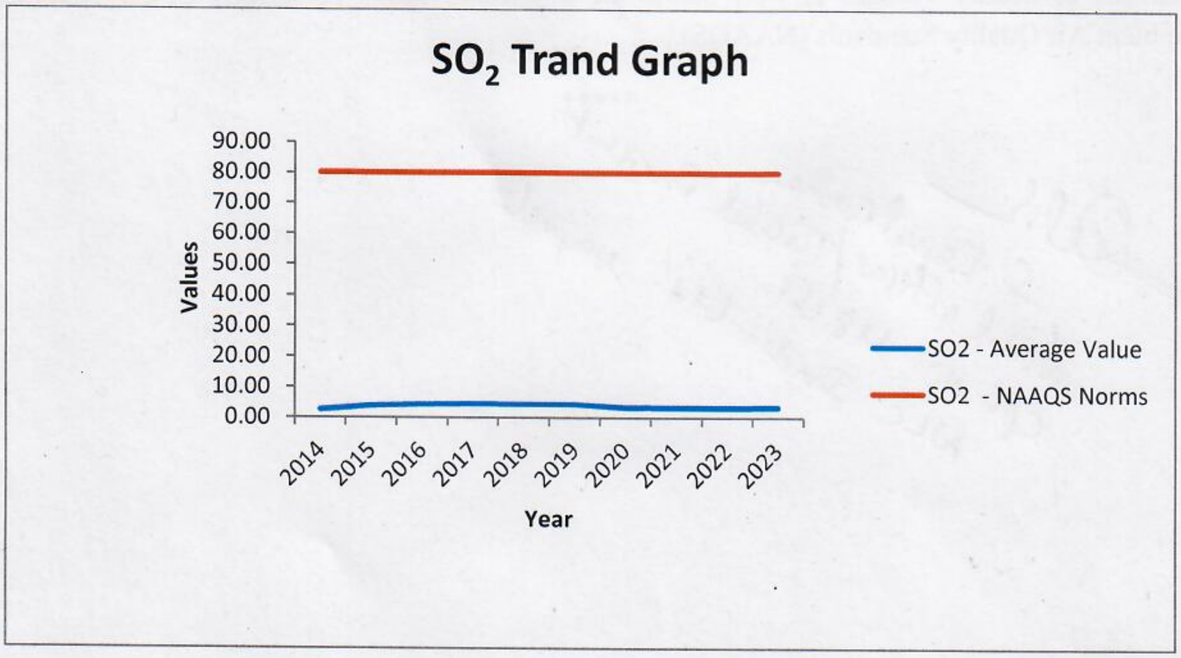
Based on the monitoring results of Ambient Air Quality (AAQ) from 2014-2023, the results are represented graphically for the parameters PM10, PM2.5, SOx & NOx as follows:



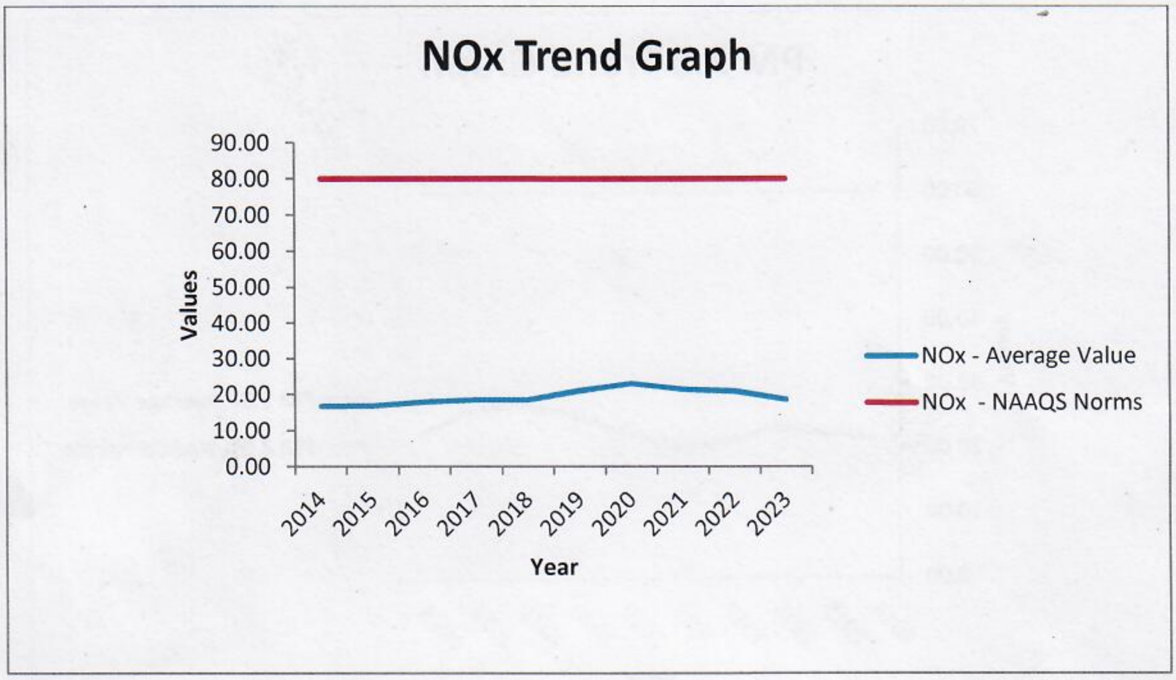
*All Units in μg/m³



*All Units in µg/m^3



*All Units in µg/m^3



*All Units in µg/m³

From the above table & graphs it is evident that the Ambient Air Quality in & around the NLCIL premises & nearby villages is well below the applicable limits prescribed CPCB National Ambient Air Quality Standards (NAAQS).

*****

S. Kamal Basha
Nodal officer / Thermal Environment
CPF NO: 48161.
NLC India Ltd. Neyveli

Ground Water Analysis Report – 10 Years Trend Graphs

NLC India Limited has a Comprehensive Environment Management & Monitoring System in place since inception. The quality of Ground Water from all industrial units of NLCIL and from the surrounding villages in a radius of 20 km is being analyzed periodically through NABL accredited laboratories confirming CPCB Drinking Water Standards (IS 10500:2012) as per Environment Protection Rules'1986. The analysis regime includes testing of Ground Water on monthly basis from Bore-wells / Dug-Wells / Tap Water / Hand Pump Water from all industrial units of NLCIL and from the surrounding villages in a radius of 20 km. The Ground Water analysis is also carried out during the Environmental Impact Assessments and during the Environmental Audits / Comprehensive Environmental Studies.

Last 10 years consolidated results of Ground Water analysis are delineating the fact that all the parameters are well below the permissible limits as per the CPCB Drinking Water Standards, Environment Protection Rules'1986.

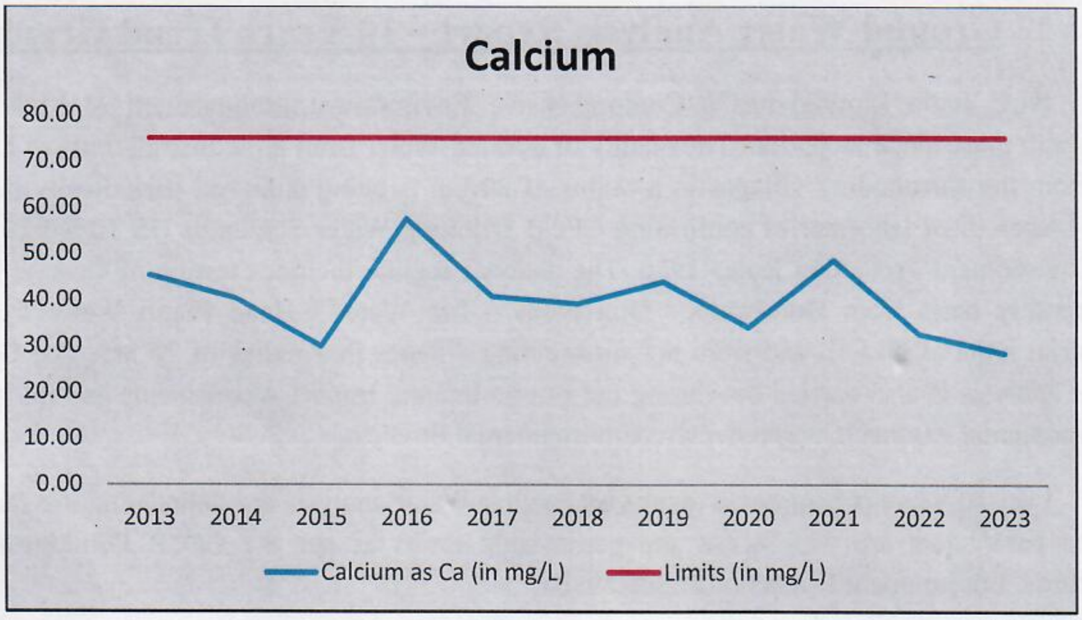
The consolidated annual average results of the Ground water for the past 10 years are given below:

Parameters	Ca	Mg	Fe	Cl	SO4	TDS	Total Hardness	Total Alkalinity	pH
Monitored Range	28-58	9-22	0.25-1.90	25-89	44-126	190-414	121-233	93-152	6.87-8.23
Acceptable Limits (IS 10500-2012)	75	30	0.3	250	200	500	200	200	6.5-8.5
Unit of measurement	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-

Parameters	CN	As	Boron	Cadmium	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Zn
Monitored Range	BDL	BDL	0.21 – 0.38	BDL	0 – 0.02	0 – 0.03	0.11 – 0.13	BDL	0.01 - 0.14	BDL	0 – 0.008	BDL	0.01 – 0.3
Acceptable Limits (IS 10500-2012)	0.05	0.01	0.5	0.003	0.05	0.05	0.3	0.01	0.1	0.001	0.02	0.01	5
Unit of measurement	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

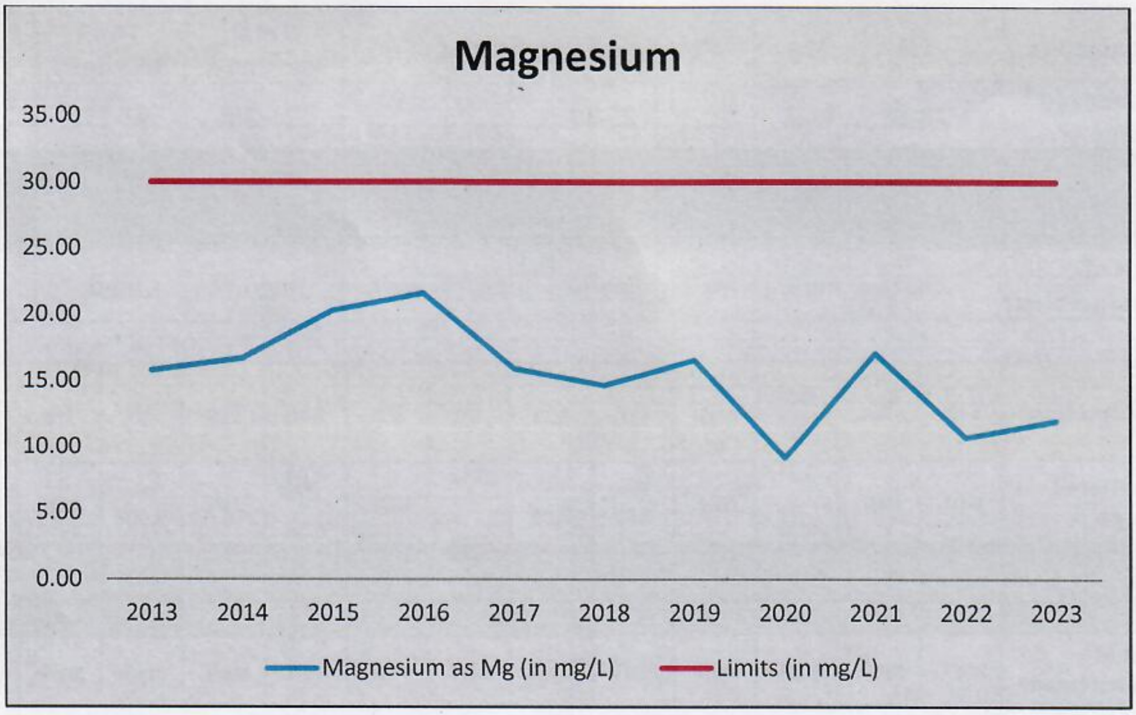
Based on the Ground Water monitoring results observed over the past 10 years, the consolidated year wise averages are graphically represented below:

