

HINDUSTAN ZINC Date: 16/05/2020

To.

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

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 October-2019 to March-2020.

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 October-2019 to March-2020.

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

Thanking you.

Yours faithfully.

(Ravish Sharma)

SBU Director

Pantnagar Silver Refinery Plant

Hindustan Zinc Limited

CC:

1. Member Secretory, SEIAA, Dehradun

Plot No 283, 263153, Utlarakhand. Rudrapur 263153, Utlarakhand

2. MS office, UEPPCB, Dehradun

Regional Officer, UEPPCB, Kashipur

4. Office copy, HZL

**Hindustan Zinc Limited** 

Pantnagar Metal Plant Plot No. 2 & 3, Sector 14, IIE, SIDCUL Pantnagar 2: 05944-257300, www.hzlindia.com

Regd. Office: Yashad Bhawan, Udaipur (Rajasthan) - 313 004

CIN: L27204RJ1966PLC001208

## Compliance Report of Environment Clearance (October-2019 to March-2020)

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		
	Pre Operation-			
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 8 29.03.2019 respectively. Also renewal CCA FY2019-20 has been granted on date-17.09.2019 and renewal FY2020-21 also applied having application number- 254848.		
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.		
	During Operation Phase-			
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 (powder/ingot etc.) product, Antimony	Noted and Being complied.		

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
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.
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).
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 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.
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. Also renewal CCA FY2019-20 has been granted on date-17.09.2019 and renewal FY2020-21 also applied having application number- 254848.
	Concentrate(precipitate/salt mix)- 1800TPA, Bismuth Concetrate(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.	

		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 for the year 2019-20 of Hazardous waste under Hazardous Waste Rules 2008 has been granted by UEPPCB along with CCA and renewal FY2020-21 also applied having application number- 254848. 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 99.5% 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 and health aspects. Pre- employment and routine	Being complied. Trainings to all employees on Safety and health aspects are being provided on

	periodical medical examinations for all employees shall be undertaken on regular basis.	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 dedicated Fire tender and team a					
18	Rainwater harvesting for surface run off shall be ensured. Before recharging the surface run off, pretreatment must be done to remove suspended matter, oil and other particles.	Complied. Three rain water storage ponds of capacity 2542, 1500 and 841 cum already provided inside the plant area for maximum storage & reuse of the rainwater in the process. In FY 2019-20, we have reused around 13,638 cu.m 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:				
23	The overall noise levels in and around the plant area shall be kept well within the standards by providing	Being complied. Various noise reduction measures are adopted, to ensure compliance to				

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).	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			
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.	herewith as Annexure 1(d).  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.			
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/19-20/H-I dated 13.11.2019.  Six monthly compliance reports are being uploaded on company website. Link of website uploading EC compliance of April'2019 to September'2019 is https://www.hzlindia.com/wp-content/uploads/EC-Compliance-Report-Silver-plant H1 2019-20-Pantnagar-Metal-Plant-14-11-2019.pdf			
Entire Life-				
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).			
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.			
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.			
Training shall be imparted to all employees on safety and health aspects. Pre- employment and routine periodical medical examinations for all employees shall be undertaken	Being complied. Trainings to all employees of Safety and health aspects are being provided of			
	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).  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.  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.  Entire Life—  The vehicles used at the factory site should comply with emission norms and noise level standards of CPCB.  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.  Adequate drinking water and sanitation facility shall be provided on site for the workforce.  Training shall be imparted to all employees on safety and health aspects. Pre- employment and routine periodical			

Hindustan Zinc Limited
Pantnagar Metal Plant
Plot No.283, Sector 14, IIE, SIDCUL,
Rudrapur – 263153, Uttarakhand.

	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 are 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. Three rain water storage ponds of capacity 2542, 1500 and 841 cum already provided inside the plant area for maximum storage & reuse of the rainwater in the process. In FY 2019-20, we have reused around 13,638 cu.m 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.			
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 proposed.	Corporate Environment Responsibility is being carried out through various projects planned in the financial year under CSR program.  Copy of the initiatives are attached as Annexure-6		



Confact ( +91 - 951, 2-0 -



## eko pro engineers pvt. Ltd.

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

Office: 8 Laboratory | 32/41, South Side of G. T. Road, UPSIDC Industrial Arra, Specifican - 70 ; 700 (Joth-NCR) (NOA) Contact No. 97/1592/9 971159427 SMS Vinatcapp Not 19711169422; East 1 cmal(Geophrain, exoprophyreasig

## **TEST REPORT**

## Water Sample Analysis

Test Report No : EKO/229/271219

Issue Date: 02/01/2020

Issued To

: HINDUSTAN ZINC LIMITED.

