

Vide Letter No.: HZLP/SRP/23-24/H-I

Date: 25/11/2023

To,  
The Regional Officer (North Central Zone),  
Ministry of Environment, Forests & Climate Change,  
25, Subhash Road, Dehradun, Uttarakhand-248001

**Subject:** Submission of Environment Clearance compliance report for Pantnagar Silver Refinery Plant (Refined Silver production 800TPA) of M/s Hindustan Zinc Limited, Plot No 2 & 3, Sector 14, IIE, SIDCUL, Pantnagar, Dist. U.S. Nagar for the period April-2023 to Sept-2023.

**Ref; Letter No:- E.C. No.- 10-9(10)/2018 dated 08-02-2019 from SEIAA, Dehradun.**

Dear Sir,


With reference to the aforesaid subject, we have obtained Environment Clearance from State Environment Impact Assessment Authority, Dehradun for Pantnagar Silver Refinery Plant (Refined Silver production 800TPA) on dated 08.02.2019.

Please find enclosed herewith the Compliance report of Environment Clearance for Pantnagar Silver Refinery Plant of M/s Hindustan Zinc Limited, Plot No 2 & 3, Sector 14, IIE, SIDCUL, Pantnagar, Dist. U.S. Nagar for the period of April-2023 to September-2023.

In case any additional information / documents / clarifications are required, the same may kindly be informed to us.

Thanking you.

Yours faithfully,

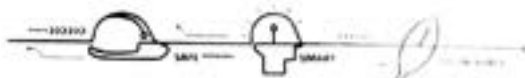
  
(Deep Kumar Agarwal)

SBU Director  
Pantnagar Silver Refinery Plant  
Hindustan Zinc Limited

Hindustan Zinc Limited  
Pantnagar Metal Plant  
Plot No. 2&3, Sector 14, IIE, SIDCUL,  
Pantnagar - 263153, Uttarakhand.

CC:

1. Member Secretary, SEIAA, Dehradun
2. MS office, UEPPCB, Dehradun
3. Regional Officer, UEPPCB, Kashipur
4. Office copy, HZL



Hindustan Zinc Limited, Registered Office: Yashad Bhawan, Udaipur-313 004, Rajasthan, INDIA.  
T. +91 294-6604000-02 www.hzlindia.com CIN: L27204RJ1966PLC001208

## Compliance Report of Environment Clearance (April-2023 to Sept-2023)

**Name of the Project:** M/s Hindustan Zinc Limited  
Pantnagar Silver Refinery Plant

**Location of the Project:** Plot No.- 2 & 3, Sector 14, IIE, SIDCUL,  
Pantnagar, District - Udham Singh Nagar,  
Uttarakhand - 263153

**(Letter No: E.C. No.- 10-9(10)/2018 dated 08-02-2019)**

S. N.	Specifications	Status
	<u>Pre Operation-</u>	
1	The project proponent should advertise with basic details at least in two widely circulated local newspapers, within seven (7) days of the receipt of the clearance letter informing that the project has been accorded environmental clearance which is available with the State Environment Impact Assessment Authority, Dehradun and a copy of the same is being sent to the Regional Office of Ministry of Environment and Forest, Government of India located at 25 Subhash road Dehradun.	Complied. Silver 800 TPA Environment Clearance letter was received on 08.02.2019. It was advertised in two local newspapers i.e. Amar Ujala & Danik Jagran on date 10.02.2019. Advertisement copy was submitted to SEIAA, Dehradun and RO, MOEF office Dehradun along with compliance report vide letter no HZL/PMP/18-19/H-II dated 03.04.2019.
2	A copy of the Environmental Clearance letter shall be sent by the proponent to the concerned Panchyat, if any from whom suggestion/representation, if any, were received while processing the proposal.	Complied. Copy of Environment Clearance letter submitted to the Zila Panchyat office Udham Singh Nagar (Rudrapur) on date 11.02.2019. Receiving copy was submitted along with compliance report vide letter no HZL/PMP/18-19/H-II dated 03.04.2019.
3	Consent to Establish/Consent to Operate shall be obtained from Uttarakhand Environment Protection and Pollution Control Board under relevant provisions of Central Air Act and Central Water Act before starting up of any construction activity at the site.	Complied. Consent to Establish and Consent to Operate obtained from Uttarakhand Environment Protection and Pollution Control Board under relevant provisions of Central Air Act and Central Water Act on 28.02.2019 & 29.03.2019 respectively. Present CCA renewal valid till 31.03.2025 having consent number-UKPCB/HO/Con-H-71/2021/1628.
4	There shall be no felling of tress at the construction site and further no damage to the local vegetation shall be done. The installation of equipments/machineries shall be done within the vacant space available in the plant premises.	Complied as no tree felling and no damage to local vegetation done at construction site. The new equipments/machineries being installed within the vacant space available in the plant premises.
	<u>During Operation Phase-</u>	
1	The Environmental Clearance is being granted for Refined Silver production from 600 TPA to 800 TPA (monthly 85 tonnes per month with overall 800 tons per annum). Apart from 800 TPA Refined Silver	Noted and Being complied.

Sensitivity: Internal (C1)

Hindustan Zinc Limited  
Pantnagar Metal Plant  
Plot No 2&3, Sector 14, IIE, SIDCUL,  
Rudrapur - 263153, Uttarakhand

	(powder/ingot etc.) product, Antimony Concentrate(precipitate/salt mix)- 1800TPA, Bismuth Concentrate(precipitate/salt mix)-360TPA, Copper Matte-140TPA, and Oxidation Slag- 1250TPA, Silver Nitrate-25TPA, Silver anode slime/Silver sand- 10TPA, Lead slag-450TPA, VRF zinc- 650TPA, VRF zinc dross- 100TPA will also be produced as a by-products. Major raw materials are Anode Slime/Dore Silver/HGM (high grade metal) - 4680TPA which will be procured from HZL's smelters and from open market. Other consumables are Coke- 87 TPA, Soda Ash- 250 TPA, Salt peter (Potassium Nitrate)- 89 TPA, Nitric acid- 150 TPA, Ethyne- 10 TPA, Charcoal- 20 TPA, Sodium Chloride- 15 TPA, Borax- 15 TPA, LDO/HSD/LNG/LHSH/PNG/LPG- 4500 TPA, Calcium Fluoride- 40 TPA, Sulphuric Acid- 5 TPA and Lime 5 TPA.	
2	Consent to Establish/Consent to Operate shall be obtained from Uttarakhand Environment Protection and Pollution Control Board under relevant provisions of Central Air Act and Central Water Act before starting up of any construction activity at the site.	Complied. Consent to Establish and Consent to Operate obtained from Uttarakhand Environment Protection and Pollution Control Board under relevant provisions of Central Air Act and Central Water Act on 28.02.2019 & 29.03.2019 respectively. Present CCA renewal valid till 31.03.2025 having consent number- <b>UKPCB/HO/Con-H-71/2021/1628</b> .
3	A copy of the Environmental Clearance letter shall be sent by the proponent to the concerned Panchyat, if any from whom suggestion/representation, if any, were received while processing the proposal.	Complied. Copy of Environment Clearance letter submitted to the Zilla Panchyat office Udham Singh Nagar (Rudrapur) on date 11.02.2019. Receiving copy was submitted along with compliance report vide letter no HZL/PMP/18-19/H-II dated 03.04.2019.
4	The soil and groundwater samples shall be tested from accredited labs and it shall be ensured that test results comply with CPCB standards so as to ensure that there is no threat to groundwater quality by leaching of heavy metals and toxic contaminants.	The soil and groundwater samples are being tested regularly by NABL accredited lab (M/s Eko Pro Engineers, Ghaziabad) and all test results are being complied with CPCB standard. Zero effluents generated from the plant so there is no threat to groundwater quality by leaching of heavy metals and toxic contaminants. Test reports are being attached herewith as Annexure 1(a).
5	No waste water shall be discharged outside the plant boundary and 'Zero Discharge' shall be strictly adhered to permissible standards.	'Zero Liquid discharge' maintained and is being ensured.
6	The gaseous emissions (SOx, NOx, CO) and particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	Gaseous emissions of SOx, NOx, CO and Particulate matter being monitored periodically by NABL authorized third party (external agency). Emission levels are being ensured as per the stipulations. Test reports are being attached herewith as Annexure 1(b). During failure of pollution control system, will ensure the compliance. In addition, online PM analyzers in all process