S. Kamal Basha



*All units in mg/L

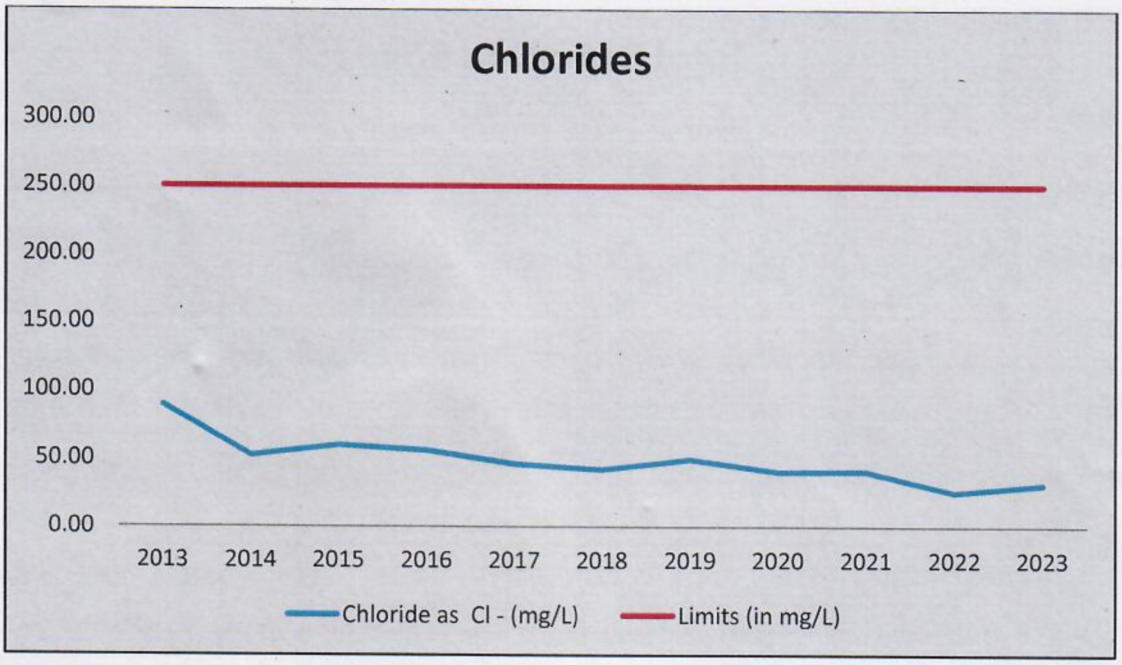
Note: At any point of time, individual reading of the Calcium parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



*All units in mg/L

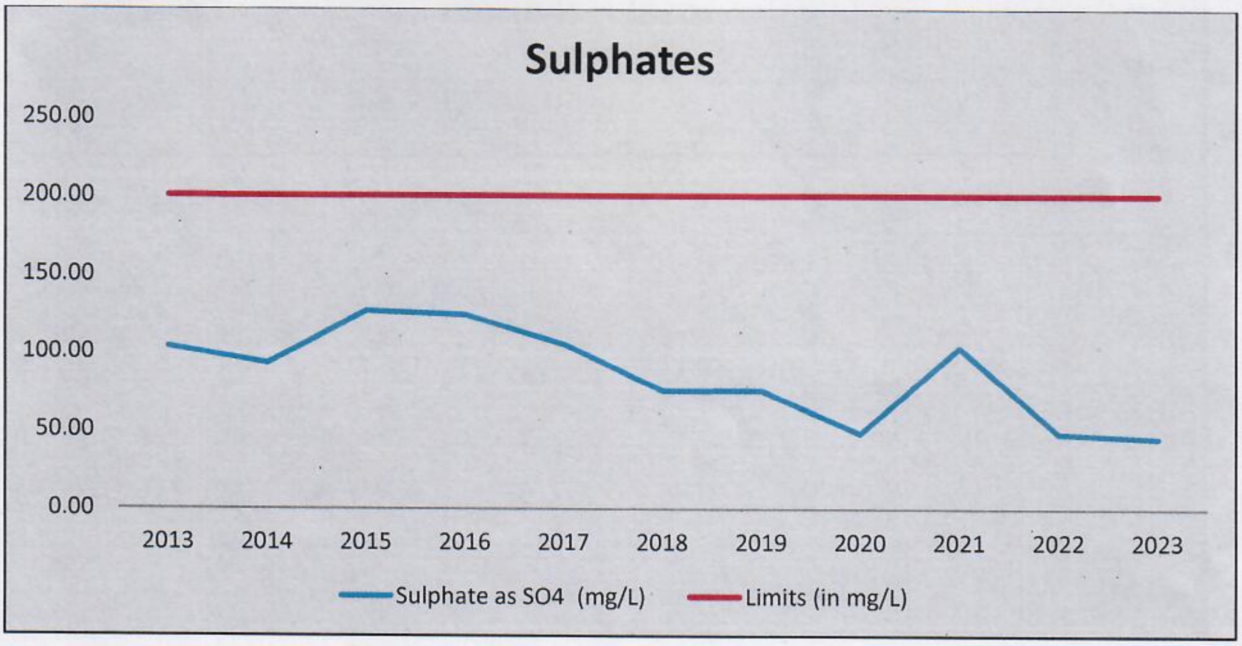
Note: At any point of time, individual reading of the Magnesium parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).

S. Kemal Bobe



*All units in mg/L

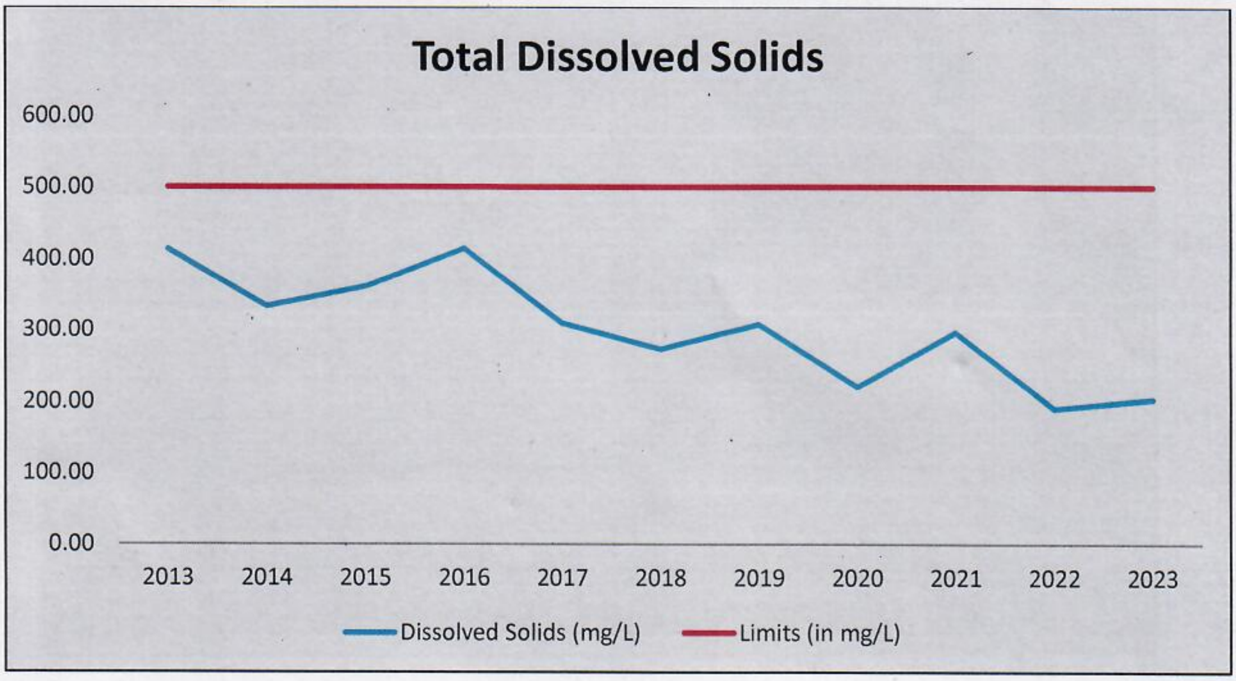
Note: At any point of time, individual reading of the Chlorides parameter has not exceeded the norms as per BIS 10500-2012 drinking water standards.



*All units in mg/L

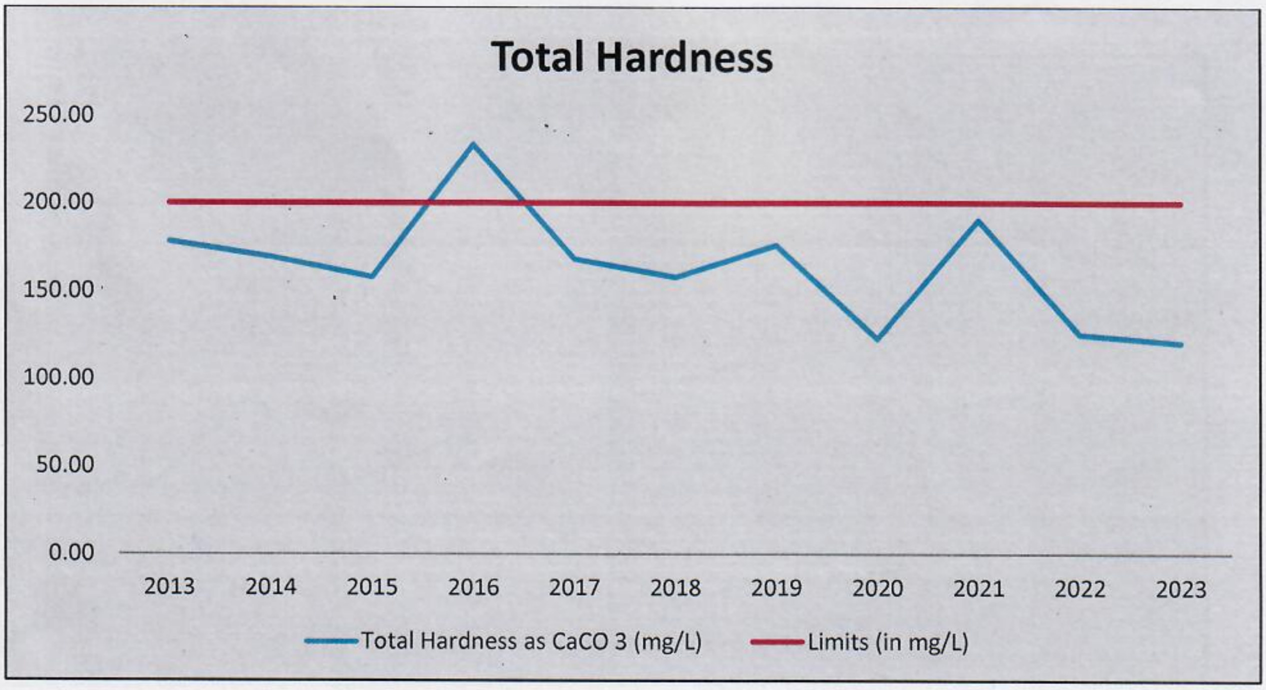
Note: At any point of time, individual reading of the Sulphates parameter has not exceeded the as per CPCB Drinking Water Standards (IS 10500:2012).