Plot No. 2 Sec-14

IIE, Sidcut Pantnagar Rudrapur - Uttrakhand

Sample Description

Ground Water 26/12/2019

Sample Drawn on Sample Drawn by

EPEPL (Mr. Rahul Kashyap)

Sample Received on

27/12/2019

Sampling Location

From Borewell

Sampling Plan & Procedure

SOP-W/86

Sample Quantity

3.0 Litre

**Environmental Conditions** 

: Normal

Analysis Duration

27/12/2019 To 31/12/2019

Remark (if any)

: NA

### RESULTS

		REGULIO				
S. No.	Parameters	Test Methods	Results	Units	Limits as per IS: 10500- 2012 (Amd.No.2 Sep-2018)	
J. 110.	T aratheters	reat, we moda	Results	"""	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)	7:62	-	6.5-8.5	No relaxation
6	Total Hardness (as CaCO <sub>3</sub> )	IS: 3025 P-21)	180.0	mg/L	200.0	600,0
7	Calcium (as Ca)	' IS: 3025 (P-40)	34/8 -	mg/L	75.0	200.0
8	Iron (as Fe) #	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L	1.0	No relaxation
9	Chloride (as Cl)	IS: 3025 (P-32)	30.0	mg/L	250,0	1000.0
10	Residual Free Chlorine	IS: 3025 (P-26)	<0.1	mg/L	0.2	1.0
11	Fluoride (as F)	IS: 3025 (P-60)	<1.0	mg/L	1.0	1.5
12	Total Dissolved Solids	IS: 3025 (P-16)	310.0	mg/L	500.0 ·	2000.0
13	Magnesium (as Mg)	IS: 3025 (P-46)	22.6	mg/L	30:0	100.0
14	Copper (as Cu)	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L	0.05	15
15	Manganese (as Mn) #	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L	0.1	0.3
16	Sulphate (as SO <sub>4</sub> ).	IS: 3025 (P-24)	36.9	mg/L	200.0	400.0
17	Nitrate (as NO <sub>3</sub> )	IS: 3025 (P-34)	1.24	mg/L	45.0	No relaxation
18 '	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> OH)	IS: 3025 (P-43)	<0.001	mg/L.	0.001	0.002
19	Mercury (as Hg)	EKO/CHEM/SOP-ICPMS/W-01	<0.001	mg/L	0.001	No relaxation
20	Selenium (as Se)	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L.	0.01	No relaxation
21	Arsenic (as As)	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L	0.01	No relaxation
22	Cyanide (as CN)	APHA 4500 CN-K	Absenț	mg/L	0.05	No relaxation
23	Lead (as Pb)	EKO/CHEM/SOP-ICPMS/W-01	<0,005	mg/L	0.01	No relaxation
24	Zinc (as Zn)	EKO/CHEM/SOP-ICPMS/W-01	<0.01	mg/L	5.0	15.0

Contact : +91 - 9810243543

issue Date : 02/01/2020



## eko pro engineers pvt. Ltd.

Environmental Consultants and Analytical Laboratory
(An 190 9001:2015 Certified Company)

Gilita & Laboratoly - 2241, South Side of G. T. Rhad. UPSIDO Industrial Area, Griartabad - 201 069 (Distri-NCR) (NDF Contents - 974179210, 974 (1237), SMSWhassap No., 971163122; E-hāli , Alpalitekshrata, akombergincas Eginatiscom, vebsite, virz etop om

Test Report No: EKO/229/271219

25	Total Chromium (as Cr)	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L	0.05	No relaxation
26	Total Alkalinity (as CaCO <sub>3</sub> )	IS: 3025 (P-23)	172.0	mg/Ļ	200.0	600:0
27	Aluminium (as Al)	EKO/CHEM/SOP-ICPMS/W-01	<0.005	mg/L,	0.03	.0.2
28	Boron (as B)	IS: 3025 (P-57)	<0,25	mg/L	0.5	2.4
29	Cadmium (as Cd)	EKO/CHEM/SOP-ICPMS/W-01	<0.001	mg/L	0.003	No relaxation
30	Anionic Detergents (as MSAS)	APHA 5540	<0,1	mg/L	0.2	1,0
31	Total Coliform	IS: 1622	Absent	MPN/100ml	Should be Absent	No relaxation
32	E,coli	IS: 1622	Absent	Per 100mL	Should be Absent	No relaxation

Remark: Standard Applicable only for Drinking Water.

### Notes:

- 1. The results given above are related to the tested sample, as received & mentioned parameters.(\* non accredited parameter).