		stacks, SOx, NOx & PM analyzer in DG stacks installed for effective monitoring & control the emissions. Photos of the analysers are attached as Annexure 2.
7	Fugitive emissions in the work zone environment, product and raw materials storage areas shall be regularly monitored. The emissions shall conform to the limits imposed by the UEPPCB/Central Pollution Control Board.	Hygiene ventilation systems have been installed to arrest fugitive emissions. Work zone monitoring is being done monthly, In the Raw material handling, process and finished good area and emission maintained below the limit. Fugitive emission levels are being ensured as per the stipulations. Test reports are being attached herewith as Annexure 1(c).
8	The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storages and Import of Hazardous Chemicals Rules, 1989, as amended from time to time. Authorization from the UEPPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes.	Appropriate storage facilities have been installed for storing Hazardous chemicals/wastes. Authorization of Hazardous waste under Hazardous Waste Rules 2008 has been granted by UKPCB along with CCA and present CCA renewal valid till 31.03.2025 having consent number- <b>UKPCB/HO/Con-H-71/2021/1628</b> . Photos of the HW storage site are attached as Annexure 3.
9	Installed furnace should meet the air pollution discharge norms of CPCB/ UEPPCB.	Installed furnaces have equipped with adequate and efficient bag filter to ensure the air pollution discharge norms as per CPCB/UEPPCB.
10	The ambient air quality and noise levels as per CPCB norms shall be ensured through a monitoring system. Dust Suppression during construction activity shall be ensured. Acoustic enclosures shall be provided with DG sets on site complying with Noise Levels of CPCB standards.	The ambient air quality and noise levels as per CPCB norms are being ensured through monthly monitoring through NABL certified lab. Acoustic enclosures provided with DG sets on site complying with Noise Levels of CPCB standards. Test reports are being attached herewith as Annexure 1(d).
11	The vehicles used at the factory site should comply with emission norms and noise level standards of CPCB.	Being complied. All the vehicles engaged in transportation of product and raw materials are regularly checked for "Pollution Under Control" certificates. No overloading is allowed. Integrated Transport Management System (ITMS) is being used for effective control of vehicular traffic. Emission and Noise level being complied and results are attached as Annexure 1(a) & 1(d).
12	All necessary efforts shall be made to ensure safety and hygiene of workforce. First Aid facility shall be established and trained manpower to deal with emergency cases shall be engaged. The labour force engaged on site shall be screened for health from time to time.	Being complied. First Aid facility equipped with trained staff already provided in plant premises. IME for new manpower and PME for regular manpower being ensured as per statutory requirements.
13	Adequate drinking water and sanitation facility shall be provided on site for the workforce.	Being complied. Adequate drinking water and sanitation facility already provided within plant promises.
14	Training shall be imparted to all employees on safety	Being complied. Trainings to all employees on

	and health aspects. Pre- employment and routine periodical medical examinations for all employees shall be undertaken on regular basis.	Safety and health aspects are being provided on regular interval. Pre-employment & periodic medical examination are being carried out for the relevant occupational hazards at a regular frequency, as per statutory requirements.
15	The project authority shall also comply with all the environment protection measures and safeguards proposed in the EIA/EMP report. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	Environment protection measures and safeguards recommended in the EIA/EMP report being implemented.
16	A separate Environmental Management Cell shall be set up to carry out the Environmental Management functions.	Separate Environment Management cell is already in place for all Environment Management functions. Environmental monitoring being ensured through Authorized third party (external agency) regularly.
17	The fire safety arrangements and emergency exit plan should be as per the norms of the concerned regulatory authority/agency.	Fire safety arrangements equipped with dedicated Fire tender and team already provided in plant premises. Fire hydrants are in auto mode. Onsite Emergency response plan already in place.
18	Rainwater harvesting for surface run off shall be ensured. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and other particles.	Complied. Presently We have four rain water harvesting pond for rain water collection having capacity approx. 2542, 1500, 841 and 750 cu.m and collected rainwater is being utilized into the process. In FY 2023-24, H1 we have reused around <b>11,799 cu.m</b> rainwater in the process for conserving the fresh water. Photograph of the same is attached herewith as Annexure-4.
19	Energy conservation measures to be adopted for reducing the energy consumption.	Being complied. Various energy conservations measures being adopted in plant for reducing the energy consumption.
20	At no time the emissions shall exceed the prescribed limits in the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	Being complied. All the emissions are being maintained within prescribed limit. Inter locked pollution control system are in place and functioning.
21	The locations of ambient air quality monitoring stations shall be reviewed in consultation with UEPPCB, if required, in the downwind direction as well as where maximum ground level concentrations are anticipated.	Complied. Four Ambient air quality monitoring location already finalized in the downwind direction of the plant in consultation with RO, UEPPCB. CAAQMS installed at plant premises.
22	The stacks of appropriate height as per the central pollution board guidelines shall be provided to control the emissions.	Complied. Adequate stack height is provided as per CPCB guidelines: <ul style="list-style-type: none"> <li>40 m stack height for furnace off gases</li> <li>30 m stack height with NOx scrubber provided in electrolyte section</li> </ul> Photo of stack is attached herewith as Annexure 5.
23	The overall noise levels in and around the plant area	Being complied. Various noise reduction

	shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standard prescribed under Environment (Protection) Act, 1986 rules, 1989 viz. 75 dB(A) (day time) and 70dB(A) (Night time).	measures are adopted, to ensure compliance to Ambient noise standards, at the design stage of the projects as: Acoustic enclosure provided for DG set and all the necessary provision made in compressor area. Noise level monitoring is being done and ensured within limit reports are attached herewith as Annexure 1(d).
24	One third of the total project site area shall be converted into green belt. The green belt shall not include kitchen garden, flower pots and grasses/herbs in the area. It shall comprise of tree stand of aesthetic/fruit/timber value. Quality planting material shall be used during plantation as per standards of State Forest Department. The species selection should include criterion of fruit bearing and fast growing tall trees. The concerned official of State Forest Department shall ensure the compliance.	Complied. The greenbelt more than 33 per cent area has been covered by selection of plant species as per CPCB guideline and in consultation with DFO. However, gap filling plantation is being carried out to maintain the survival rate of the plants.
25	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated E.C conditions including results of monitored data in soft copy to this Authority and regional office of MoEF, Govt. of India at Dehradun.	Being Complied. Last six monthly compliance report was submitted to SEIAA, Dehradun and RO, MOEF office Dehradun vide letter no HZLP/SRP/21-22/H-2 dated 10.05.2022. Six monthly compliance reports are being uploaded on company website. Link of website uploading EC compliance of October'2022 to March'2023 is <a href="https://www.hzindia.com/wp-content/uploads/EC-Compliance-Report-Silver-plant-H2-2022-23.pdf">https://www.hzindia.com/wp-content/uploads/EC-Compliance-Report-Silver-plant-H2-2022-23.pdf</a>
	<b>Entire Life--</b>	
1	The vehicles used at the factory site should comply with emission norms and noise level standards of CPCB.	Being complied. All the vehicles engaged in transportation of product and raw materials are regularly checked for "Pollution Under Control" certificates. No overloading is allowed. Integrated Transport Management System (ITMS) is being used for effective control of vehicular traffic. Emission and Noise level being complied and results are attached as Annexure 1(a) & 1(d).
2	All necessary efforts shall be made to ensure safety and hygiene of workforce. First Aid facility shall be established and trained manpower to deal with emergency cases shall be engaged. The labour force engaged on site shall be screened for health from time to time.	Being complied. First Aid facility equipped with trained staff already provided in plant premises. IME for new manpower and PME for regular manpower being ensured as per statutory requirements.
3	Adequate drinking water and sanitation facility shall be provided on site for the workforce.	Being complied. Adequate drinking water and sanitation facility already provided within plant premises.
4	Training shall be imparted to all employees on safety and health aspects. Pre- employment and routine periodical medical examinations for all employees shall	Being complied. Trainings to all employees on Safety and health aspects are being provided on regular interval.

	be undertaken on regular basis.	Pre-employment & periodic medical examination are being carried out for the relevant occupational hazards at a regular frequency, as per statutory requirements.
5	The project authority shall also comply with the entire environment protection measures and safeguards proposed in the EIA/EMP report. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	Environment protection measures and safeguards recommended in the EIA/EMP report being implemented.
6	The fire safety arrangements and emergency exit plan should be as per the norms of the concerned regulatory authority/agency.	Fire safety arrangements equipped with dedicated Fire tender and team already provided in plant premises. Fire hydrants are in auto mode. Onsite Emergency response plan already in place.
7	Rainwater harvesting for surface run off shall be ensured. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and other particles.	Complied. Presently We have four rain water harvesting pond for rain water collection having capacity approx. 2542, 1500, 841 and 750 cu.m and collected rainwater is being utilized into the process. In FY 2023-24, H1 we have reused around <b>11,799 cu.m</b> rainwater in the process for conserving the fresh water. Photograph of the same is attached herewith as Annexure-4.
8	The project proponent shall ensure compliance to provisions of the all Acts, Rules, Regulations and Guidelines, for the time being in force, as applicable to the project.	Noted and being complied.
9	The above environmental safeguards shall be implemented in letter and spirit. The project proponent shall establish Environment Monitoring Cell and also submit six monthly compliance reports to this Authority and regional office of MoEF, Govt. of India at Dehradun.	Separate Environment Management cell is already in place for all Environment Management functions. Environmental monitoring being ensured through Authorized third party (external agency) regularly.
10	The SEIAA reserves the right to include additional safeguard measures if found necessary and also to take action including revoking of the EC granted under provision of EIA Notification 2006. This EC is being granted subject to compliance of Hon'ble Court Orders issued from time to time.	Noted.
11	The SEIAA Uttarakhand reserves the right to withdraw the Environmental Clearance or add additional conditions.	Noted.
12	If this Environmental Clearance is transferred then fresh Environment Clearance is to be obtained under EIA notification dated 14.09.2006. However, no activity shall be undertaken till the Environment Clearance is transferred in his name and he is lawfully bound to Comply with the conditions of the Environmental Clearance.	Noted.
13	Corporate Environment Responsibility be followed as	Continuous Corporate Environment

	proposed.	<p>Responsibility is being carried out through various projects planned in the financial year 2022-23 along with CSR program. CER &amp; CSR projects details are attached herewith as Annexure 6.</p> <p>Report has been submitted on CER activities along with CSR on 31.01.2020.</p>
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Hindustan Zinc Limited  
Pantnagar Metal Plant  
Plot No 2&3, Sector 14, IIE, SIDCUL,  
Rudrapur – 263153, Uttarakhand.