S. Kamal Babu



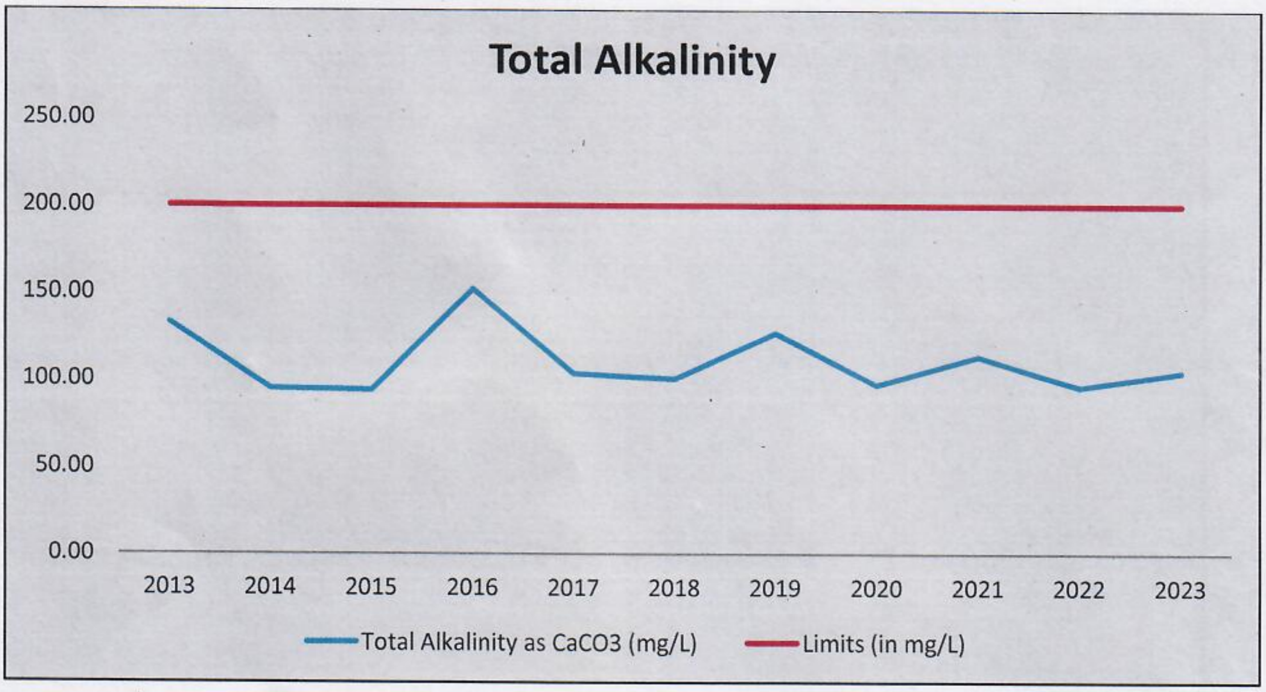
*All units in mg/L

Note: At any point of time, individual reading of the TDS parameter has not exceeded the norms as per as per CPCB Drinking Water Standards (IS 10500:2012).



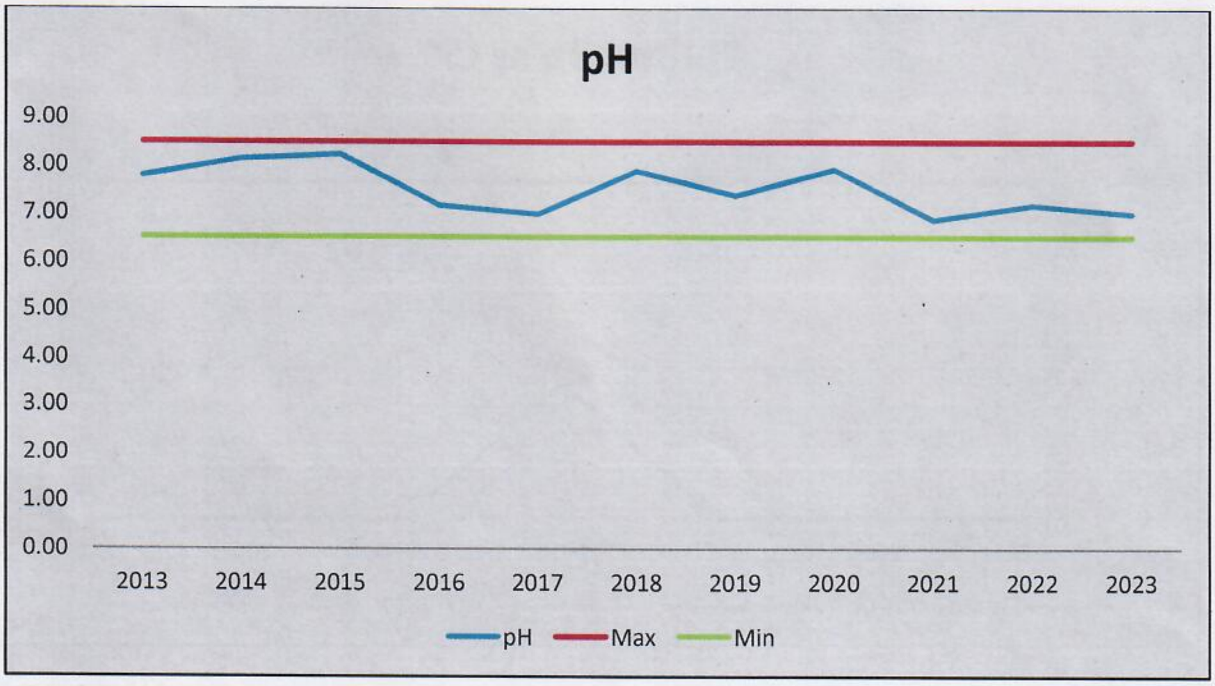
*All units in mg/L

Note: The TDS values from Ground water sourced in mines were found to show variations in previous year. However, for the last 7 years the average Total Hardness parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



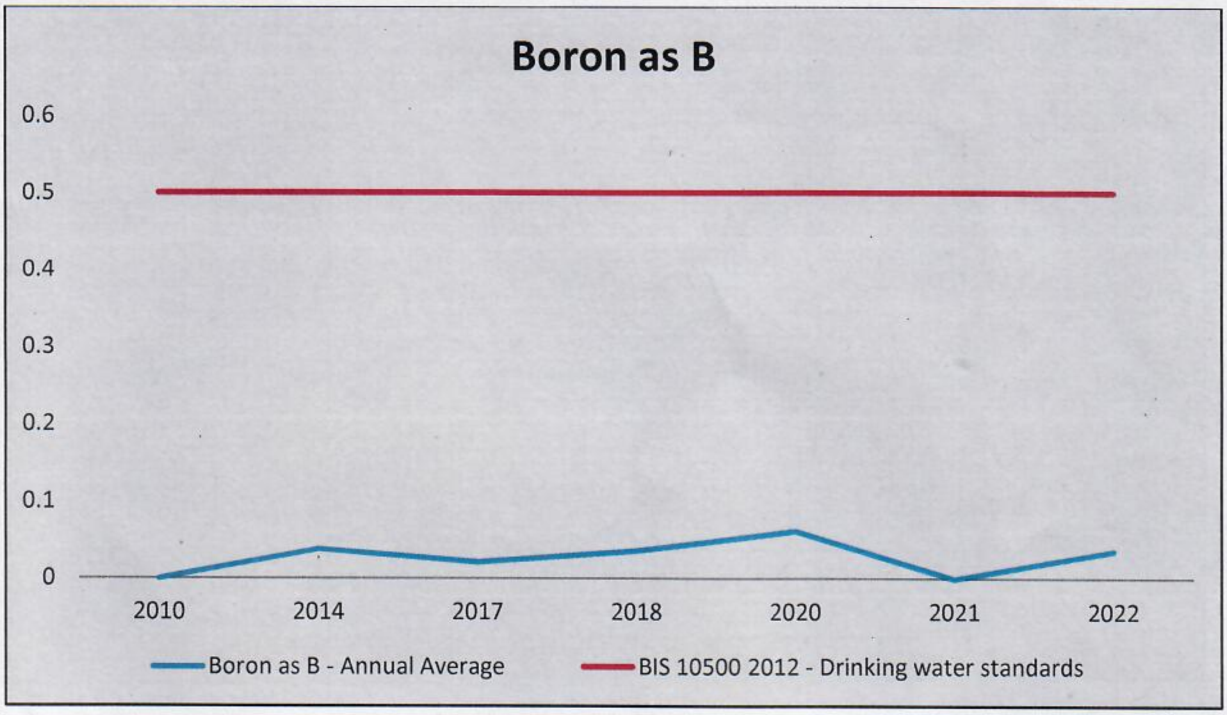
*All units in mg/L

Note: At any point of time, individual reading of the Total Alkalinity parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



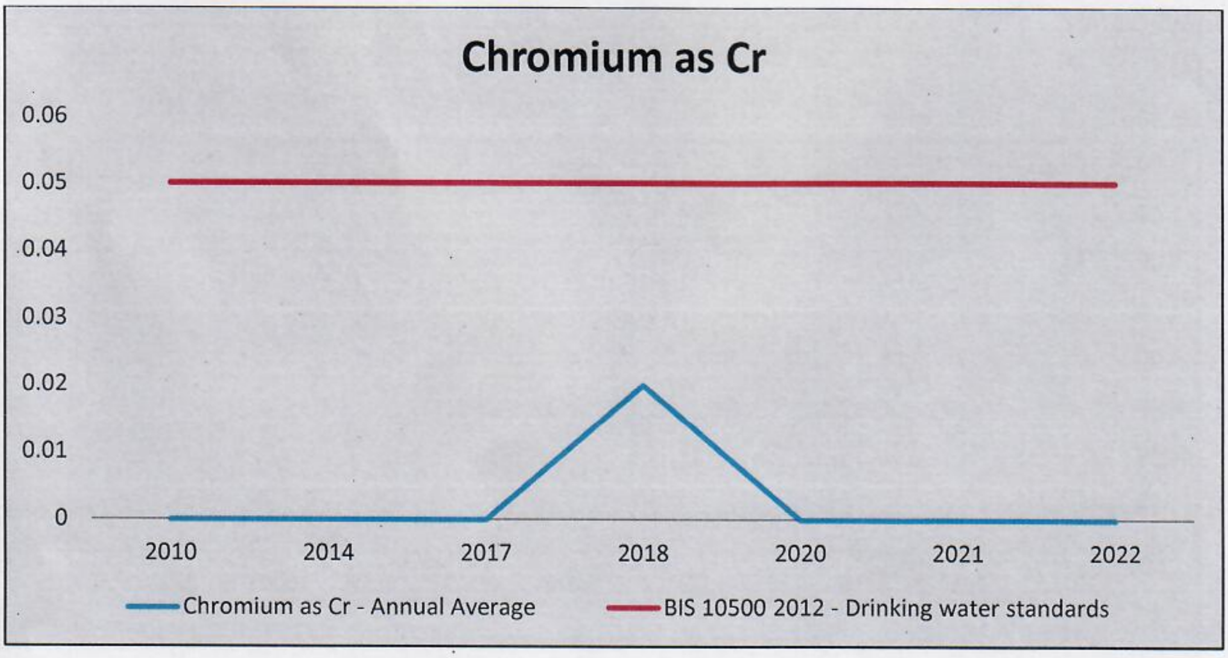
*All units in mg/L

Note: At any point of time, individual reading of the pH parameter is within the norms as per CPCB Drinking Water Standards (IS 10500:2012).