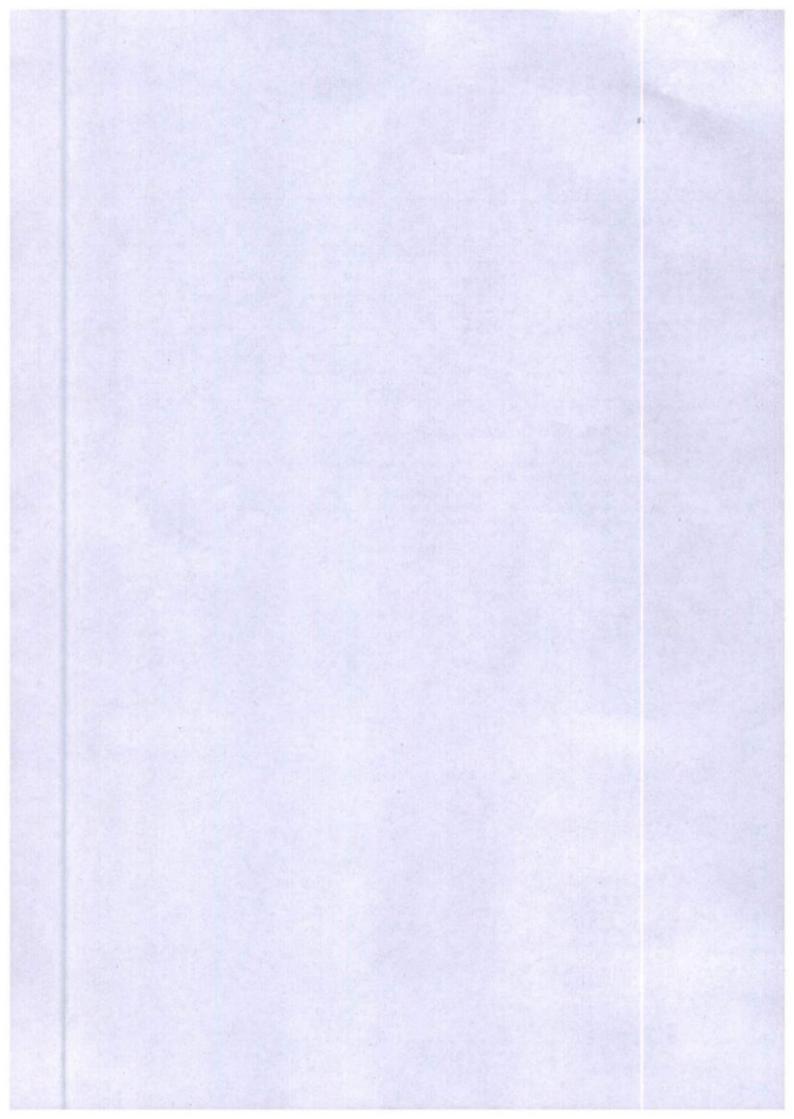
  The customer asked for the above tests only.
- 2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
- 3 The test report will not be used for any publicity/legal purpose.
- 4. The test samples will be disposed off after 15 days 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 RAIZADA
SECTION INCHARGE MICROBIOLOGY
(Authorised Signatory)

For EKORROLENGINEERS PVT. LTD

ECHNICAL MANAGER Authorised Signatory)







## 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. 9711159219, 9711159427, SMS/Whatsapp No.: 9711153422, E-mail: email:@ekopro.im, eapproengmeers/bomail.com, woosite, www.excoro.im

## TEST REPORT

## Stack Emission Analysis

Test Report No.: EKO/146/270220

Issued To

Rudrapur - Uttrakhand

Sample Description Sample Drawn on

Sample Drawn by Sample Received on

Time of Sampling (minutes) Sampling Location

Sampling Plan & Procedure

Analysis Duration Source of Emission

Capacity

Operating Load

Normal Operation Schedule

Type of Stack

Diameter of Stack (meter)

Height of Stack from Ground Level (meter) Height of Stack from Roof Level (meter)

Height of Sampling Location (meter) Type of Fuel Used Fuel Consumed per hour

Ambient Temperature (°C) Stack Temperature (°C)

Average Velocity of Flue Emission (m/sec)

Average Flow Rate (Ipm) Control Measures (if any)

Remark (If any)

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sec-14 IIE. Sidcul Pantnagar

Stack Emission

26/02/2020

EPEPL (Mr. Rahul Kashyap) 27/02/2020

30.0

NA SOP-SE/09

27/02/2020 To 03/03/2020 Stack Attached To Furnace

20.8 MT/Day Total

: 2.5 MT

: Batch Wise (3 Shift)

: Metalic With Refracotry Lining

: 1.6 at top : 40.0

: 21.8

: 23.3 : HSD

200.0 lph : 22.0 150.0

: 7.2 : 23.4

: Nil

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	Particulate Matter (as PM)	IS: 11255 (P-1)	31.2	mg/Nm <sup>3</sup>	150.0
2	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 11255 (P-2)	11.3	mg/Nm <sup>3</sup>	
3	Oxide of Nitrogen (as NOx)	IS: 11255 (P-7)	51.9	mg/Nm <sup>3</sup>	
4	Carbon Monoxide (as CO)	IS: 13270	< 0.2	% V/V	1.0
5	Lead (as Pb)	USEPA (P-12)	<1.0	mg/Nm <sup>3</sup>	10.0
6	Total Hydrocarbon (as HC)	IS: 5182 (P-17)	ND	mg/Nm <sup>3</sup>	
7	Total VOC	IS: 5182 (P-11)	ND	mg/Nm <sup>3</sup>	-

- 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.

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 gustomer.

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

\*\* End of Report \*\*

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## 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 (Dethi-NCR) INDIA Contact No.: 9711159210, 9711159427, SMSWhatsapp No.: 9711163422; E-mail: email@ekspro.in, eksproengineers@gmail.com, website : www.elopro.in