# EKO TESTING LABS

## Eko Pro Engineers Pvt. Ltd.

Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)



Office & Laboratory: 32/41, South Side of G.T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Distt. M.C.D.)  
Contact No. 9711159210, 9810240837, 9810240879 E-mail: [amal@ekoproam.ekoproengineers@gmail.com](mailto:amal@ekoproam.ekoproengineers@gmail.com) website: [www.ekopro.com](http://www.ekopro.com)

TC-5063

### TEST REPORT

#### Water Sample Analysis

Test Report No. : EKO/E-675/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
Plot No. 2 Sec-14  
IIE, Sidcul Pantnagar  
Rudrapur - Uttarakhand

Sample Description : Ground Water  
Sample Drawn on : 29/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : From Borewell  
Sampling Plan & Procedure : SOP-W/66  
Sample Quantity : 3.0 Litre  
Environmental Conditions : Normal  
Analysis Duration : 03/10/2023 To 07/10/2023  
Remark (if any) : NA

#### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per IS:10500-2012 (Amd.No.3 Feb-2021)	
					Acceptable	Permissible
1	Colour	IS: 3025 (P-4)	< 1.0	Hazen	5.0	15.0
2	Odour	IS: 3025 (P-5)	Agreeable	-	Agreeable	Agreeable
3	Taste	IS: 3025 (P-7)	Agreeable	-	Agreeable	Agreeable
4	Turbidity	IS: 3025 (P-10)	< 1.0	NTU	1.0	5.0
5	pH	IS: 3025 (P-11)	7.39	-	6.5-8.5	No relaxation
6	Total Hardness (as CaCO <sub>3</sub> )	IS: 3025 (P-21)	145.0	mg/L	200.0	600.0
7	Calcium (as Ca)	IS: 3025 (P-40)	34.2	mg/L	75.0	200.0
8	Iron (as Fe)	APHA 3125 B	<0.1	mg/L	1.0	No relaxation
9	Chloride (as Cl)	IS: 3025 (P-32)	24.5	mg/L	250.0	1000.0
10	Sodium (as Na)	IS 3025 (Part-45)	12.2	mg/L	-	-
11	Potassium (as K)	IS 3025 (Part-45)	<1.0	mg/L	-	-
12	Chloramines (as Cl <sub>2</sub> )	IS: 3025 (P-26)	<1.0	mg/L	4.0	No relaxation
13	Fluoride (as F)	IS: 3025 (P-60)	< 1.0	mg/L	1.0	1.5
14	Total Dissolved Solids	IS: 3025 (P-16)	315.0	mg/L	500.0	2000.0
15	Magnesium (as Mg)	IS: 3025 (P-46)	13.9	mg/L	30.0	100.0
16	Copper (as Cu)	APHA 3125 B	< 0.005	mg/L	0.05	1.5
17	Manganese (as Mn)	APHA 3125 B	< 0.005	mg/L	0.1	0.3
18	Sulphate (as SO <sub>4</sub> )	IS: 3025 (P-24)	26.5	mg/L	200.0	400.0
19	Nitrate (as NO <sub>3</sub> )	IS: 3025 (P-34)	1.21	mg/L	45.0	No relaxation
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS: 3025 (P-43)	< 0.001	mg/L	0.001	0.002
21	Mercury (as Hg)	APHA 3125 B	< 0.001	mg/L	0.001	No relaxation
22	Selenium (as Se)	APHA 3125 B	< 0.005	mg/L	0.01	No relaxation
23	Arsenic (as As)	APHA 3125 B	< 0.005	mg/L	0.01	No relaxation
24	Cyanide (as CN)	APHA 4500 CN-K	Absent	mg/L	0.05	No relaxation
25	Lead (as Pb)	APHA 3125 B	< 0.005	mg/L	0.01	No relaxation



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## Eko Pro Engineers Pvt. Ltd.

Environmental Consultants and Analytical Laboratory  
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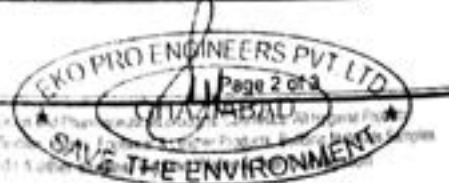
Office & Lab: 10/1, South Side of G.T. Road, UPSIDC Industrial Area, Ghaziabad - 201 005 (Uttar Pradesh) India  
Contact No: 0182-2595700, 9810240832, 9810240870 E-mail: [info@ekopro.in](mailto:info@ekopro.in), [ekoproengineers@gmail.com](mailto:ekoproengineers@gmail.com), [info@ekotesting.com](mailto:info@ekotesting.com)

TC-5063

Test Report No. : EKO/E-675/031023

Issue Date : 07/10/2023

26	Zinc (as Zn)	APHA 3125 B	< 0.01	mg/L	5.0	15.0
27	Barium (as Ba)	APHA 3125 B	< 0.01	mg/L	0.7	No relaxation
28	Mineral Oil	IS: 3025 (P-39)	ND (LOQ-0.1)	mg/L	1.0	No relaxation
29	Ammonia (as Total Ammonia-N)	IS: 3025 (P-34)	< 0.1	mg/L	0.5	No relaxation
30	Silver (as Ag)	APHA 3125 B	< 0.005	mg/L	0.1	No relaxation
31	Total Chromium (as Cr)	APHA 3125 B	< 0.005	mg/L	0.05	No relaxation
32	Total Alkalinity (as CaCO <sub>3</sub> )	IS: 3025 (P-23)	112.0	mg/L	200.0	600.0
33	Aluminium (as Al)	APHA 3125 B	< 0.005	mg/L	0.03	0.2
34	Boron (as B)	IS: 3025 (P-57)	< 0.25	mg/L	0.5	2.4
35	Cadmium (as Cd)	APHA 3125 B	< 0.001	mg/L	0.003	No relaxation
36	Anionic Detergents (as MBAS)	APHA 5540	< 0.1	mg/L	0.2	1.0
37	Sulphide (as H <sub>2</sub> S)	IS: 3025 (P-29)	< 0.05	mg/L	0.05	No relaxation
38	Molybdenum (as Mo)	APHA 3125 B	< 0.005	mg/L	0.07	No relaxation
39	Nickel (as Ni)	APHA 3125 B	< 0.005	mg/L	0.02	No relaxation
40	Polychlorinated biphenyls (PCB)	EKO/CHEM/SOP-GCMSMS/W-02	ND (LOQ-0.00001)	mg/L	0.0005	No relaxation
41	Polycyclic aromatic hydrocarbons (PAH)	EKO/CHEM/SOP-GCMSMS/W-03	ND (LOQ-0.00001)	mg/L	0.0001	No relaxation
42	Atrazine	EKO/CHEM/SOP-GCMSMS/W-01	ND (LOQ-0.01)	µg/l	2.0	No relaxation
43	Alachlor		ND (LOQ-0.01)	µg/l	20.0	No relaxation
44	Aldrin/Dieldrin		ND (LOQ-0.01)	µg/l	0.03	No relaxation
45	Alpha HCH		ND (LOQ-0.01)	µg/l	0.01	No relaxation
46	Beta HCH		ND (LOQ-0.01)	µg/l	0.04	No relaxation
47	Butachlor		ND (LOQ-0.01)	µg/l	125.0	No relaxation
48	Chlorpyrifos		ND (LOQ-0.01)	µg/l	30.0	No relaxation
49	Delta HCH		ND (LOQ-0.01)	µg/l	0.04	No relaxation
50	DDT (o,p and p,p-isomers of DDT, DDE and DDD)		ND (LOQ-0.01)	µg/l	1.0	No relaxation
51	Endosulfan (Alpha, Beta & Sulphate)		ND (LOQ-0.01)	µg/l	0.4	No relaxation
52	Ethion		ND (LOQ-0.01)	µg/l	3.0	No relaxation
53	Gamma-HCH (Lindane)		ND (LOQ-0.01)	µg/l	2.0	No relaxation
54	Malathion		ND (LOQ-0.01)	µg/l	190.0	No relaxation
55	Methyl parathion		ND (LOQ-0.01)	µg/l	0.3	No relaxation
56	Monocrotophos		ND (LOQ-0.01)	µg/l	1.0	No relaxation
57	Phorate		ND (LOQ-0.01)	µg/l	2.0	No relaxation
58	2,4 Dichlorophenoxyacetic acid	EKO/CHEM/SOP-LCMS/W-01	ND (LOQ-0.01)	µg/l	30.0	No relaxation
59	Isoproturon		ND (LOQ-0.01)	µg/l	9.0	No relaxation
60	Bromoform	APHA 6232	< 0.04	mg/L	0.1	No relaxation
61	Dibromochloromethane	APHA 6232	< 0.04	mg/L	0.1	No relaxation
62	Bromodichloromethane	APHA 6232	< 0.04	mg/L	0.06	No relaxation
63	Chloroform	APHA 6232	< 0.04	mg/L	0.2	No relaxation
64	Total Coliform	IS: 15185	Absent	Per 100mL	Absent	No relaxation
65	E. coli	IS: 15185	Absent	Per 100mL	Absent	No relaxation



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**Eko Pro Engineers Pvt. Ltd.**  
Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)

Contact : 91 9810240676



Office & Laboratory : 3241, South Side of G.T. Road, HUDA Industrial Area, Ghaziabad - 201 009 (Delhi-NCR), INDIA  
Phone No : 9711154210, 9810240637, 9810240676 Email : info@ekopro.in, ekoproengr.com, ekopro@gmail.com, website : www.ekopro.in

Test Report No. : EKO/E-675/031023

Issue Date : 07/10/2023

Remark:- Standard Applicable only for Drinking Water.