*All units in mg/L

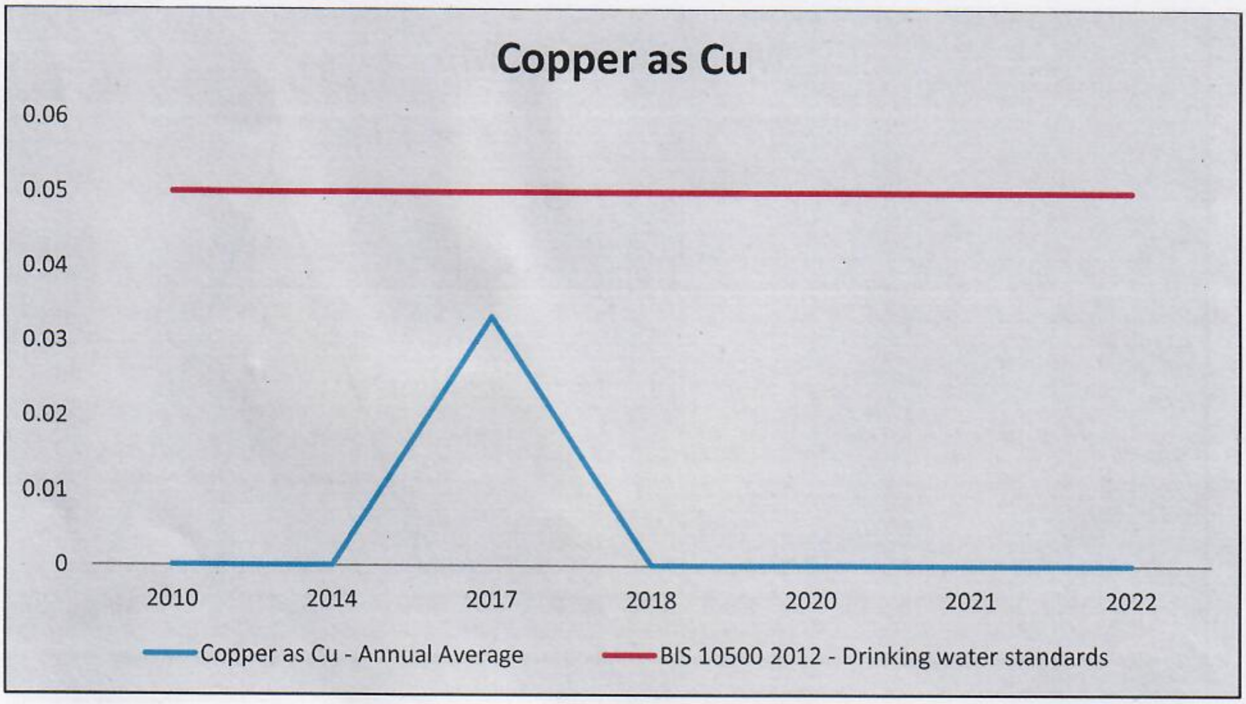
Note: At any point of time, individual reading of the Boron parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



*All units in mg/L

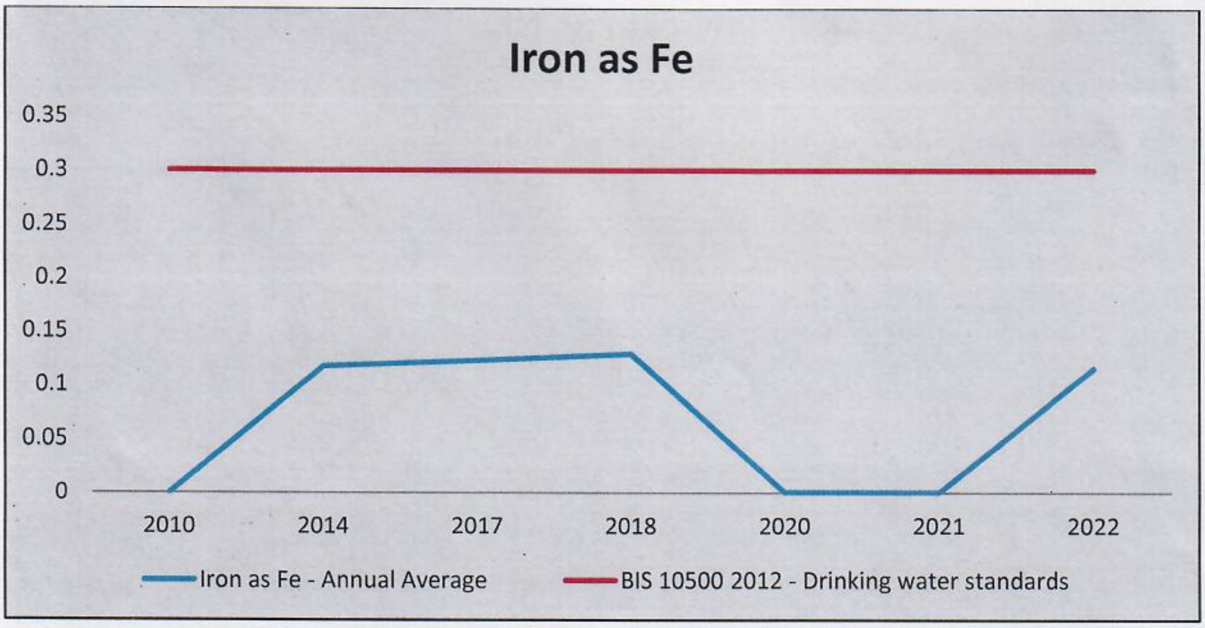
Note: At any point of time, individual reading of the Chromium parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).

S. Kamal Bashe



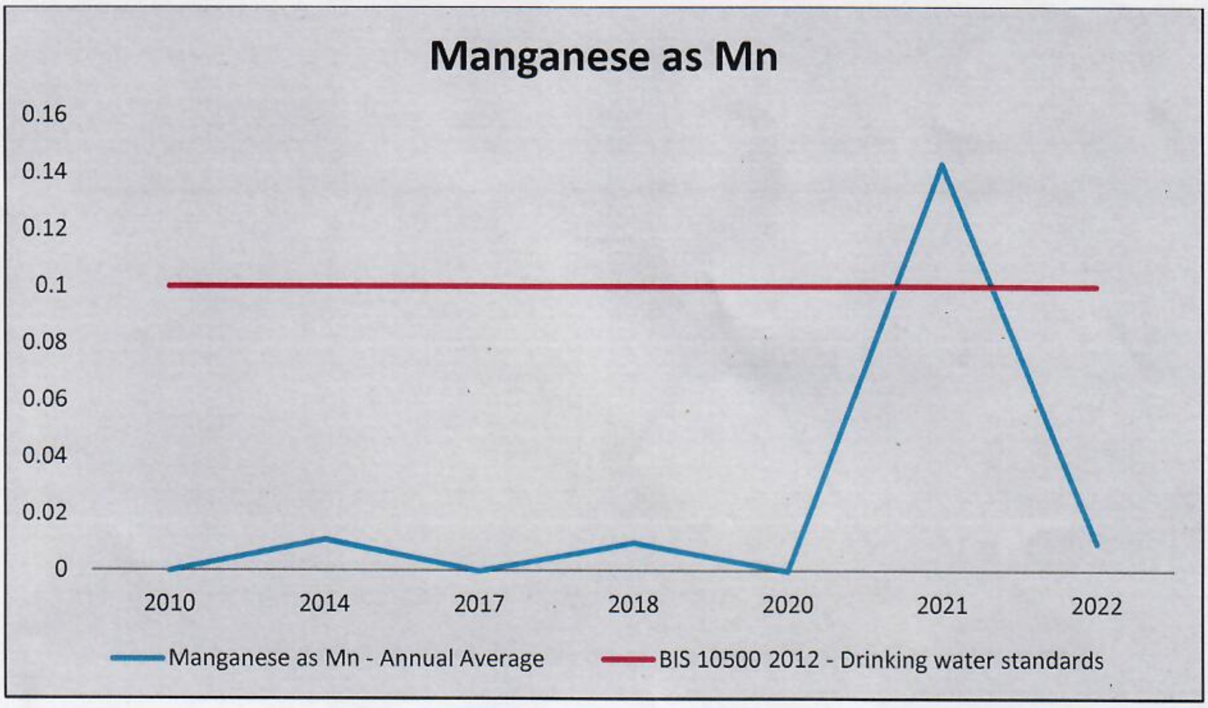
*All units in mg/L

Note: At any point of time, individual reading of the Copper parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



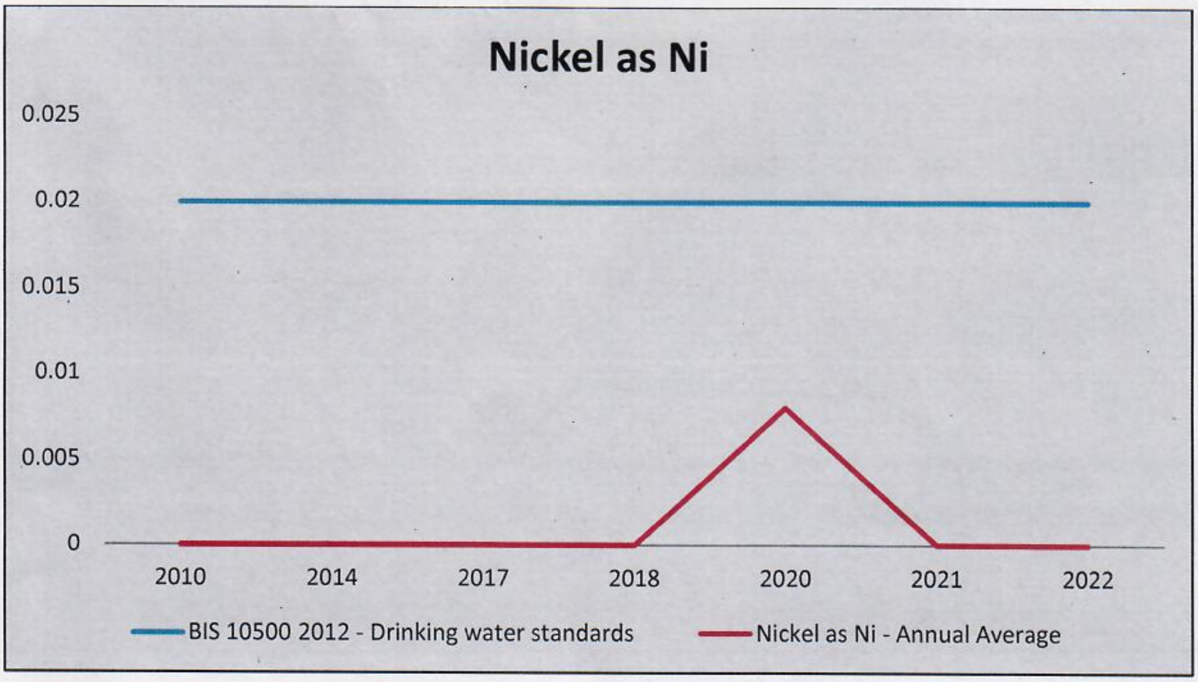
*All units in mg/L

Note: At any point of time, individual reading of the Iron parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



*All units in mg/L

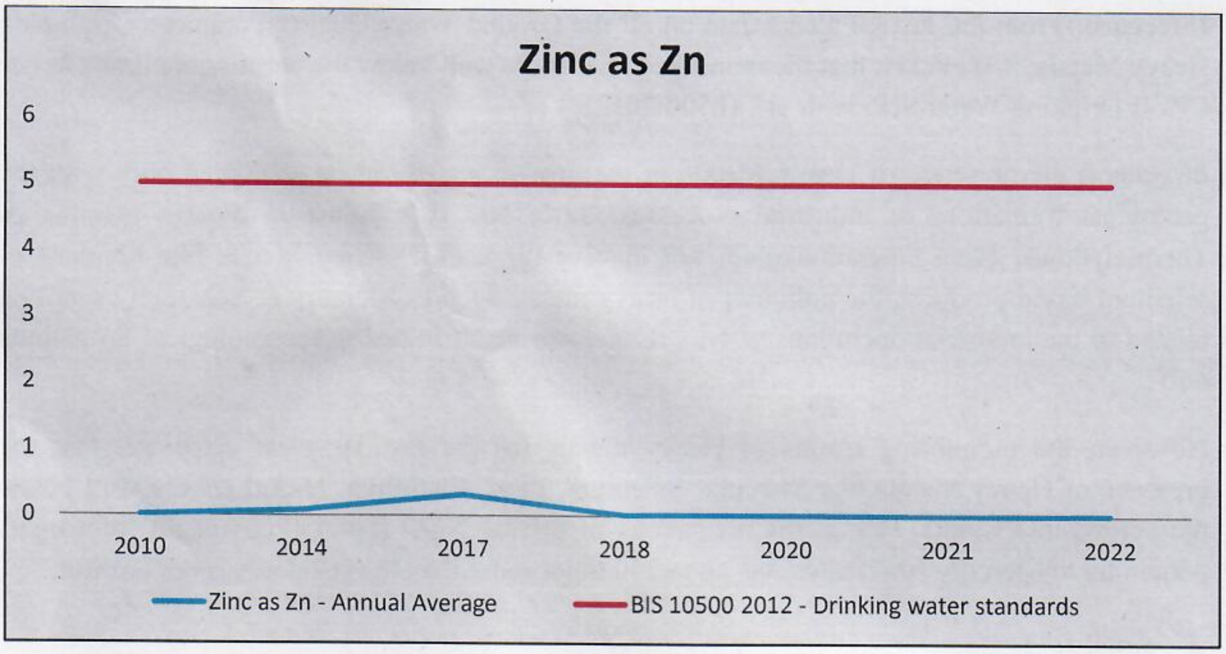
Note: Marginal variation in Manganese values was observed in 2021, which may be attributed to its presence in Geological formations. However, all other individual reading of the Manganese parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