## TEST REPORT

### Stack Emission Analysis Issue Date: 03/03/2020 Test Report No.: EKO/144/270220 : HINDUSTAN ZINC LIMITED. Issued To Plot No. 2 Sec-14 IIE, Sidoul Pantnagar Rudrapur - Uttrakhand Stack Emission Sample Description 25/02/2020 Sample Drawn on EPEPL (Mr. Rahul Kashyap) Sample Drawn by 27/02/2020 Sample Received on 30.0 Time of Sampling (minutes) NA Sampling Location SOP-SE/09 Sampling Plan & Procedure 27/02/2020 To 03/03/2020 Analysis Duration Stack Attached To Nox Scrubber Source of Emission Capacity Operating Load Normal Operation Schedule Batch Wise (3 Shift) Metalic & PP Lining Type of Stack 1.1 at top Diameter of Stack (meter) : 20.0 Height of Stack from Ground Level (meter) : 1.8 Height of Stack from Roof Level (meter) : 17.3 Height of Sampling Location (meter) Type of Fuel Used Fuel Consumed per hour Ambient Temperature (\*C) : 22.0 : 89.0 Stack Temperature (°C) 6.2 Average Velocity of Flue Emission (m/sec) 23.9 Average Flow Rate (lpm)

## Sampling Instrument Used-Stack Monitoring kit APM-610 RESULTS

Nox Scrubber

S. No.	Parameters	Test Methods	Results	Units	Limits as per EPA-1986 Schedule -VI Part-D
4	Particulate Matter (as PM)	IS: 11255 (P-1)	22.4	mg/Nm <sup>3</sup>	150.0
2	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 11255 (P-2)	8.36	mg/Nm <sup>3</sup>	
3	Oxide of Nitrogen (as NOx)	IS: 11255 (P-7)	41.2	mg/Nm <sup>3</sup>	
4	Carbon Monoxide (as CO)	IS: 13270	< 0.2	% V/V	1.0
5	Lead (as Pb)	USEPA (P-12)	<1.0	mg/Nm <sup>3</sup>	10.0
6	Total Hydrocarbon (as HC)	IS: 5182 (P-17)	ND	mg/Nm <sup>3</sup>	Factor &
7	Total VOC	IS: 5182 (P-11)	ND	mg/Nm <sup>3</sup>	

### Notes

Control Measures (if any)

Remark (if any)

- 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.
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- 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.
- Responsibility of the Laboratory is limited to the invoiced amount only.
  - " End of Report "



Contact: +91 - 9810243879

Issue Date: 03/03/2020



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## **TEST REPORT**

## Workzone Air Quality Monitoring

Test Report No.: EKO/152/270220

: HINDUSTAN ZINC LIMITED.

Issued To

Ptot No. 2 Sec-14
IIE, Sidoul Panthagar
Rudrapur - Uttrakhand

Sample Description : Workzone Air : Sample Drawn on : 26/02/2020

Sample Drawn by : EPEPL (Mr. Rahul Kashyap)

Sample Received on : 27/02/2020

Sampling Location : Furnace Area in Silver Plant

Sampling Plan & Procedure : SOP-AAQ/15

Analysis Duration : 27/02/2020 To 03/03/2020

Sampling Time : 08 Hrs.
Ambient Temperature (°C) : 22.0.

Average Flow Rate of SPM (m³/min) : 1.85

Average Flow Rate of Gases (lpm) : 1.85

Weather Condition : Clear

Remark (if any) : NA

RESULTS

'S. No.	Parameters		Test Methods	Results	::Units	Permissible Limits
1	SPM	•	IS: 5182 (P-4)	0.519	ˈmg/m³	15.0 as per OSHA
2	Sulphur Dioxide (as SO <sub>2</sub> )		IS: 5182 (P-2)	0.006	mg/m <sup>3:</sup>	5.0 as per Factories Act, 1948
ä	Nitrogen Dioxide (as NO₂)		IS: 5182 (P-6)	0.016	mg/m³	6.0 as per Factories Act, 1948
4	Lead (as Pb)		EKO/CHEM/SOP/AAQ- 02	< 0.1	mg/m <sup>ã</sup>	0.15 as per Factories Act 1948
5	Zinc (as Zri)		EKO/CHEM/SOP/AAQ- 02	< 0,1	mg/m³	-

### Notes:

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

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\*\*End of Report\*\*

'Page 1 of 1



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Office & Laboratory : 32/41, South Side of G. T. Road, UPSIDC Industrial Afea, Ghazlahad - 201 009 (Delhi-NGR) IND A Contact No. :9711159210, 9711159427, SNSWhatsaop No. :9711163422: E-mail amai@akoproin, ekoproeing.neers@gmail.com website : www.skcgro. ii

## **TEST REPORT**

Workzone Air Quality Monitoring

Test Report No.: EKO/153/270220

: HINDUSTAN ZING LIMITED.

issued To

Ptot No. 2 Sec-14

IIE, Sidoul Pantnagar Rudrapur - Uttrakhand

Sample Description

Workzone Alr

Sample Drawn on

: 26/02/2020

Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020

Sampling Location

Bag Filter Area Silver Plant

Sampling Plan & Procedure

SOP-AAQ/15

Analysis Duration

27/02/2020 To 03/03/2020

Sampling Time

08 Hrs.

Ambient Temperature (°C)

: 08 Mrs. : 22.0

Average Flow Rate of SPM (m<sup>3</sup>/min)

1.7

Average Flow Rate of Gases (Ipm)

: 1.7 : 1.7

Weather Condition

: Clear

Remark (if any)