**Notes:**

1. The results given above are related to the tested sample, as received & mentioned parameters.  
The customer asked for the above tests only.
2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
3. The test report will not be used for any publicity/legal purpose.
4. The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer. Sample received for biological tests will be destroyed after 7 days from the date of issue of test report.
5. Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
SHIVANGI SINGH RANADA  
SECTION INCHARGE MICROBIOLOGY  
(Authorized Signatory)  
SAVE THE ENVIRONMENT

For EKO PRO ENGINEERS PVT. LTD.  
PURNIMA CHAUHAN  
TECHNICAL MANAGER  
(Authorized Signatory)  
SAVE THE ENVIRONMENT

**EKO PRO ENGINEERS PVT. LTD.**

Environmental Consultants and Analytical Laboratory

(An ISO 9001:2015 Certified Company)

Office & Laboratory : 3/11, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Uttar Pradesh) INDIA.  
Contact No : 9711159210, 9810240637, 9810240678 E-mail : email@ekopro.in, ekoproengineers@gmail.com, website : www.ekopro.in

**TEST REPORT****Soil Sample Analysis**

Issue Date : 06/06/2023

Test Report No. : EKO/E-567/010623

Issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sector -14

IIE, Sidcul Pantnagar

Rudrapur - (Uttarakhand)

Sample Description : Soil Sample  
Sample Drawn on : 31/05/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 01/06/2023  
Sampling Location : Front Side of Contractor Canteen  
Sampling Plan & Procedure : SOP-S/50  
Sample Quantity : 500 gm  
Environmental Condition : Normal  
Analysis Duration : 01/06/2023 To 05/06/2023  
Remark (If any) : NA

**RESULTS**

S. No.	Parameters	Test Methods	Results	Units
1	pH (1:2.5 Suspension)	IS: 2720 (P-26)	7.25	-
2	Conductivity (1:5 Susp.)	IS: 2720 (P-21)	543.6	µs/cm
3	Sodium Available (as Na)	EKO/CHEM/SOP/S-04	260.4	mg/kg
4	Potassium Available (as K)	EKO/CHEM/SOP/S-02	310.6	mg/kg
5	Bulk Density	EKO/CHEM/SOP/S-12	1.58	g/cc
6	Chloride (as Cl)	EKO/CHEM/SOP/S-01	180.6	mg/kg
7	Phosphorus (as P)	EKO/CHEM/SOP/S-03	84.3	mg/kg
8	Total Kjeldahl Nitrogen	EKO/CHEM/SOP/S-07	1510.5	mg/kg
9	Zinc (as Zn)	USEPA-SW 846 7130	19.4	mg/kg
10	Lead (as Pb)	USEPA-SW 846 7130	<1.0	mg/kg
11	Cadmium (as Cd)	USEPA-SW 846 7130	<1.0	mg/kg
12	Copper (as Cu)	USEPA-SW 846 7130	<0.5	mg/kg
13	Arsenic (as As)	USEPA-SW 846 7130	<1.0	mg/kg
14	Nickel (as Ni)	USEPA-SW 846 7130	<1.0	mg/kg
15	Organic Carbon	IS: 2720 (P-22)	0.56	%
16	Antimony (as Sb)	USEPA-SW 846	<1.0	mg/kg
17	Bismuth (as Bi)	USEPA-SW 846	<1.0	mg/kg
18	Salinity	SOP-S/92/37	325.0	mg/kg

**Notes :**

1. The results given above are related to the tested sample, as received &amp; mentioned parameters.

The customer asked for the above tests only.

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3. The test report will not be used for any publicity/legal purpose.

4. The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer. Sample received for biological tests will be destroyed after 7 days from the date of issue of test report.

5. Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.

\* PURNIMA CHAUHAN \*  
TECHNICAL MANAGER

**EKO PRO ENGINEERS PVT. LTD.**

Environmental Consultants and Analytical Laboratory

(An ISO 9001:2015 Certified Company)

Office & Laboratory : 3/241, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Distt-NCT) INDIA  
Contact No. : 911159210, 9810240670, 9810240678 E-mail : [enar@eko-pro.in](mailto:enar@eko-pro.in), [eko-proengineers@gmail.com](mailto:eko-proengineers@gmail.com), website : [www.eko-pro.in](http://www.eko-pro.in)

**TEST REPORT****Soil Sample Analysis**

Test Report No. : EKO/E-568/010623

Issue Date : 06/06/2023

Issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sector -14

IIE, Sidcul Pantnagar

Rudrapur - (Uttarakhand)

Sample Description : Soil Sample  
Sample Drawn on : 31/05/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 01/06/2023  
Sampling Location : From Plot No.1 (old Plot)  
Sampling Plan & Procedure : SOP-S/50  
Sample Quantity : 500 gm  
Environmental Condition : Normal  
Analysis Duration : 01/06/2023 To 05/06/2023  
Remark (if any) : NA

**RESULTS**

S. No.	Parameters	Test Methods	Results	Units
1	pH (1:2.5 Suspension)	IS: 2720 (P-26)	7.65	-
2	Conductivity (1:5 Susp.)	IS: 2720 (P-21)	550.4	µs/cm
3	Sodium Available (as Na)	EKO/CHEM/SOP/S-04	280.3	mg/kg
4	Potassium Available (as K)	EKO/CHEM/SOP/S-02	325.6	mg/kg
5	Bulk Density	EKO/CHEM/SOP/S-12	1.61	gm/cc
6	Chloride (as Cl)	EKO/CHEM/SOP/S-01	145.2	mg/kg
7	Phosphorus (as P)	EKO/CHEM/SOP/S-03	80.6	mg/kg
8	Total Kjeldahl Nitrogen	EKO/CHEM/SOP/S-07	1450.3	mg/kg
9	Zinc (as Zn)	USEPA-SW 846 7130	17.2	mg/kg
10	Lead (as Pb)	USEPA-SW 846 7130	<1.0	mg/kg
11	Cadmium (as Cd)	USEPA-SW 846 7130	<1.0	mg/kg
12	Copper (as Cu)	USEPA-SW 846 7130	<0.5	mg/kg
13	Arsenic (as As)	USEPA-SW 846 7130	<1.0	mg/kg
14	Nickel (as Ni)	USEPA-SW 846 7130	<1.0	mg/kg
15	Organic Carbon	IS: 2720 (P-22)	0.68	%
16	Antimony (as Sb)	USEPA-SW 846	<1.0	mg/kg
17	Bismuth (as Bi)	USEPA-SW 846	<1.0	mg/kg
18	Salinity	SOP-S/92/37	340.0	mg/kg

**Notes :**

- The results given above are related to the tested sample, as received & mentioned parameters.  
The customer asked for the above tests only.
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- The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer. Sample received for biological tests will be destroyed after 7 days from the date of issue of test report.
- Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
RUPNMA BHALLAN  
SATECHNICAL MANAGER  
9810240670

**EKO PRO ENGINEERS PVT. LTD.**Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)Office & Laboratory : 32/41, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Delhi-NCR) INDIA  
Contact No. : 9711159210, 9810240637, 9810240678 E-mail : email@ekopro.in, ekoproengineers@gmail.com, website : www.ekopro.in**TEST REPORT****Soil Sample Analysis**

Test Report No. : EKO/E-566/010623

Issue Date : 06/06/2023

Issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sector -14

IIE, Sidcul Pantnagar

Rudrapur - (Uttarakhand)

Sample Description : Soil Sample  
Sample Drawn on : 31/05/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 01/06/2023  
Sampling Location : Back Side of Training Centre Near Logistic Office  
Sampling Plan & Procedure : SOP-S/50  
Sample Quantity : 500 gm  
Environmental Condition : Normal  
Analysis Duration : 01/06/2023 To 05/06/2023  
Remark (if any) : NA