*All units in mg/L

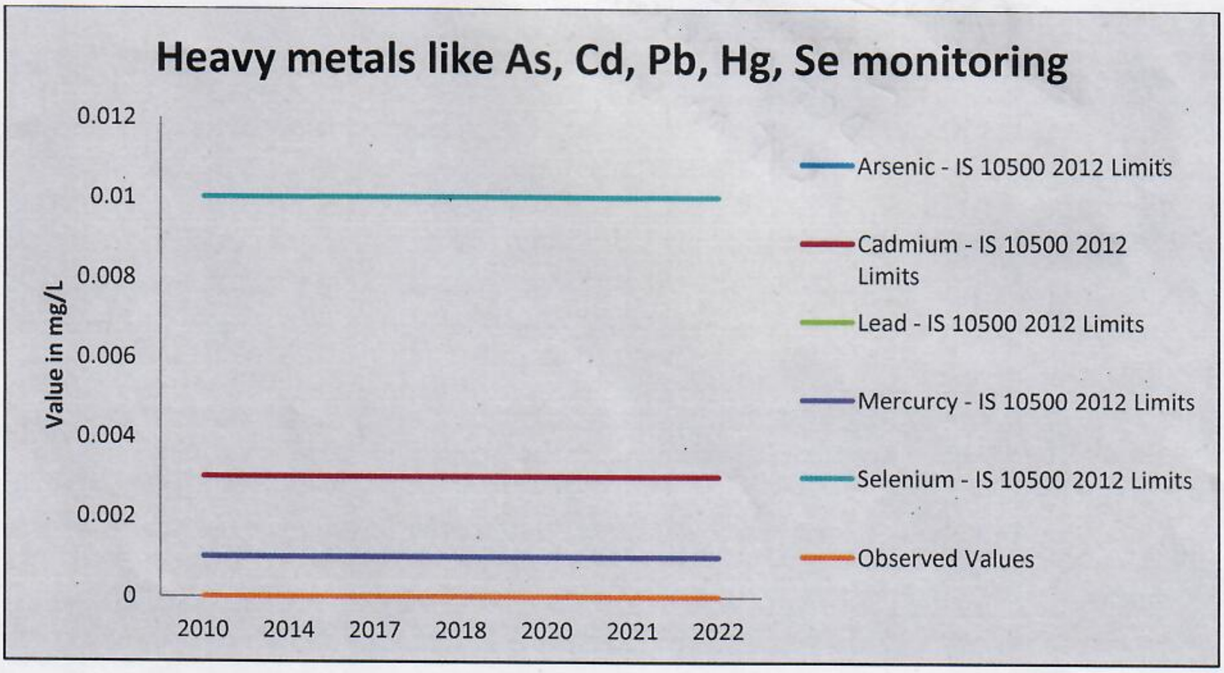
Note: At any point of time, individual reading of the Nickel parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).

J. Kamal Bashe



*All units in mg/L

Note: At any point of time, individual reading of the Zinc parameter has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).



*All units in mg/L

Note: At any point of time, individual reading of the Heavy Metal parameters namely Arsenic, Cadmium, Lead, Mercury & Selenium were observed to be Below Detectable Limits and has not exceeded the norms as per CPCB Drinking Water Standards (IS 10500:2012).

S. Kamal Ashe

Inference: From the last 10 Years data on all the Ground Water Quality Parameters including Heavy Metals, it is evident that the monitored results are well below the permissible limits as per CPCB Drinking Water Standards (IS 10500:2012).

In general the presence of Heavy Metals in the ground water can be attributed only with the geological formations or industrial processes. Since NLCIL's industrial process (Mining & Thermal Power Plant Operation) does not involve the use of Heavy Metals like Mercury or selenium based products, the pollution of Heavy metals such as Mercury & Selenium cannot be related to the industrial operations of NLCIL and can be attributed to the geological formations only.

However, the monitoring results of Heavy metals for the last 10 years delineates that the presence of Heavy Metals like Mercury, Selenium, Lead, Cadmium, Nickel etc are well below the permissible Limits. Hence, the allegations of private NGO report (Poovulagin Nanbargal) pertaining to Mercury contaminations up to 250 times more than the standards is not truthful.

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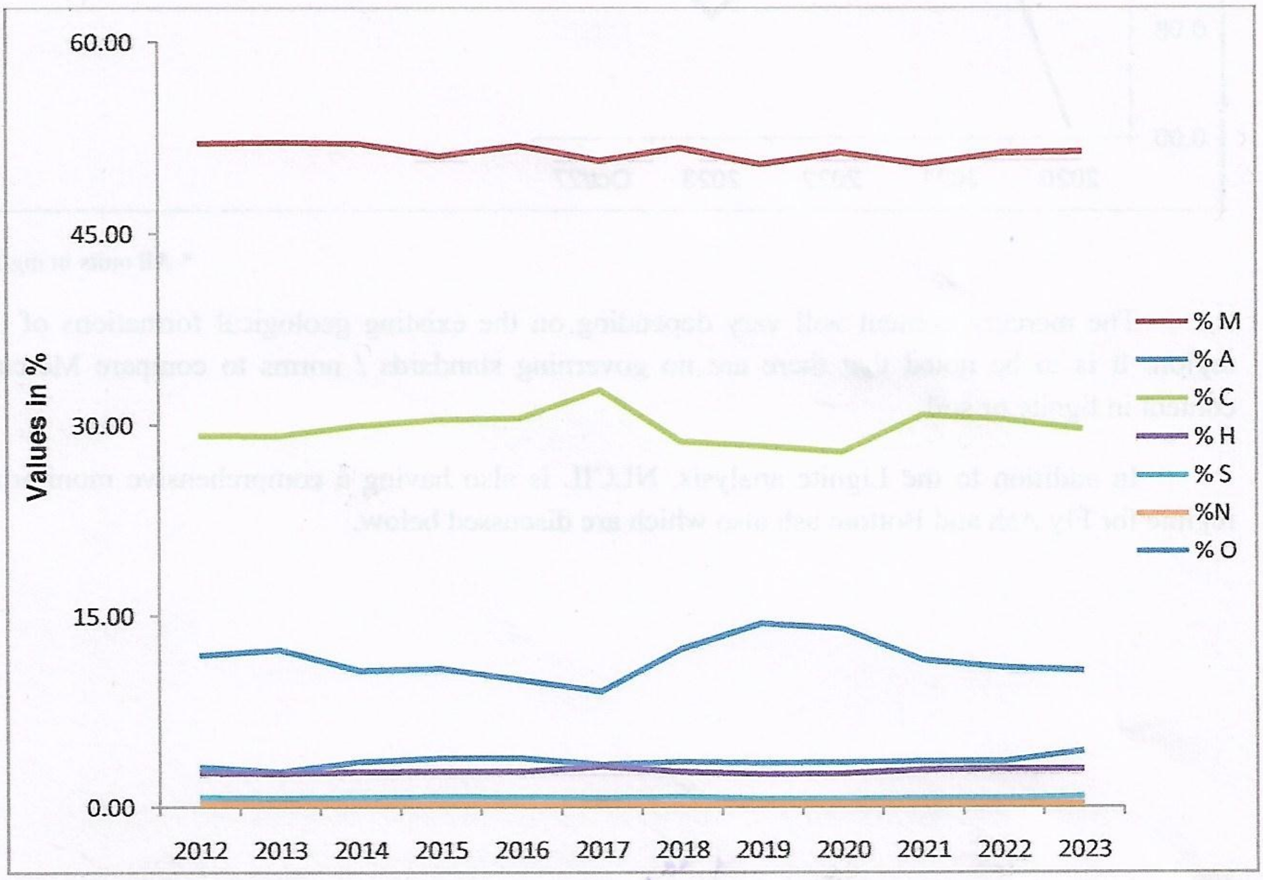
Lignite & Ash Analysis Reports – Trend Graphs

Lignite Analysis Report:

For more than six glorious decades, NLC India Limited has been a forerunner amongst the Public Sector Enterprises in the country in the energy sector, contributing to a lion's share in lignite production and significant share in thermal and renewable energy generation. NLCIL operates 3 opencast Lignite Mines (namely Mine-I, Mine-IA & Mine-II) of total installed capacity 32.5 Million Tonnes Per Annum (MTPA) at Neyveli. The mined-out Lignite is being analyzed (Proximate & Ultimate analysis) periodically by NABL accredited Laboratories. The monitored parameters are Moisture (%M), Ash (%A), Carbon (%C), Hydrogen (%H), Sulphur (%S), Nitrogen (%N) & Oxygen (%O) and Mercury (Hg).

The outline of the monitored results (annual Avg.) of the Ultimate Analysis for the last 10 years is tabulated & represented graphically as below:

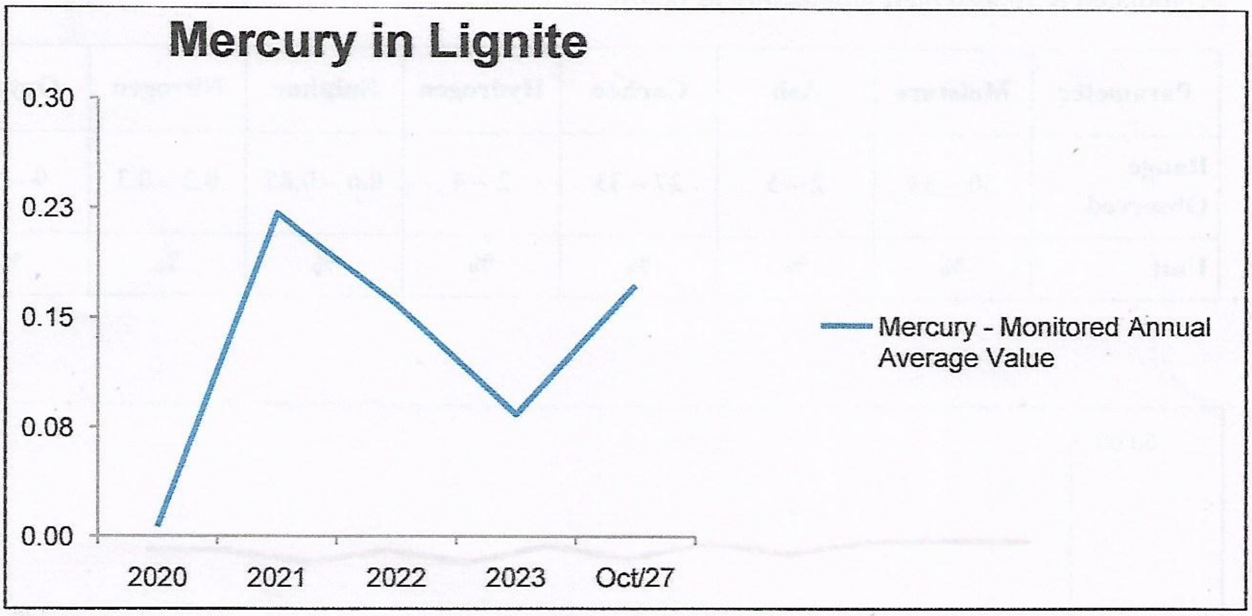
Parameter	Moisture	Ash	Carbon	Hydrogen	Sulphur	Nitrogen	Oxygen
Range Observed	50 – 53	2 – 5	27 – 33	2 – 4	0.6 – 0.85	0.2 – 0.3	9 – 15
Unit	%	%	%	%	%	%	%



S. Kamal Basha

The Mercury analysis in lignite, for the past 5 years (Annual Average) is tabulated & represented graphically below:

Parameter	2020	2021	2022	2023	Oct - 2023
Monitored Value – Range of Annual Averages	0 – 0.006	0.158 – 0.306	0.09 – 0.228	0 – 0.084	0.145 – 0.228
Unit	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg



* All units in mg/Kg

The mercury content will vary depending on the existing geological formations of the region. It is to be noted that there are no governing standards / norms to compare Mercury content in lignite or soil.