NA

### RESULTS

S. No.	Parameters		Test Methods	Results	Units	Permissible Limits
1	SPM		IS: 5182 (P-4)	0.592	mg/m³	15.0 as per OSHA
	Sulphur Dioxide (as SO <sub>2</sub> )		IS: 5182 (₽-2)	0.010	mg/m³	5.0 as per Factories Act, 1948
3	Nitrogen Dioxide (as NO <sub>2</sub> )		IS: 5182 (P-6)	0.019	mg/m³	6.0 as per Factories Act, 1948
4	Lead (as Pb)	<del>- '</del>	EKO/CHEM/SOP/AAQ-	< 0.1	mg/m³	0.15 as per Factories Act 1948
5	Zinc (as Zn)		EKO/CHEM/SOP/AAQ-	< 0.1	mg/m <sup>3</sup>	

### Notes

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\*\*End of Report\*\*

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Office & Laboratory 32/41, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Dalha-NCR) INDIA Contact No. 97(1)59210, 97(1)59227, SMSANhalsapp No. 97(1)63422; E-mail email@ekoprolin ekoproling neers@gmail.com, website (MARIA electron) in

## TEST REPORT

Workzone Air Quality Monitoring

Test Report No.; EKO/154/270220

Issued To

: HINDUSTAN ZINC LIMITED.

Plot No. 2 Sec-14
IIE, Sidcul Pantnagar

IIE, Sidoul Pantnagar Rudrapur - Uttrakhand

Sample Description : Workzone Air Sample Drawn on : 26/02/2020

Sample Drawn by : EPEPL (Mr. Rahul Kashyap)

Sample Received on : 27/02/2020

Sampling Location : Silver Plant Hydro Top Floor

Sampling Plan & Procedure : SOP-AAQ/15

Analysis Duration : 27/02/2020 To 03/03/2020

Sampling Time : 08 Hrs.

Ambient Temperature (°C) : 22.0

Average Flow Rate of SPM (m³/min) : 1.75

Average Flow Rate of Gases (lpm) : 1.75

Weather Condition : Clear

Remark (if any) : NA

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Permissible Limits		
1	SPM	· IS: 5182 (P-4)	0.428	mg/m³	15:0 as per OSHA		
2	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	0:009	mg/m³	5.0 as per Factories Act, 1948		
3	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	0.017	mg/m³	6.0 as per Factories Act. 1948		
4	Lead (as Pb)	EKO/CHEM/SOP/AAQ-	< 0.1	mg/m³	0.15 as per Factories Act. 1948		
5	Zinc (as Zn)	EKO/CHEM/SOP/AAQ- 02	< 0.1	mg/m³	:		

### Notes:

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

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

Office & Laboratory 32/41, South Side of G. T. Road, UPS/DC industrial Area, Ghaziabad - 201 009 (Delhi-NCR) INDIA. Contect No. 9711159210, 9711159427, SMS/Whalsopp No. 9711163/422, E-mail , empligekopro in alloproengineers@gmath.com, reballs : www.elvercin.

## TEST REPORT

Noise Monitoring

Test Report No.: EKO/159/270220

Issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sec-14 IIE, Sidcul Pantnagar

Rudrapur - Uttrakhand

Sample Description

Sample Drawn on

Sample Drawn by

Sample Received on

Sampling Location

Sampling Plan & Procedure

Weather Condition

Analysis Duration Remark (if any)

Workzone Noise

26/02/2020

EPEPL (Mr. Rahul Kashyap)

: 27/02/2020

PYRO Section Of Silver Plant

: SOP-N/01

: Normal

: 27/02/2020 To 28/02/2020

NA

## RESULTS

Kemark (if only)		RESULIS	RESULTS		United Mindred
S. No.	Parameters	Test Methods	Results	Units dB (A)	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
	(Day Time)	EKO/CHEM/SOP/S/N-01	69.8	UD (A)	
1	1 Leq (Day Time)	- USBS(SN) 04	64.2	dB (A)	70.0
2	Leq (Night Time)	EKO/CHEM/SOP/S/N-01		1	
5					

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

"End of Report"

FOR EKO PRO ENGINEERS PAR LTD. PURNIMACHADHAN

RECHNICAL MANAGER Authorised Signatory)



## eko pro engineers pyt. LTD.

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

Office & Laboratory: 32/41, South Side of G. T. Road, UPStDC Industrial Area. Ghazlebad - 201-009 (Delhi-NCR) INDIA. Contact No. 97(1)59240, 97(1)59427, SMSWhatsepp No. 97(1)53422. E-mail. employed-point expenses generations, website. when expenses

## **TEST REPORT**

Noise Monitoring

Test Report No. : EKO/160/270220

issued To

: HINDUSTAN ZINC LIMITED.

Plot No. 2 Sec-14 IIE, Sidoul Pantnagar

IIE, Sidoul Pantnagar Rudrapur - Uttrakhand

Sample Description

: Workzone Noise : 26/02/2020

Sample Drawn on Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020-

Sampling Location

: Bag Filter In Silver Plant

Sampling Plan & Procedure

: SOP-N/01

Weather Condition
Analysis Duration

: Normal : 27/02/2020 To 28/02/2020

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)	EKO/CHEM/SOP/S/N-01	72.6	dB (A)	75.0
2	Leq (Night Time)	'EKO/CHEM/SOP/S/N-01	65.8	dB (A)	70.0

## Notes:

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The customer asked for the above tests only.