**RESULTS**

S. No.	Parameters	Test Methods	Results	Units
1	pH (1:2.5 Suspension)	IS: 2720 (P-26)	7.45	-
2	Conductivity (1:5 Susp.)	IS: 2720 (P-21)	580.5	µs/cm
3	Sodium Available (as Na)	EKO/CHEM/SOP/S-04	310.6	mg/kg
4	Potassium Available (as K)	EKO/CHEM/SOP/S-02	423.5	mg/kg
5	Bulk Density	EKO/CHEM/SOP/S-12	1.26	gm/cc
6	Chloride (as Cl)	EKO/CHEM/SOP/S-01	198.5	mg/kg
7	Phosphorus (as P)	EKO/CHEM/SOP/S-03	80.5	mg/kg
8	Total Kjeldahl Nitrogen	EKO/CHEM/SOP/S-07	1545.3	mg/kg
9	Zinc (as Zn)	USEPA-SW 846 7130	18.2	mg/kg
10	Lead (as Pb)	USEPA-SW 846 7130	<1.0	mg/kg
11	Cadmium (as Cd)	USEPA-SW 846 7130	<1.0	mg/kg
12	Copper (as Cu)	USEPA-SW 846 7130	<0.5	mg/kg
13	Arsenic (as As)	USEPA-SW 846 7130	<1.0	mg/kg
14	Nickel (as Ni)	USEPA-SW 846 7130	<1.0	mg/kg
15	Organic Carbon	IS: 2720 (P-22)	0.61	%
16	Antimony (as Sb)	USEPA-SW 846	<1.0	mg/kg
17	Bismuth (as Bi)	USEPA-SW 846	<1.0	mg/kg
18	Salinity	SOP-S/92/37	285.0	mg/kg

**Notes :**

- The results given above are related to the tested sample, as received & mentioned parameters.  
The customer asked for the above tests only.
- This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
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- The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer. Sample received for biological tests will be destroyed after 7 days from the date of issue of test report.
- Responsibility of the Laboratory is limited to the invoiced amount only.

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

EKO PRO ENGINEERS PVT. LTD.  
PURNIMA CHAUHAN  
TECHNICAL MANAGER  
(Authorised Signatory)





296, N. & Lohmeyer, 1241, South Side of G. F. Road, UPS/HQ, Industrial Area, Ghaziabad - 201 002 (India-192) India  
Contact No. 9131154270, 9810540837, 9810240678 Email: emad@ekopon.in, sk@ekoponresearch.com, website: [www.ekopon.in](http://www.ekopon.in)

Test Report No. : EKO/E-549/031023-B  
Issued To

Issue Date : 07/10/2023

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Panthnagar,  
Rudrapur - Uttarakhand

Sample Description	: Stack Emission
Sample Drawn on	: 29/09/2023
Sample Drawn by	: EPEPL (Mr. Chandan Sharma)
Sample Received on	: 03/10/2023
Time of Sampling (minutes)	: 30.0
Sampling Location	: NA
Sampling Plan & Procedure	: SOP-SE/09
Analysis Duration	: 03/10/2023 To 07/10/2023
Source of Emission	: Stack Attached To Furnace
Capacity	: 20.8 MT/Day Total
Operating Load	: 2.5 MT
Normal Operation Schedule	: Batch Wise (3 Shift)
Type of Stack	: Metallic With Refractory Lining
Diameter of Stack (meter)	: 1.6 at top
Height of Stack from Ground Level (meter)	: 40.0
Height of Stack from Roof Level (meter)	: NA
Height of Sampling Location (meter)	: 23.3 From Ground Level
Type of Fuel Used	: Electricity/PNG
Fuel Consumed per hour	: -
Ambient Temperature (°C )	: 32.0
Stack Temperature (°C )	: 174.0
Average Velocity of Flue Emission (m/sec)	: 6.9
Average Flow Rate (lpm)	: 19.3
Control Measures (if any)	: Nil
Remark (if any)	: Sampling Instrument Used-Stack

S. No.	Parameters	Test Methods	Results	Units	Limits as per EPA-1986 Schedule -VI Part-D
1	Total Hydrocarbon (as HC)	IS: 5182 (P-17)	ND	mg/Nm <sup>3</sup>	* Not Specified
2	Total VOC	IS: 5182 (P-11)	ND	mg/Nm <sup>3</sup>	Not Specified

1. The results given above are related to the tested sample, for various parameters, as observed at the time of Sampling. The customer asked for the above tests only.
2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
3. The test report will not be used for any publicity
4. The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer.
5. Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
PURNIMA CHAUDHARI  
TECHNICAL MANAGER  
(Authorised Signatory)

**Page 1 of 1**

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Y. Li & J. Chen, School of Chemical Engineering, East China University of Science and Technology, 1305 Shilong Road, Shanghai 200242, P.R. China. E-mail: chenjie@ecust.edu.cn

Test Report No. : EKO/E-550/031023-B  
Issued To

Issue Date : 07/10/2023

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description	: Stack Emission
Sample Drawn on	: 29/09/2023
Sample Drawn by	: EPEPL (Mr. Chandan Sharma)
Sample Received on	: 03/10/2023
Time of Sampling (minutes)	: 30.0
Sampling Location	: NA
Sampling Plan & Procedure	: SOP-SE/09
Analysis Duration	: 03/10/2023 To 07/10/2023
Source of Emission	: Stack Attached To Nox Scrubber
Capacity	: -
Operating Load	: Normal
Normal Operation Schedule	: Batch Wise (3 Shift)
Type of Stack	: Metallic & PP Lining
Diameter of Stack (meter)	: 1.1 at top
Height of Stack from Ground Level (meter)	: 30.0
Height of Stack from Roof Level (meter)	: 21.8
Height of Sampling Location (meter)	: 22.9 From Ground Level
Type of Fuel Used	: -
Fuel Consumed per hour	: -
Ambient Temperature (°C )	: 32.0
Stack Temperature (°C )	: 78.0
Average Velocity of Flue Emission (m/sec)	: 6.6
Average Flow Rate (lpm)	: 19.7
Control Measures (if any)	: Nox Scrubber
Remark (if any)	: Sampling Instrument Used-Stack Monitoring kit APM-610

S. No.	Parameters	Test Methods	Results	Units	Limits as per EPA-1986 Schedule -VI Part-D
1	Total Hydrocarbon (as HC)	IS: 5182 (P-17)	ND	mg/Nm <sup>3</sup>	Not Specified
2	Total VOC	IS: 5182 (P-11)	ND	mg/Nm <sup>3</sup>	Not Specified

1. The results given above are related to the tested sample, for various parameters, as observed at the time of Sampling. The customer asked for the above tests only.
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5. Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
(PURNIMA CHAKRABARTY)  
TECHNICAL MANAGER  
Authorized Signatory

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# EKO TESTING LABS

## Eko Pro Engineers Pvt. Ltd.

Environmental Consultants and Analytical Laboratory  
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Office & Laboratory: 3043, South Side of G.T. Road (JITDA), Industrial Area, Ghaziabad - 201 001 (Uttar Pradesh, INDIA)  
 Contact No: 9111582110, 9810240837, 9810240676 E-mail: [info@ekopro.com](mailto:info@ekopro.com), [ekoproengineers@gmail.com](mailto:ekoproengineers@gmail.com), website: [www.ekopro.com](http://www.ekopro.com)

### TEST REPORT

#### Workzone Air Quality Monitoring

Test Report No. : EKO/E-556/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
 Plot No. 2 Sec-14  
 IIE, Sidcul Pantnagar  
 Rudrapur - Uttarakhand

Sample Description : Workzone Air  
 Sample Drawn on : 29/09/2023  
 Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
 Sample Received on : 03/10/2023  
 Sampling Location : Silver Plant Hydro Top Floor  
 Sampling Plan & Procedure : SOP-AAQ/15  
 Analysis Duration : 03/10/2023 To 07/10/2023  
 Sampling Time : 08 Hrs.  
 Ambient Temperature (°C) : 30.0  
 Average Flow Rate of SPM (m<sup>3</sup>/min) : 1.70  
 Average Flow Rate of Gases (lpm) : 1.70  
 Weather Condition : Clear  
 Remark (if any) : NA

#### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Permissible Limits
1	SPM	IS: 5182 (P-4)	0.562	mg/m <sup>3</sup>	15.0 as per OSHA
2	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	0.009	mg/m <sup>3</sup>	5.0 as per Factories Act, 1948
3	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	0.019	mg/m <sup>3</sup>	6.0 as per Factories Act, 1948
4	Lead (as Pb)	IS: 5182 (P-22)	< 0.1	mg/m <sup>3</sup>	0.15 as per Factories Act, 1948
5	Zinc (as Zn)	EKO/CHEM/SOP/AAQ-02	< 0.1	mg/m <sup>3</sup>	-

#### Notes :

- The results given above are related to the tested sample, as received & mentioned parameters.  
The customer asked for the above tests only.
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- The test report will not be used for any publicity/legal purpose.
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- Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
**PURNIMA CHAUDHARI**  
 TECHNICAL MANAGER  
 Sd/- (Authorized Signatory)