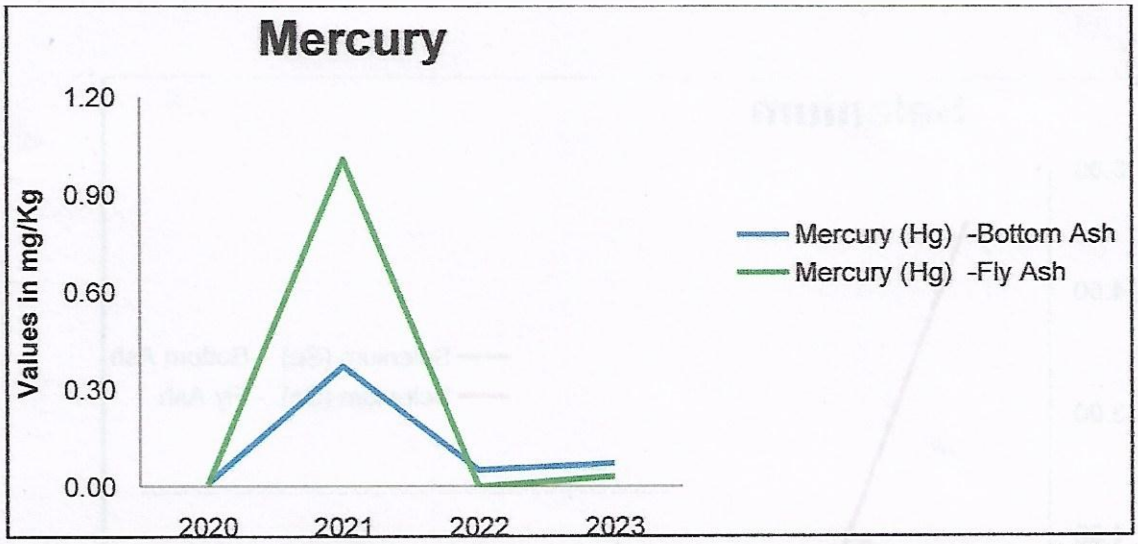
In addition to the Lignite analysis, NLCIL is also having a comprehensive monitoring regime for Fly Ash and Bottom ash also which are discussed below.

S. Kamal Basha

Fly Ash & Bottom Ash:

In addition to Physical & Chemical Properties of Fly Ash and Bottom Ash, NLCIL is also periodically monitoring Heavy Metal content. The monitored results (Annual Avg.) are tabulated and represented graphically.

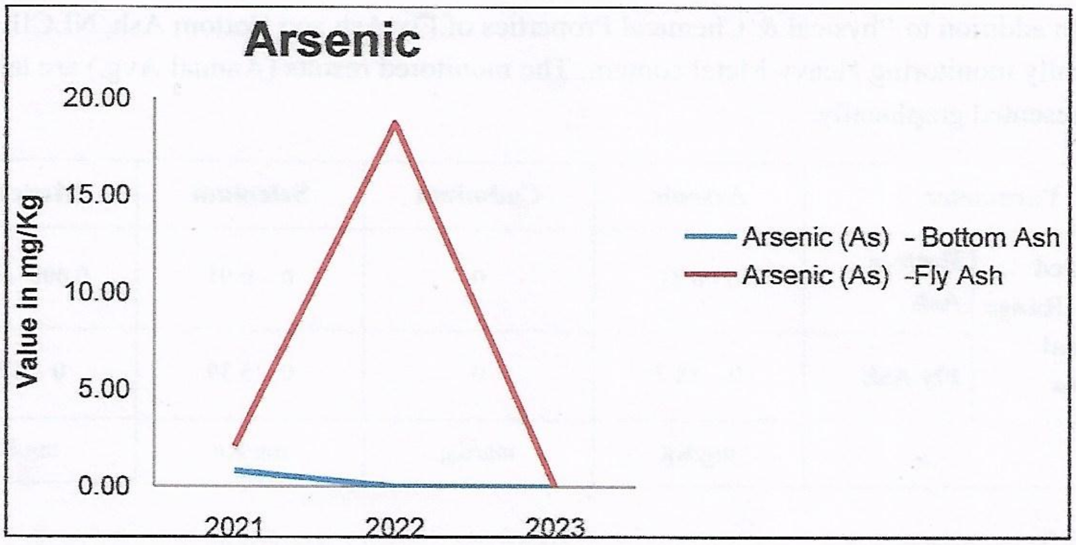
Parameter		Arsenic	Cadmium	Selenium	Mercury
Monitored Value – Range of Annual Averages	Bottom Ash	0 - 0.81	0	0 – 0.91	0.008 – 0.37
	Fly Ash	0 – 18.7	0	0 – 5.39	0 – 1.01
Unit		mg/Kg	mg/Kg	mg/Kg	mg/Kg



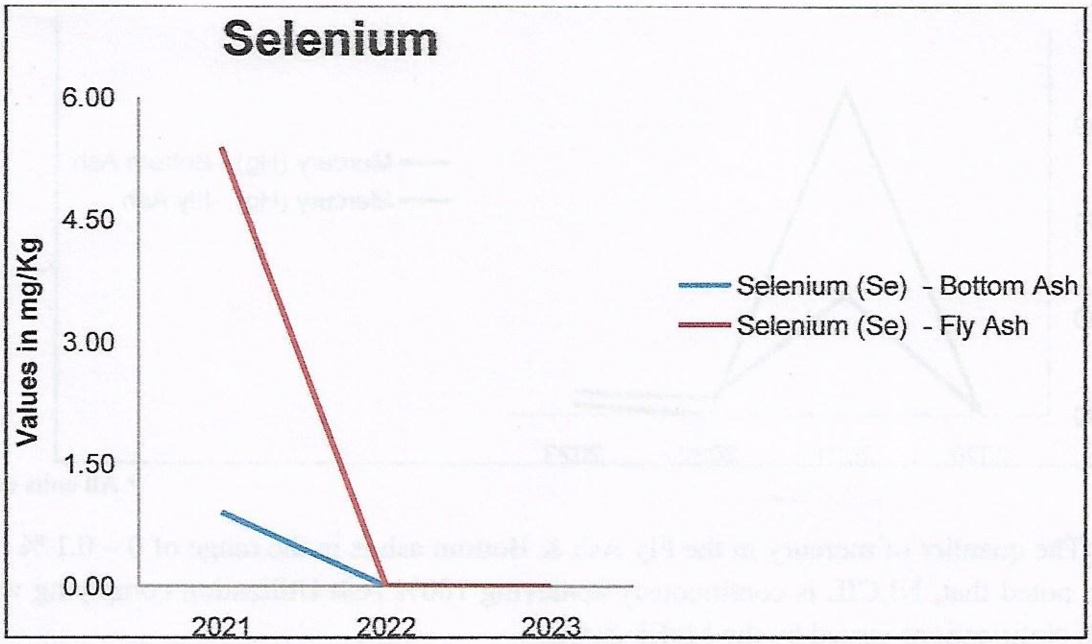
* All units in mg/Kg

The quantity of mercury in the Fly Ash & Bottom ash is in the range of 0 – 0.1 % only. It is to be noted that, NLCIL is continuously achieving 100% Ash Utilization complying with the Fly Ash Notifications issued by the MoEF & CC.

S. Kamal Basha

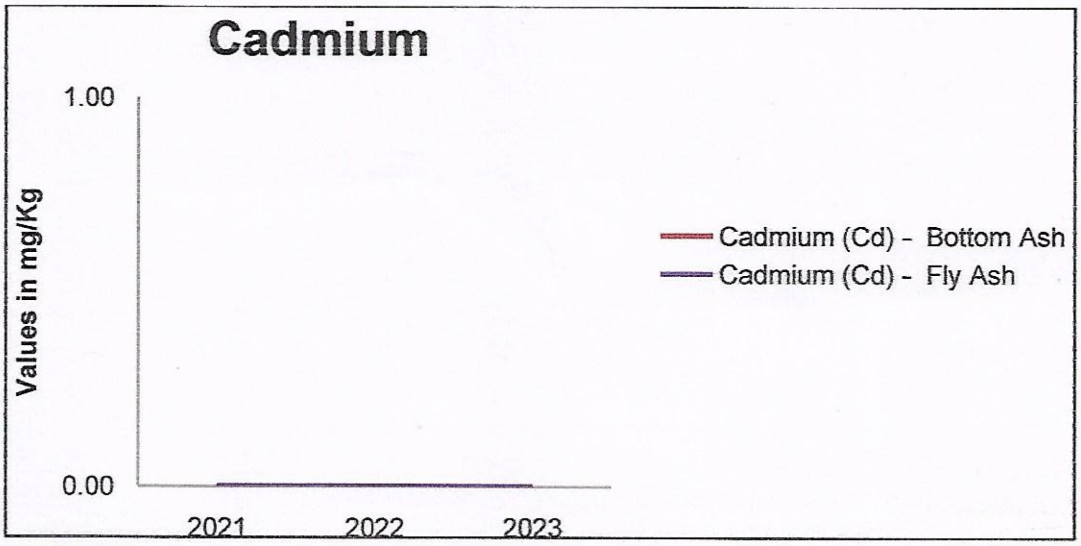


* All units in mg/Kg



* All units in mg/Kg

S. Kamal Basha



* All units in mg/Kg

Inferences:

From the analysis of the data & trend graphs, it is evident that the presence of Heavy metals in Fly ash & bottom ash are in traces only and cannot attribute to contamination of Environment. Since, NLCIL activities do not involve in usage or generation of any Heavy metals in its industrial processes (Mining & Thermal Power Generation), the presence of such heavy metals may only be due Natural Geological formations only.

The monitored content of Mercury in lignite has not been proven to cause such high pollution levels neither in air nor in water as mentioned in the Private NGO report (Poovulagin Nanbargal).

NLCIL being a 67 year old responsible Public Sector Enterprise, continuing its sustainable business through Mining & Power Generation since its inception. As alleged by the Private NGO, if Heavy Metal pollution from the industrial activities into the Environment had been true, it would have caused irreversible Environmental damage to the Eco-system. But it is to be noted that, through regular Environmental Quality Monitoring by statutory authorities (TNPCB & CPCB) in NLCIL and surrounding villages (20 km radius) it is found that no such Environmental damage is observed.

In addition, based on the detailed submission filed by the Statutory bodies (TNPCB, CPCB, TWAD, CMWSSB) also confirms to the statement that "No severe mercury pollution" is observed in the region around NLCIL, Neyveli. Hence, the allegations claimed through the Private NGO Report (Poovulagin Nanbargal) are untruthful.

However, on the contrary NLCIL has established a Green Eco-Habitat with extensive Greenbelt Development in & around its industrial periphery & its reclaimed mines area. Being a responsible Corporate, NLCIL is taking due care of its Environment & it surroundings by adopting sustainable development measures for the past 6 decades.

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NLC India Ltd

Effluent Analysis Report – 10 Years Trend Graphs

NLC India Limited has a Comprehensive Environment Management & Monitoring System in place since inception. The treated effluent quality from all industrial units of NLCIL is beinganalyzed periodically through NABL accredited laboratories confirming to the CPCB General Standards for Discharge of Effluents as per Schedule VI of Environment Protection Rules'1986. The treated effluent is being recycled / reused in the process / for greenbelt development.

Last 10 years consolidated results are delineating the fact that all the parameters are well below the permissible limits as per the CPCB General Standards for Discharge of Effluents as per Schedule VI of Environment Protection Rules'1986.