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\*\*End of Report\*\*

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## eno pro engineers pvt. Ltd.

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

TEST REPORT

Noise Monitoring

Test Report No.: EKO/160/270220

: HINDUSTAN ZINC LIMITED.

Plot No. 2 Sec-14

IIE, Sidoul Pantnagar Rudrapur - Uttrakhand

Sample Description

Workzone Noise

Sample Drawn on

Issued To

: 26/02/2020

Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020

Sampling Location

: Bag Filter in Silver Plant

Sampling Plan & Procedure

: SOP-N/01

Weather Condition

: Normal

Analysis Duration

27/02/2020 To 28/02/2020

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)	EKO/CHEM/SOP/S/N-01	72.6	dB (A)	75.0
2.	Leg (Night Time)	EKO/CHEM/SOP/S/N-01	65.8	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.
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\*\*End of Report\*\*

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Page 1 of 1

EKO PRO



Contact 0+91 - 9810243870

## 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. Roed, UPSIDC Industrial Area; Ghaziabed 201 009 (Delhi-NCR) INDIA Contact No. 97(1159210, 97(1159421, SMSWHatsapp No. 97(1163422, E-mail: email@elopro.in, ekopioengineerafiligmail.com, wilcold, www.necode.

## TEST REPORT

**Ambient Air Quality Monitoring** Issue Date: 03/03/2020 Test Report No.: EKO/135/270220 : HINDUSTAN ZINC LIMITED Issued To Plot No. 2. Sec - 14 IIE, Sidcul Pantnagar Rudrapur - Uttraknand Ambient Air Sample Description 26/02/2020 To 27/02/2020 Sample Drawn on : EPEPL (Mr. Rahul Kashyap) Sample Drawn by Sample Received on : 27/02/2020 Sampling Location : Back Side of DG Area Sampling Time : 24.0 Hrs. Sampling Plan & Procedure : SOP-AAQ/15 : 27/02/2020 To 02/03/2020 Analysis Duration : 21.0 Ambient Temperature ("C) Average Flow Rate of SPM (m3/min.) 1.1 1.0 Average Flow Rate of Gases (Ipm) Clear Weather Conditions

## RESULTS

NA

S. No.	Parameters	Test Methods	Results	Units	Limits as per CPCB Notification, 18th Nov 2009
1	Particulate Matter (PM10)	IS: 5182 (P-23)	82.6	µg/m³	100.0
2	Particulate Matter (PM2.5)	EK0/CHEM/SOP/AAQ-01	51.8	µg/m³	60.0
3	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	10.2	µg/m³	80.0
4	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	32.4	µg/m³	80.0
5	Carbon Monoxide (as CO)	IS: 5182 (P-10)	0.72	mg/m <sup>3</sup>	4.0
6	Lead (as Pb)	EK0/CHEM/SOP/AAQ-02	<0.1	µg/m³	1.0
7	Nickel (as Ni)	EKO/CHEM/SOP/AAQ-02	<15.0	ng/m <sup>3</sup>	20.0
8	Arsenic (as As)	EK0/CHEM/SOP/AAQ-02	<5.0	ng/m³	6.0
9	Ozone (as O <sub>3</sub> )	IS: 5182 (P-9)	<10.0	µg/m³	180.0
10	Ammonia (as NH <sub>3</sub> )	APHA Method 401	<20.0	µg/m³	400.0
11	Benzene (as C <sub>6</sub> H <sub>6</sub> )	IS: 5182 (P-11)	<1.0	µg/m³	5.0
12	Benzo(alpha) Pyrine-Particulate Phase Only	EK0/CHEM/SOP/AAQ-09	<1.0	ng/m³	1.0

### Notes:

Remark (if any)

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" End of Report "

FOR EKO PRO ENGINEERS PVT LTD
PURNIMA CHAUHAN
TECHNICAL MANAGER
(Authorsed Signatory)

Contact: +91 - 9610243870



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

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TEST REPORT			
	Ambient Air Quality Monitoring		
Test Report No. : EKO/136/270220		Issue Date: 03/03/2020	
issued To	: HINDUSTAN ZINC LIMITED		
	Plot No. 2, Sec - 14		
	IIE, Sidcul Pantnagar		
	Rudrapur - Uttrakhand		
Sample Description	: Ambient Air		
Sample Drawn on	: 26/02/2020 To 27/02/2020		
Sample Drawn by	: EPEPL (Mr. Rahul Kashyap)		
Sample Received on	: 27/02/2020		
Sampling Location	: SE Corner of Lead Plant		
Sampling Time	: 24.0 Hrs.		
Sampling Plan & Procedure	: SOP-AAQ/15		
Analysis Duration	: 27/02/2020 To 02/03/2020		
Ambient Temperature (°C)	: 21.0		
Average Flow Rate of SPM (m3/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)	78.4	µg/m³	100.0
2	Particulate Matter (PM2.5)	EK0/CHEM/SOP/AAQ-01	49.3	µg/m <sup>3</sup>	60.0
3	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	13.5	µg/m <sup>3</sup>	80.0
4	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	34.5	µg/m³	0.08
5	Carbon Monoxide (as CO)	IS: 5182 (P-10)	0.74	mg/m <sup>3</sup>	4.0
6	Lead (as Pb)	EK0/CHEM/SOP/AAQ-02	<0.1	µg/m³	1.0
7	Nickel (as Ni)	EK0/CHEM/SOP/AAQ-02	<15.0	ng/m <sup>3</sup>	20.0
8	Arsenic (as As)	EK0/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/m³	180.0
10	Ammonia (as NH <sub>3</sub> )	APHA Method 401	<20.0	µg/m³	400.0
11	Benzene (as C <sub>6</sub> H <sub>6</sub> )	IS: 5182 (P-11)	<1.0	µg/m³	5.0
12	Benzo(alpha) Pyrine-Particulate Phase Only	EK0/CHEM/SOP/AAQ-09	<1.0	ng/m <sup>3</sup>	1.0