Page 1 of 1



# EKO TESTING LABS<sup>®</sup>

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Environmental Consultants and Analytical Laboratory  
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Contact No. : 9711159210, 9810240807, 9810240678 E-mail : [eko@ekopro.in](mailto:mailto:eko@ekopro.in), [ekoproengineers@gmail.com](mailto:ekoproengineers@gmail.com), Web Site : [www.ekopro.in](http://www.ekopro.in)

### TEST REPORT

#### Workzone Air Quality Monitoring

Test Report No. : EKO/E-557/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2, Sec - 14

IIIE, Sidcul Pantnagar,

Rudrapur - Uttarakhand

Sample Description : Workzone Air  
Sample Drawn on : 29/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : Bag Filter Area Silver Plant  
Sampling Plan & Procedure : SOP-AAQ/15  
Analysis Duration : 03/10/2023 To 07/10/2023  
Sampling Time : 08 Hrs.  
Ambient Temperature (°C) : 30.0  
Average Flow Rate of SPM (m<sup>3</sup>/min) : 1.65  
Average Flow Rate of Gases (lpm) : 1.65  
Weather Condition : Clear  
Remark (if any) : NA

#### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Permissible Limits
1	SPM	IS: 5182 (P-4)	0.512	mg/m <sup>3</sup>	15.0 as per OSHA
2	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	0.011	mg/m <sup>3</sup>	5.0 as per Factories Act, 1948
3	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	0.019	mg/m <sup>3</sup>	6.0 as per Factories Act, 1948
4	Lead (as Pb)	IS: 5182 (P-22)	< 0.1	mg/m <sup>3</sup>	0.15 as per Factories Act, 1948
5	Zinc (as Zn)	EKO/CHEM/SOP/AAQ-02	< 0.1	mg/m <sup>3</sup>	-

#### Notes :

- The results given above are related to the tested sample, as received & mentioned parameters.  
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- Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
★ PURNIMA CHAUHAN ★  
TECHNICAL MANAGER  
(Authorized Signatory)

Page 1 of 1



# EKO TESTING LABS

## Eko Pro Engineers Pvt. Ltd.

Environmental Consultants and Analytical Laboratory  
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Contact No. : +91-1594210, 9810240837, 9810240675 E-mail : [enat@ekopro.in](mailto:enat@ekopro.in), [ekoproenquiry@gmail.com](mailto:ekoproenquiry@gmail.com), website : [www.ekopro.in](http://www.ekopro.in)

### TEST REPORT

#### Workzone Air Quality Monitoring

Test Report No. : EKO/E-558/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description : Workzone Air  
Sample Drawn on : 29/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : Furnace Area in Sliver Floor  
Sampling Plan & Procedure : SOP-AAQ/15  
Analysis Duration : 03/10/2023 To 07/10/2023  
Sampling Time : 08 Hrs.  
Ambient Temperature (°C) : 30.0  
Average Flow Rate of SPM (m<sup>3</sup>/min) : 1.65  
Average Flow Rate of Gases (lpm) : 1.65  
Weather Condition : Clear  
Remark (if any) : NA

#### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Permissible Limits
1	SPM	IS: 5182 (P-4)	0.675	mg/m <sup>3</sup>	15.0 as per OSHA
2	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	0.008	mg/m <sup>3</sup>	5.0 as per Factories Act, 1948
3	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	0.015	mg/m <sup>3</sup>	6.0 as per Factories Act, 1948
4	Lead (as Pb)	IS: 5182 (P-22)	< 0.1	mg/m <sup>3</sup>	0.15 as per Factories Act, 1948
5	Zinc (as Zn)	EKO/CHEM/SOP/AAQ-02	< 0.1	mg/m <sup>3</sup>	-

#### Notes :

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The customer asked for the above tests only.
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**\*\*End of Report\*\***



Page 1 of 1



**EKO TESTING LABS**  
**Eko Pro Engineers Pvt. Ltd.**  
Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)



## TEST REPORT

## Ambient Air Quality Monitoring

Test Report No. : EKO/E-542/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Panthnagar,  
Rudrapur - Uttarakhand

Sample Description	: Ambient Air
Sample Drawn on	: 28/09/2023 To 29/09/2023
Sample Drawn by	: EPEPL (Mr. Chandan Sharma)
Sample Received on	: 03/10/2023
Sampling Location	: Near Main Gate/Security
Sampling Time	: 24.0 Hrs.
Sampling Plan & Procedure	: SOP-AAQ/15
Analysis Duration	: 03/10/2023 To 07/10/2023
Ambient Temperature (°C )	: 36.0
Average Flow Rate of SPM (m <sup>3</sup> /min.)	: 1.1
Average Flow Rate of Gases (lpm)	: 1.0
Weather Conditions	: Clear
Remark (if any)	: NA

## RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per CPCB Notification, 18th Nov 2009
1	Particulate Matter (PM10)	IS: 5182 (P-23)	89.3	µg/m³	100.0
2	Particulate Matter (PM2.5)	IS: 5182 (P-24)	56.4	µg/m³	60.0
3	Sulphur Dioxide (as SO₂)	IS: 5182 (P-2)	14.7	µg/m³	80.0
4	Nitrogen Dioxide (as NO₂)	IS: 5182 (P-6)	30.2	µg/m³	80.0
5	Carbon Monoxide (as CO)	IS: 5182 (P-10)	1.18	mg/m³	4.0
6	Lead (as Pb)	IS 5182 (P-22)	<0.1	µg/m³	1.0
7	Nickel (as Ni)	IS: 5182 (P-26)	<15.0	ng/m³	20.0
8	Arsenic (as As)	EK0/CHEM/SOP/AAQ-02	<5.0	ng/m³	6.0
9	Ozone (as O₃)	IS: 5182 (P-9)	<10.0	µg/m³	180.0
10	Ammonia (as NH₃)	IS: 5182 (P-25)	<20.0	µg/m³	400.0
11	Benzene (as C₆H₆)	IS: 5182 (P-11)	<1.0	µg/m³	5.0
12	Benzo(alpha) Pyrene-Particulate Phase Only	IS 5182 (P-12)	<1.0	ng/m³	1.0

**Notes :**

- Notes :
1. The results given above are related to the tested sample, for various parameters, as observed at the time of at the time of Sampling. The customer asked for the above tests only.
  2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory
  3. The test report will not be used for any publicity
  4. The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer.  
Sample received for biological tests will be destroyed after 7 days from the date of issue of test report.
  5. Responsibility of the Laboratory is limited to the invoiced amount only.

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

For EKO PRO ENGINEERS PVT. LTD.  
PURNIMA GHOSHAN  
TECHNICAL MANAGER



# EKO TESTING LABS

## Eko Pro Engineers Pvt. Ltd.

Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)



Office & Laboratory: 5241, South - 1, 1<sup>st</sup> Floor, 1854th, Panchsara Area (Gated), 201304, Faridkot  
Phone: 91-183-2411854, 91-183-2411855 Email: info@ekoengineers.com, ekoengineers@gmail.com Website: www.ekoengineers.com

### TEST REPORT

#### Ambient Air Quality Monitoring

Test Report No. : EKO/E-543/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description : Ambient Air  
Sample Drawn on : 28/09/2023 To 29/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : Canteen East Side In New Plant  
Sampling Time : 24.0 Hrs.  
Sampling Plan & Procedure : SOP-AAQ/15  
Analysis Duration : 03/10/2023 To 07/10/2023  
Ambient Temperature (°C) : 32.0  
Average Flow Rate of SPM (m<sup>3</sup>/min.) : 1.1  
Average Flow Rate of Gases (lpm) : 1.0  
Weather Conditions : Clear  
Remark (if any) : NA

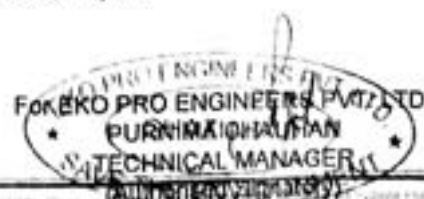
### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per CPCB Notification, 18th Nov 2009
1	Particulate Matter (PM10)	IS: 5182 (P-23)	79.6	µg/m <sup>3</sup>	100.0
2	Particulate Matter (PM2.5)	IS: 5182 (P-24)	50.4	µg/m <sup>3</sup>	60.0
3	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	12.9	µg/m <sup>3</sup>	80.0
4	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	33.6	µg/m <sup>3</sup>	80.0
5	Carbon Monoxide (as CO)	IS: 5182 (P-10)	1.21	mg/m <sup>3</sup>	4.0
6	Lead (as Pb)	IS 5182 (P-22)	<0.1	µg/m <sup>3</sup>	1.0
7	Nickel (as Ni)	IS: 5182 (P-26)	<15.0	ng/m <sup>3</sup>	20.0
8	Arsenic (as As)	EKO/CHEM/SOP/AAQ-02	<5.0	ng/m <sup>3</sup>	6.0
9	Ozone (as O <sub>3</sub> )	IS: 5182 (P-9)	<10.0	µg/m <sup>3</sup>	180.0
10	Ammonia (as NH <sub>3</sub> )	IS: 5182 (P-25)	<20.0	µg/m <sup>3</sup>	400.0
11	Benzene (as C <sub>6</sub> H <sub>6</sub> )	IS: 5182 (P-11)	<1.0	µg/m <sup>3</sup>	5.0
12	Benzo(alpha) Pyrene-Particulate Phase Only	IS 5182 (P-12)	<1.0	ng/m <sup>3</sup>	1.0