The consolidated average results of the effluents for the last 10 years are given below:

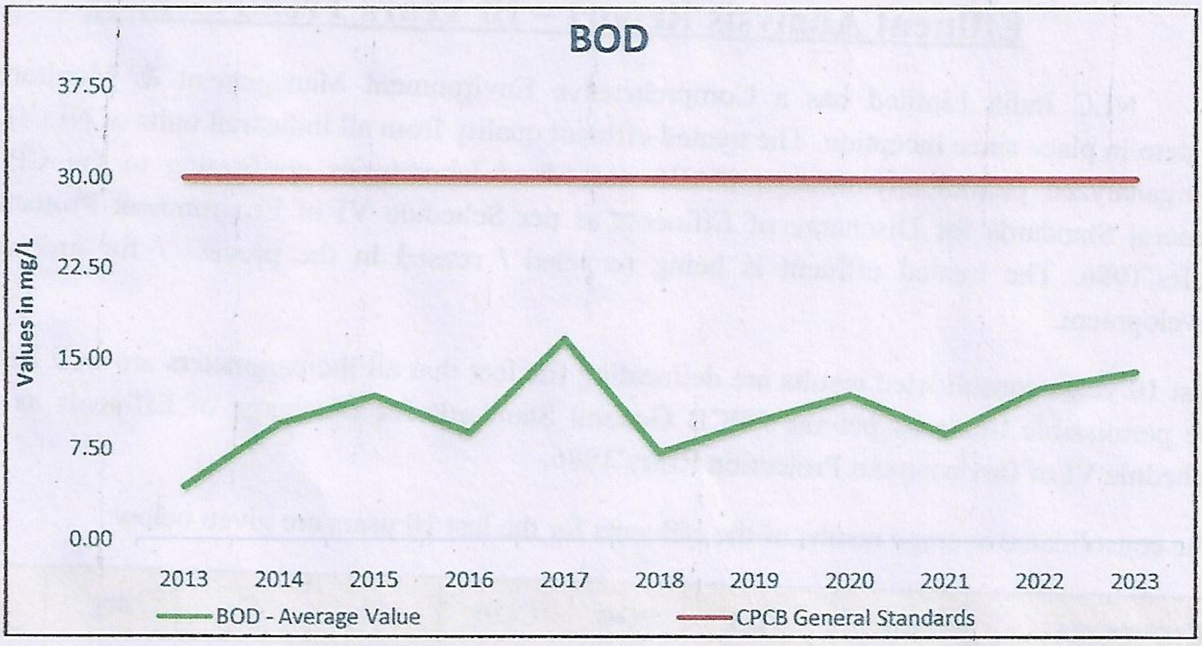
Parameters	pH	TDS	BOD	COD	Cl	Ca	Mg	Bo
Monitored Range	7.14-7.9	448-747	4-17	24-104	67-195	56-72	18-25	0.01-0.11
CPCB Discharge Standards	**5.5-9.0**	-	**30**	**250**	-	-	-	-
Unit of measurement	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Heavy metals:

Parameters	Ba	Cd	Pb	Cr	Hg	Ni	Se	Zn
Monitored Range	0-0.12	0.0003-0.19	0.01-0.1	0.003-0.02	0.001-0.019	0.001-0.04	0.003-0.02	0 – 0.29
CPCB Discharge Standards	-	**2.0**	**0.1**	**0.1**	**0.01**	**3.0**	**0.05**	**5.0**
Unit of measurement	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

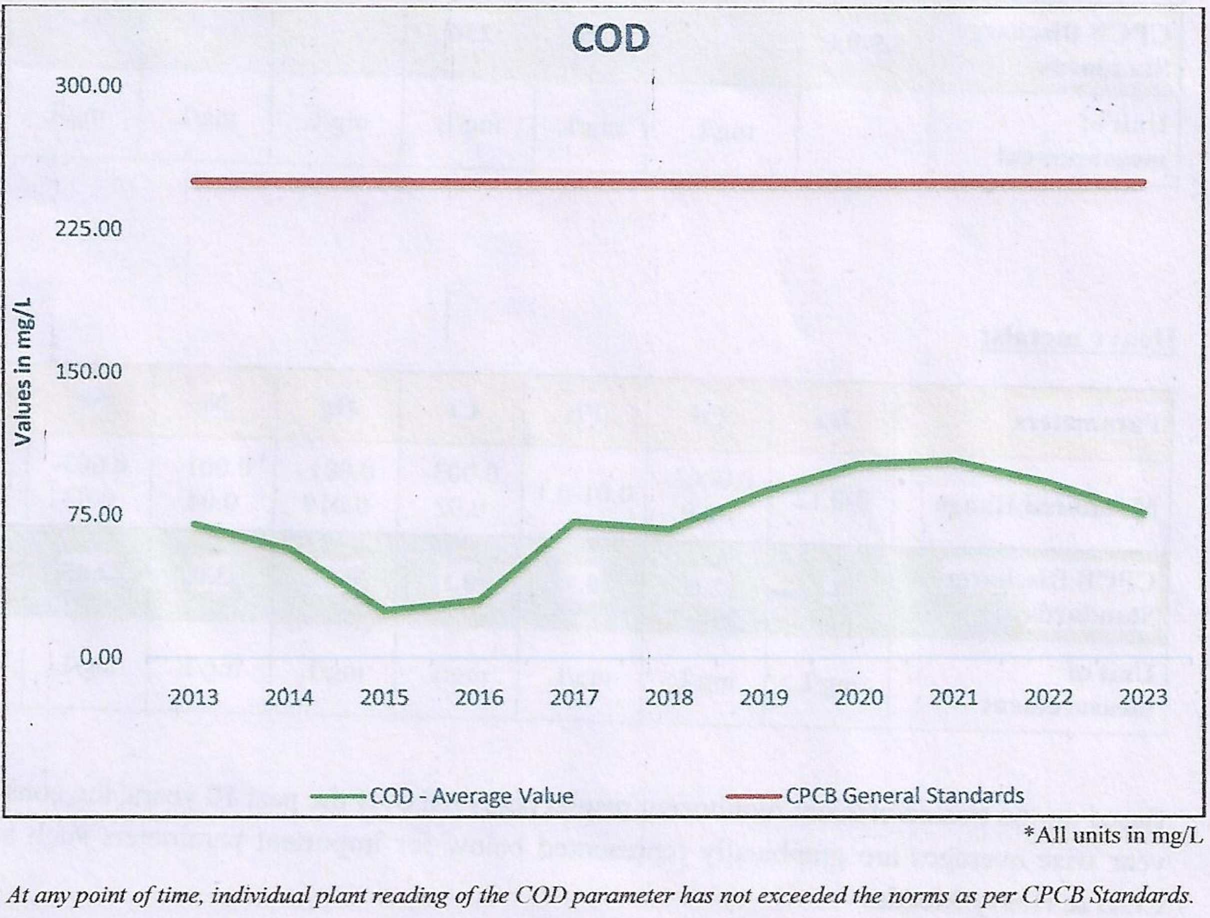
Based on the treated effluent monitoring results observed over the past 10 years, the consolidated year wise averages are graphically represented below for important parameters such as BOD, COD & Heavy Metals:

S. Kamal Basha



*All units in mg/L

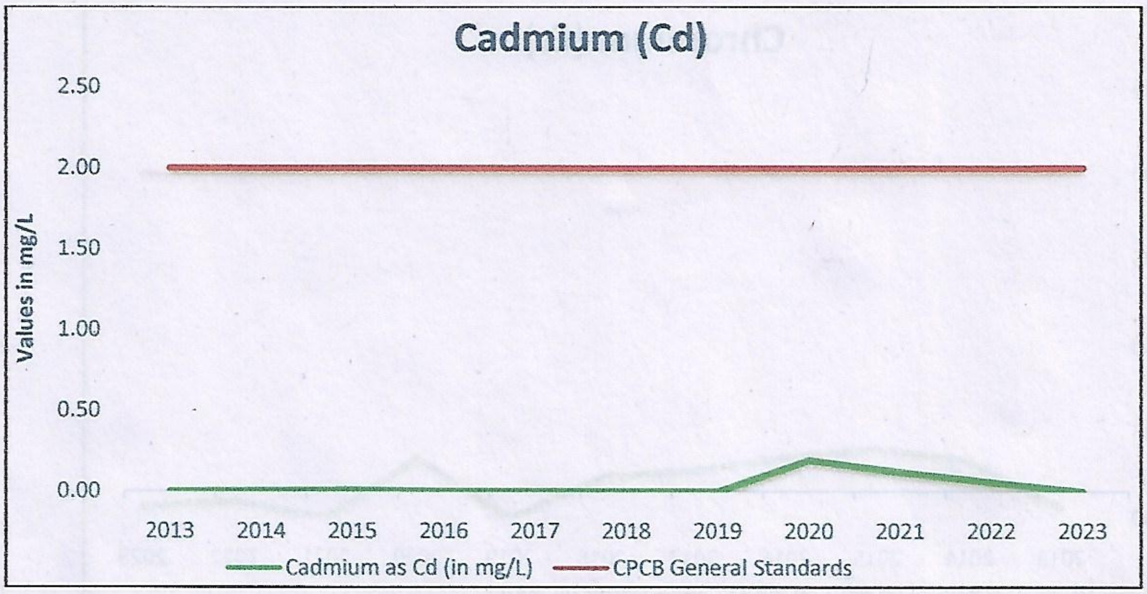
Note: At any point of time, individual plant reading of the BOD parameter has not exceeded the norms as per CPCB Standards.



*All units in mg/L

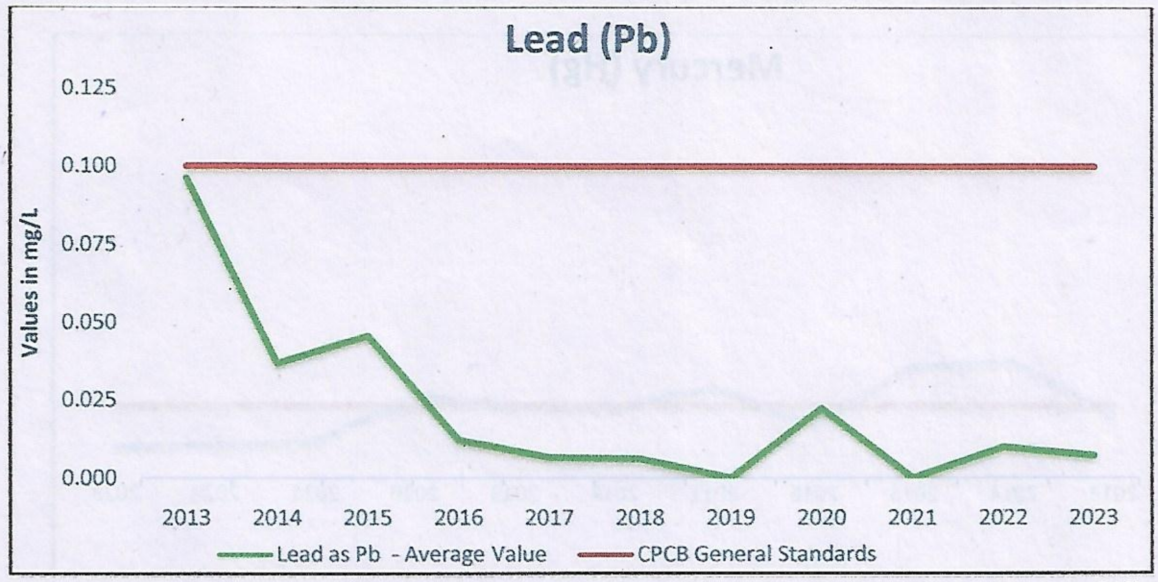
Note: At any point of time, individual plant reading of the COD parameter has not exceeded the norms as per CPCB Standards.

S. Kamal Basha



*All units in mg/L

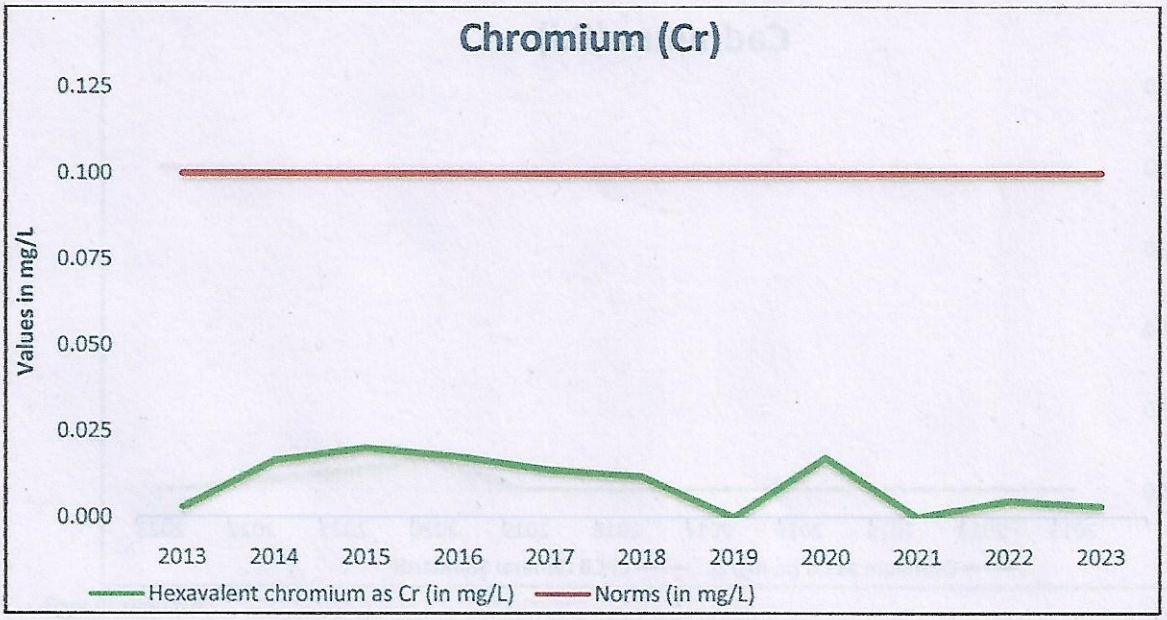
Note: At any point of time, individual plant reading of the Cd parameter has not exceeded the norms as per CPCB Standards.