- 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.
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" End of Report "

FOR PRO PRO ENGINEERS RVT LTD. PURNIMA CHAUHAN TECHNICAL MANAGER (Authorised Signatory)

EKO PRO



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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 Comise No.: 9751159210, 9711159427, SMS/Whatsapp No.: 9711163422. E-mail: email@ekopro.in. ekoproengineers@gmail.com, synbole ; www.ehopp.in

## TEST REPORT

**Ambient Air Quality Monitoring** 

Test Report No.: EKO/137/270220

Issued To

: HINDUSTAN ZINC LIMITED.

Plot No. 2, Sec - 14 IIE, Sidcul Pantnagar Rudrapur - Uttrakhand

Sample Description

Sample Drawn on

Sample Drawn by

Sample Received on

Sampling Location

Sampling Time

Sampling Plan & Procedure

Analysis Duration

Ambient Temperature (°C)

Average Flow Rate of SPM (m3/min.) Average Flow Rate of Gases (Ipm)

Weather Conditions Remark (if any)

Ambient Air

26/02/2020 To 27/02/2020

: EPEPL (Mr. Rahul Kashyap)

: 27/02/2020

: Near Security Main Gate : 24.0 Hrs.

: SOP-AAQ/15

: 27/02/2020 To 02/03/2020

: 1.1

1.0

Clear

## RESULTS

RESULIS						
Parameters	Test Methods	Results	Units	Limits as per CPCB Notification, 18th Nov 2009		
Particulate Matter (PM10)	IS: 5182 (P-23)	79.6	µg/m³	100.0		
Particulate Matter (PM2.5)	EK0/CHEM/SOP/AAQ-01	51.3	µg/m³	60.0		
Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	14.2	µg/m³	80.0		
Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	31.4	µg/m³	80.0		
Carbon Monoxide (as CO)	IS: 5182 (P-10)	0.78	mg/m <sup>3</sup>	4.0		
Lead (as Pb)	EK0/CHEM/SOP/AAQ-02	<0.1	µg/m³	1.0		
Nickel (as Ni)	EK0/CHEM/SOP/AAQ-02	<15.0	ng/m <sup>3</sup>	20.0		
Arsenic (as As)	EK0/CHEM/SOP/AAQ-02	<5.0	ng/m <sup>3</sup>	6.0		
Ozone (as O <sub>3</sub> )	IS: 5182 (P-9)	<10.0	µg/m³	180.0		
Ammonia (as NH <sub>3</sub> )	APHA Method 401	<20.0	µg/m³	400.0		
Benzene (as C <sub>6</sub> H <sub>6</sub> )	IS: 5182 (P-11)	<1.0	μg/m <sup>3</sup>	5.0		
Benzo(alpha) Pyrine-Particulate Phase Only	EK0/CHEM/SOP/AAQ-09	<1.0	ng/m³	1.0		
	Particulate Matter (PM10) Particulate Matter (PM2.5) Sulphur Dioxide (as SO <sub>2</sub> ) Nitrogen Dioxide (as NO <sub>2</sub> ) Carbon Monoxide (as CO) Lead (as Pb) Nickel (as Ni) Arsenic (as As) Ozone (as O <sub>3</sub> ) Ammonia (as NH <sub>3</sub> ) Benzene (as C <sub>6</sub> H <sub>6</sub> ) Benzo(alpha) Pyrine-Particulate	Parameters         Test Methods           Particulate Matter (PM10)         IS: 5182 (P-23)           Particulate Matter (PM2.5)         EK0/CHEM/SOP/AAQ-01           Sulphur Dioxide (as SO <sub>2</sub> )         IS: 5182 (P-2)           Nitrogen Dioxide (as NO <sub>2</sub> )         IS: 5182 (P-6)           Carbon Monoxide (as CO)         IS: 5182 (P-10)           Lead (as Pb)         EK0/CHEM/SOP/AAQ-02           Nickel (as Ni)         EK0/CHEM/SOP/AAQ-02           Arsenic (as As)         EK0/CHEM/SOP/AAQ-02           Ozone (as O <sub>3</sub> )         IS: 5182 (P-9)           Ammonia (as NH <sub>3</sub> )         APHA Method 401           Benzene (as C <sub>6</sub> H <sub>6</sub> )         IS: 5182 (P-11)           Benzo(alpha) Pyrine-Particulate         EK0/CHEM/SOP/AAQ-09	Parameters         Test Methods         Results           Particulate Matter (PM10)         IS: 5182 (P-23)         79.6           Particulate Matter (PM2.5)         EK0/CHEM/SOP/AAQ-01         51.3           Sulphur Dioxide (as SO₂)         IS: 5182 (P-2)         14.2           Nitrogen Dioxide (as NO₂)         IS: 5182 (P-6)         31.4           Carbon Monoxide (as CO)         IS: 5182 (P-10)         0.78           Lead (as Pb)         EK0/CHEM/SOP/AAQ-02         <0.1	Parameters         Test Methods         Results         Units           Particulate Matter (PM10)         IS: 5182 (P-23)         79.6         μg/m³           Particulate Matter (PM2.5)         EK0/CHEM/SOP/AAQ-01         51.3         μg/m³           Sulphur Dioxide (as SO₂)         IS: 5182 (P-2)         14.2         μg/m³           Nitrogen Dioxide (as NO₂)         IS: 5182 (P-6)         31.4         μg/m³           Carbon Monoxide (as CO)         IS: 5182 (P-10)         0.78         mg/m³           Lead (as Pb)         EK0/CHEM/SOP/AAQ-02         <0.1		