#### Notes :

- The results given above are related to the tested sample, for various parameters, as observed at the time of at the time of Sampling. The customer asked for the above tests only.
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**\*\* End of Report \*\***









**EKO TESTING LABS**  
**Eko Pro Engineers Pvt. Ltd.**  
Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)



Office & Laboratory : J2/43, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009, U.P. India, PIN/A  
Contact No. : 0111592340, 9610110117, 9610240678 Email : [info@ekopro.in](mailto:info@ekopro.in), [ekoproengineers@gmail.com](mailto:ekoproengineers@gmail.com), [info@ekopro.in](mailto:info@ekopro.in)

TC-5063

**TEST REPORT**  
**Noise Monitoring**

Test Report No. : EKO/E-561/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description : Ambient Noise  
Sample Drawn on : 28/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : Near Main Gate  
Sampling Plan & Procedure : SOP-N/01  
Weather Condition : Normal  
Analysis Duration : 03/10/2023 To 04/10/2023  
Remark (if any) : NA

**RESULTS**

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	IS : 9989	68.5	dB (A)	75.0
2	Leq (Night Time)		62.4	dB (A)	70.0

**Notes :**

- The results given above are related to the tested sample, as received & mentioned parameters.  
The customer asked for the above tests only.
- This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
- The test report will not be used for any publicity
- Responsibility of the Laboratory is limited to the invoiced amount only.

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





**EKO TESTING LABS**  
**Eko Pro Engineers Pvt. Ltd.**  
Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)

Contact : 011-26434870



Office & Laboratory : 32-41, South Side of G.T. Road, UPSIDC Industrial Area, Ghaziabad - 201 005 (Delhi-NCR) India  
Contact No. : 011-26434870, 011-26434878 E-mail : [eco@ekopro.in](mailto:eco@ekopro.in), [ekoproengineers@gmail.com](mailto:ekoproengineers@gmail.com), website : [www.ekopro.in](http://www.ekopro.in) 17/05/23

**TEST REPORT**  
**Noise Monitoring**

Test Report No. : EKO/E-562/031023

Issue Date : 07/10/2023

Issued To

: HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description : Ambient Noise  
Sample Drawn on : 29/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : East Side of Canteen In New Plant  
Sampling Plan & Procedure : SOP-N/01  
Weather Condition : Normal  
Analysis Duration : 03/10/2023 To 04/10/2023  
Remark (if any) : NA

**RESULTS**

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	IS : 9899	66.3	dB (A)	75.0
2	Leq (Night Time)		55.2	dB (A)	70.0

**Notes :**

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





**EKO TESTING LABS**  
**Eko Pro Engineers Pvt. Ltd.**  
Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)

Contact : 011-26112435/2436



Office & Laboratory : 12/41, South Side of G.T. Road, UPSIDC, Industrial Area, Ghaziabad - 201 009 (Distt-NCT of India)  
Contact No. : 0111159210, 9810240837, 9810240078 E-mail : ekoproengr@gmail.com, website : www.ekoproengr.com

TC-5063

## TEST REPORT

### Noise Monitoring

Test Report No. : EKO/E-559/031023

Issue Date : 07/10/2023

Issued To : HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description : Ambient Noise  
Sample Drawn on : 28/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : Near Compressor Area  
Sampling Plan & Procedure : SOP-N/01  
Weather Condition : Normal  
Analysis Duration : 03/10/2023 To 04/10/2023  
Remark (if any) : NA

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	IS : 9989	73.2	dB (A)	75.0
2	Leq (Night Time)		64.5	dB (A)	70.0

#### Notes :

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

For EKO PRO ENGINEERS PVT. LTD.  
PURNIMA CHAUDHAN  
TECHNICAL MANAGER  
(Authorized Signature)





# EKO TESTING LABS

## Eko Pro Engineers Pvt. Ltd.

Environmental Consultants and Analytical Laboratory  
(An ISO 9001:2015 Certified Company)

Contact : +91 - 9810240678



Office & Laboratory : 2/41, South Side of G. T. Road, (Opposite Industrial Area, Ghaziabad - 201 009 (Distt. NCR) INDIA  
Contact No. : 9711159230, 9810240678, 9810240678 | email : [enquiry@eko.in](mailto:enquiry@eko.in), [ekoproengineers@gmail.com](mailto:ekoproengineers@gmail.com), website : [www.eko.in](http://www.eko.in)

### TEST REPORT

#### Effluent Sample Analysis

Test Report No. : EKO/E-569/031023

Issue Date : 07/10/2023

Issued To : HINDUSTAN ZINC LIMITED  
Plot No. 2, Sec - 14  
IIE, Sidcul Pantnagar,  
Rudrapur - Uttarakhand

Sample Description : STP Outlet (Final Exit Point)  
Sample Drawn on : 29/09/2023  
Sample Drawn by : EPEPL (Mr. Chandan Sharma)  
Sample Received on : 03/10/2023  
Sampling Location : From STP Plant  
Sampling Plan & Procedure : SOP-W/66  
Sample Quantity : 2.0 Litre  
Environmental Condition : Normal  
Analysis Duration : 03/10/2023 To 07/10/2023  
Remark (if any) : NA

#### RESULTS

S. No.	Parameters	Test Method	Results	Units	Limits as per CPCB (EPR-1986 Schedule-VI Part-A)
1	pH	IS : 3025 (P-11)	6.78	-	5.5-9.0
2	Total Suspended Solids	IS : 3025 (P-17)	26.0	mg/l	100.0
3	COD (as O <sub>2</sub> )	IS : 3025 (P-58)	52.5	mg/l	250.0
4	BOD (@27°C for 3 days)	IS : 3025 (P-44)	12.0	mg/l	30.0
5	Total Nitrogen (as N)	APHA 4500 N	3.45	mg/l	100.0
6	Phosphate (as P)	IS : 3025 (P-31)	0.38	mg/l	5.0
7	Ammonical Nitrogen (as N)	APHA 4500 NH <sub>3</sub>	1.29	mg/l	50.0
8	Faecal Coliform	APHA 9221 E	60	MPN/100ml	1000.0
9	Total Dissolved Solids	IS : 3025 (P-16)	705.0	mg/l	-
10	Oil & Grease	IS : 3025 (P-39)	< 4.0	mg/l	10.0

#### Notes:

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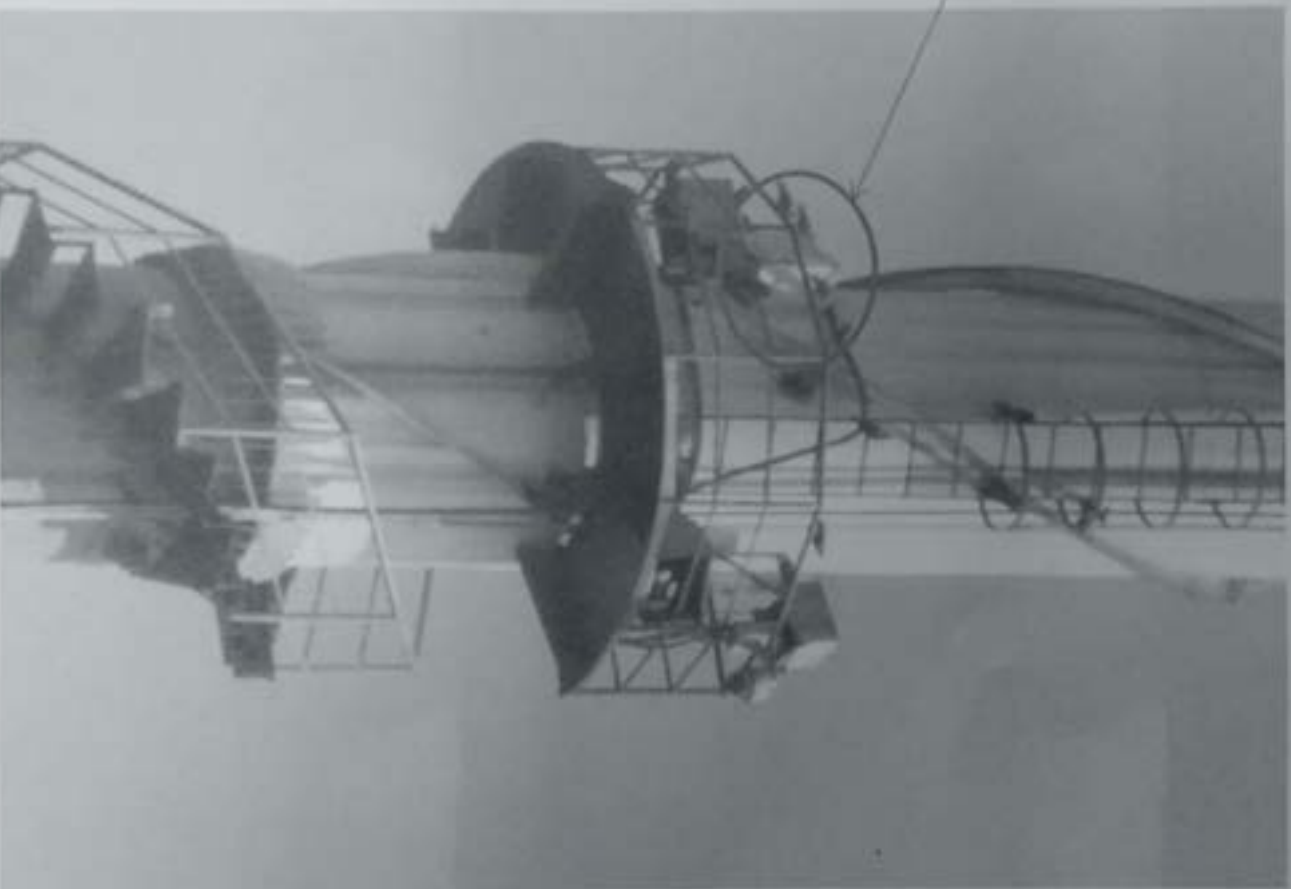
**\*\*End of Report\*\***