*All units in mg/L

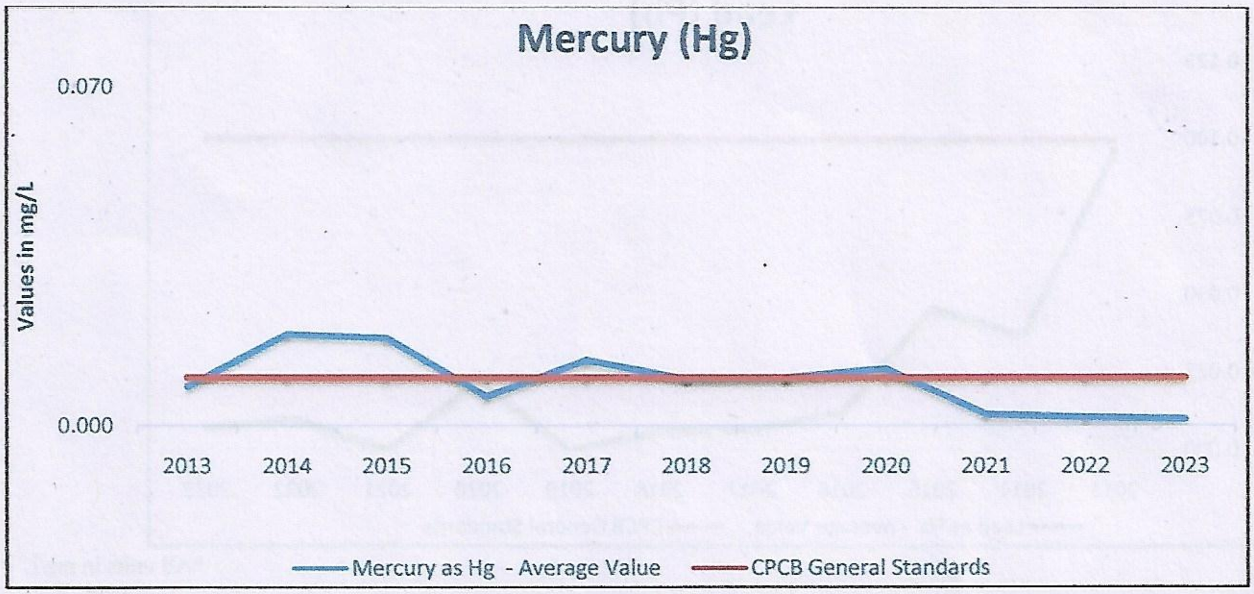
Note: At any point of time, individual plant reading of the Pb parameter has not exceeded the norms as per CPCB Standards.

S. Kamal Basha



*All units in mg/L

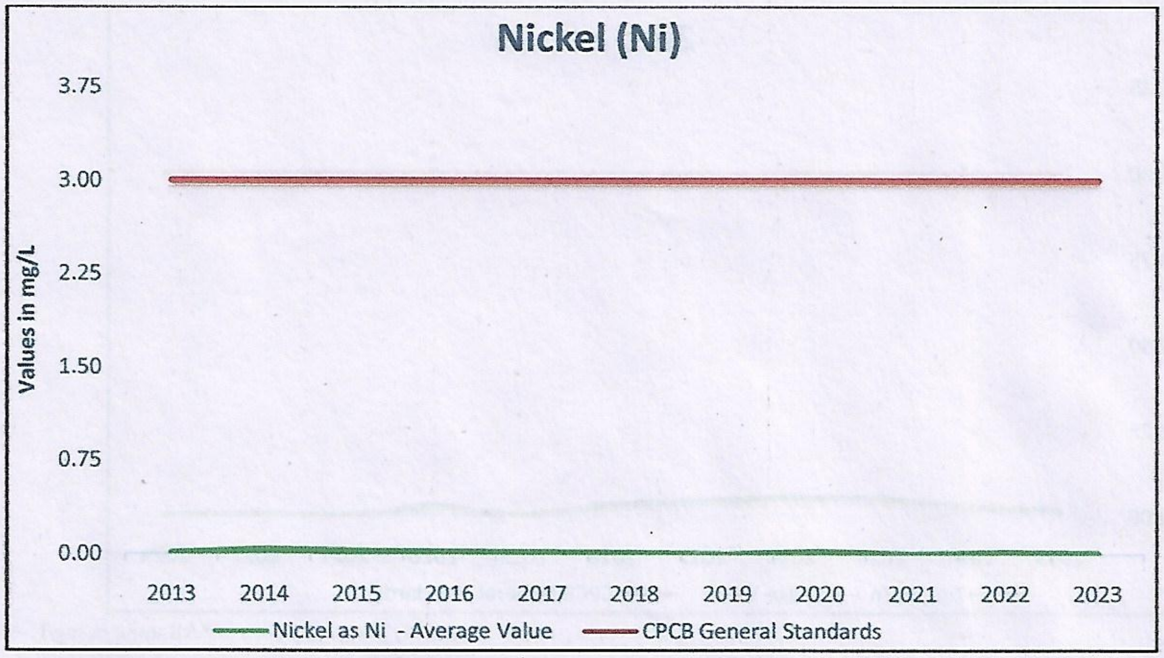
Note: At any point of time, individual plant reading of the Cr parameter has not exceeded the norms as per CPCB Standards.



*All units in mg/L

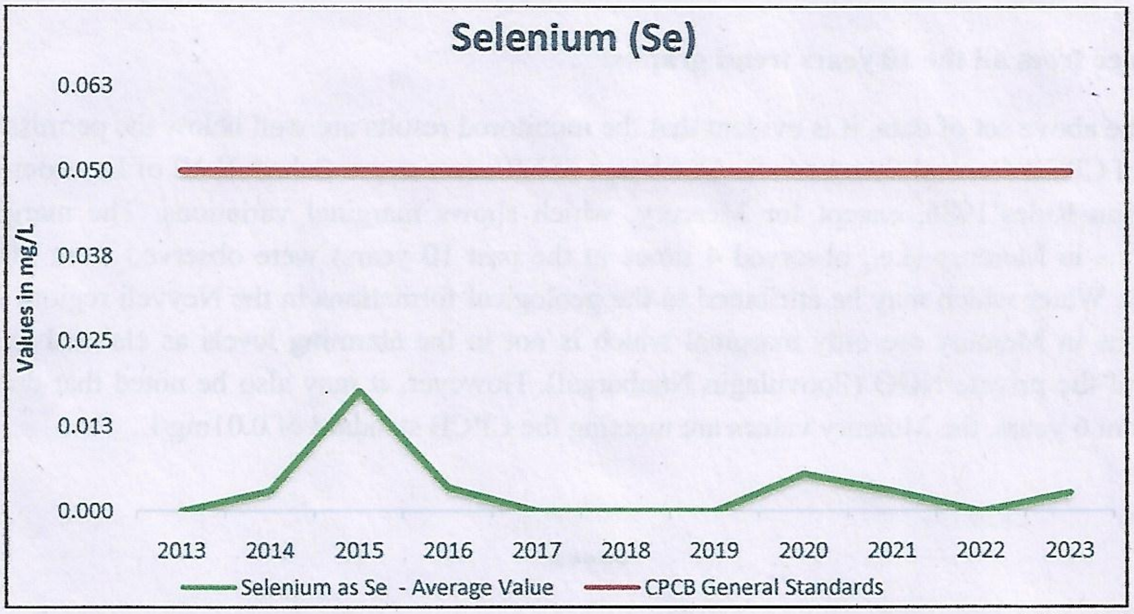
Note: The marginal variations in Mercury (i.e., observed 4 times in the past 10 years) were observed from Mines Seepage Water which may be attributed to the geological formations in the Neyveli region. However, it may also be noted that during the recent 6 years, the Mercury values are meeting the CPCB standard of 0.01mg/L.

S. Kamal Bashe



*All units in mg/L

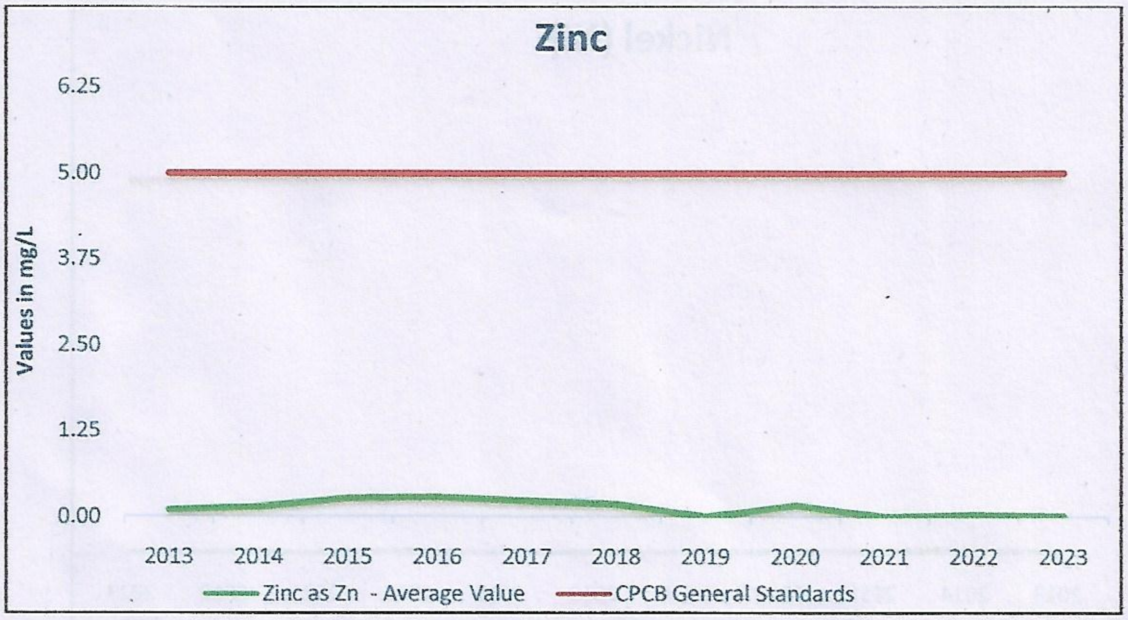
Note: At any point of time, individual plant reading of the Nickel parameter has not exceeded the norms as per CPCB Standards.



*All units in mg/L

Note: At any point of time, individual plant reading of the Se parameter has not exceeded the norms as per CPCB Standards.

S. Kamal Bashe



*All units in mg/L

Note: At any point of time, individual plant reading of the Zinc parameter has not exceeded the norms as per CPCB Standards.

Inference from all the 10 years trend graphs:

From the above set of data, it is evident that the monitored results are well below the permissible limits of CPCB General Standards for Discharge of Effluents as per Schedule VI of Environment Protection Rules'1986, except for Mercury, which shows marginal variations. The marginal variations in Mercury (i.e., observed 4 times in the past 10 years) were observed from Mines Seepage Water which may be attributed to the geological formations in the Neyveli region. The variations in Mercury are only marginal which is not in the alarming levels as claimed in the report of the private NGO (Poovulagin Nanbargal). However, it may also be noted that during the recent 6 years, the Mercury values are meeting the CPCB standard of 0.01mg/L.

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BEFORE THE NATIONAL
GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No.107 of 2023(SZ)

REPORT FILED ON BEHALF OF THE 1ST RESPONDENT/NLCIL AND DOCUMENTS

M/s.N.NITHIANANDAM
A.JAYARAMAN
COUNSEL FOR 1st RESPONDENT

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