For EKO PRO ENGINEERS PVT. LTD.  
SHIVANGI SINGH BAIZADA  
SECTION INCHARGE MICROBIOLOGY  
(Authorised Signatory)

For EKO PRO ENGINEERS PVT. LTD.  
PURNIMA CHAUHAN  
TECHNICAL MANAGER  
(Authorised Signatory)

## PM analyzer Installed at Stack

PM analyzer



## Hygiene ventilation system



Bag filters arrangement  
for Hygiene ventilation




### STP PLANT



### ETP PLANT



## PHOTOGRAPHS OF HAZARDOUS WASTE STORAGE YARD

S. No.	Name of the waste	Photographs
1.	Zinc Dross Storage Yard	
2.	Lead Dross Storage Yard	
3.	Used Oil Storage Yard	

## ANNEXURE-4

Ground Water Withdrawal FY 2023-24			
Month	Ground Water Withdrawal	UOM	Rain water utilization
Apr-23	2,584	Cu.m	1,945
May-23	2,377	Cu.m	2,907
Jun-23	4,449	Cu.m	312
Jul-23	2,098	Cu.m	781
Aug-23	1,089	Cu.m	2,886
Sep-23	873	Cu.m	2,968
<b>Total</b>	<b>13,470</b>	<b>Cu.m</b>	<b>11,799</b>

- All reading recorded in cubic meter.

### Water Withdrawal Point – Borewell



Resonance, Internet (0.3)

# RAIN WATER STORAGE POND HZL- PANTNAGAR



Pond No-1



Pond No-2



Pond No-3

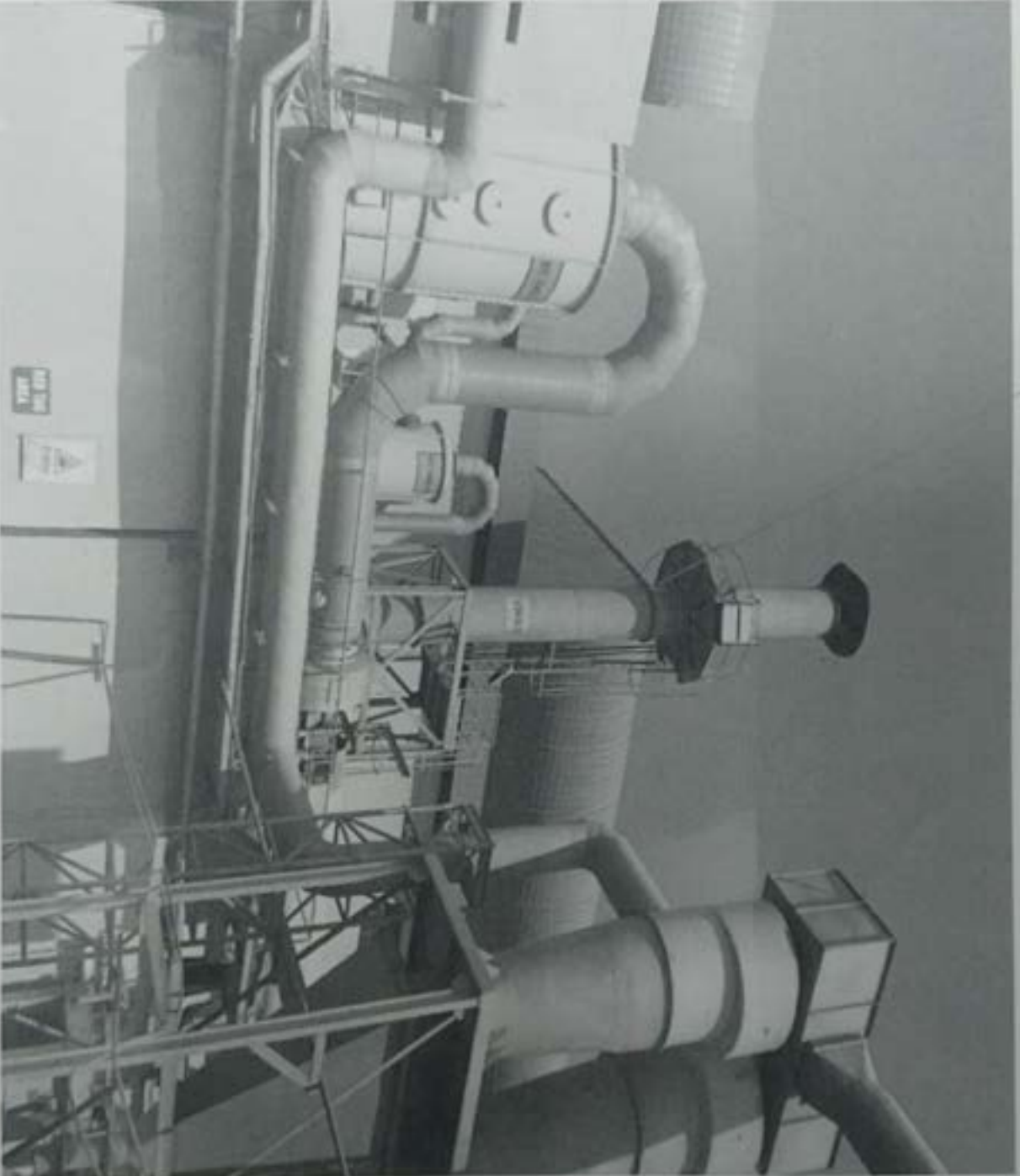


Pond No-4

## Silver Process Stack



## Silver NOx Stack



# ANNEXURE-6

## On-Going CSR Activities at PMP FY2023-24

### **Flag Ship Projects: Continuing in FY 23-24**

1. Sakhi Project – Strengthening Women Empowerment
2. ME – Providing Micro Enterprises support to SHG women for their sustainability
3. Zinc Kaushal – Providing skilling training to rural youth through Tata Motors Tata Strive Project

### **Other Activities:**

- Exco member visited to our production centre.
- HZL CHRO visited Production centre and interacted with SHG women.
- One Girl studying in Unchi Udaan project from PMP got selection in IIT Guwahati, Assam.
- Participated in Birthday celebrations of one SHG at jagatpura rural.
- Micro Enterprises Thematic champion visited PMP production centre and pickle unit.
- Blood Donation camp conducted by HR department. 100 donors donated Blood on this Occasion.
- Engineers' day celebration done at PMP by HR Department.
- Viswa Karma Pooja celebrated at PMP in both plants.
- Ganesh Pooja conducted by HR department in Admin. Block.
- E booklet made of Jeevan Tarang students was launched by UH.

## On-Going CSR Activities at PMP FY2023-24



**Women Empowerment-** Strengthening of Self-Help Group by 33 villages and covered around 3000+ families. This project (Sakhi) was implementing through Manjari Foundation. Started in the year 2017 and continuing.

### On-Going CSR Activities at PMP FY2023-24



**Youth Skill Development Program-** Imparting Skill training program with TATA STRIVE in field of Auto Sales, Auto technicians, Automotive Services in two, three & four wheelers for Youth from nearby community.

## On-Going CSR Activities at PMP FY2023-24



Misc. activities- Blood Donation camp organized at location in consultation with CMO, US Nagar, Organized Run for Zero Hunger Campaign for meals to unprivileged children's



**vedanta**  
SUSTAINABLE GROWTH



**HINDUSTAN ZINC**  
SUSTAINABLE GROWTH

### BLOOD DONATION CAMP AT PANTNAGAR METAL PLANT

**DONATING BLOOD, SAVING LIVES**

Pantnagar Metal Plant organized a Blood Donation Camp, resulting in a remarkable contribution of 100 units of blood. The event was graced by Dr. Mansel Sharma, Chief Medical Officer of Ludhiana Singh Nagar District, who was motivated by Hindustan Zinc's dedication towards this noble cause. These initiatives remind us of our capacity to make a tangible impact on the lives of others.