### 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/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 (Authorised Signatory)





## 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 Control No. 9711159210, 9711159427. SMS-Whatsapp No.: 9711163422. E-mail: small@elcoro.in, evoproengineurs@gmail.com, website: www.ekopro.in

TEST REPORT					
Ambient Air Quality Monitoring					
Test Report No. : EKO/138/270220 Issued To	: HINDUSTAN ZINC LIMITED. Plot No. 2, Sec - 14 IIE, Sidcul Pantnagar Rudrapur - Uttrakhand	Issue Date : 03/03/2020			
Sample Description Sample Drawn on Sample Drawn by Sample Received on Sampling Location Sampling Time Sampling Plan & Procedure Analysis Duration Ambient Temperature (*C ) Average Flow Rate of SPM (m³/min.) Average Flow Rate of Gases (lpm) Weather Conditions Remark (if any)	: Ambient Air : 26/02/2020 To 27/02/2020 : EPEPL (Mr. Rahul Kashyap) : 27/02/2020 : Canteen East Side in New Plant : 24.0 Hrs. : SOP-AAQ/15 : 27/02/2020 To 02/03/2020 : 21.0 : 1.1 : 1.0 : Clear : NA				

## RESULTS

RESULIS						
S. No.	Parameters	Test Methods	Results	Units	Limits as per CPCB Notification, 18th Nov 2009	
1	Particulate Matter (PM10)	IS: 5182 (P-23)	73.8	µg/m³	100.0	
2	Particulate Matter (PM2.5)	EK0/CHEM/SOP/AAQ-01	42.6	µg/m³	60.0	
3	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	13.5	µg/m³	80.0	
4	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	32.8	µg/m³	80.0	
5	Carbon Monoxide (as CO)	IS: 5182 (P-10)	0.74	mg/m <sup>3</sup>	4.0	
6	Lead (as Pb)	EK0/CHEM/SOP/AAQ-02	<0.1	µg/m <sup>3</sup>	1.0	
7	Nickel (as Ni)	EK0/CHEM/SOP/AAQ-02	<15.0	ng/m <sup>3</sup>	20.0	
8	Arsenic (as As)	EK0/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/m³	180.0	
10	Ammonia (as NH <sub>3</sub> )	APHA Method 401	<20.0	μg/m³	400.0	
11	Benzene (as C <sub>6</sub> H <sub>6</sub> )	IS: 5182 (P-11)	<1.0	µg/m³	5.0	
12	Benzo(alpha) Pyrine-Particulate Phase Only	EK0/CHEM/SOP/AAQ-09	<1.0	ng/m <sup>3</sup>	1.0	

## 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/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 "







## EKO PRO ENGINEERS PVT. LTD.

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Office & Laboratory 32/41, South Side of G. T. Road, UPSIDC Industrial Area, Ghaziabad - 201 009 (Delhi-NCR) INDIA. Contact No. 9711159210, 9711159242, SMSWhatsapp No. 9711163422. E-mail email@akopro.in, ekoproengineers@gmail.com, website: www.ekopro.in

## TEST REPORT

## **Noise Monitoring**

Test Report No.: EKO/156/270220

: HINDUSTAN ZINC LIMITED

Issued To

Plot No. 2 Sec-14

IIE, Sidcul Pantnagar Rudrapur - Uttrakhand

Sample Description

: Ambient Noise : 26/02/2020

Sample Drawn on Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020

Sampling Location

: Back Side Of DG Area

Sampling Plan & Procedure

: SOP-N/01

Weather Condition

: Normal

Analysis Duration Remark (if any) 27/02/2020 To 28/02/2020

· NA

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	EKO/CHEM/SOP/S/N-01	71.2	dB (A)	75.0
2	Leq (Night Time)	EKO/CHEM/SOP/S/N-01	63.4	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.
- 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.
- Responsibility of the Laboratory is limited to the invoiced amount only.

"End of Report"

FOR EKO PROLENCIALERA PVT. LTD
PURNIMA: CHAVHAN
TECHNICAL MANAGER
(ACTION 1984) SIGNALO



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Environmental Consultants and Analytical Laboratory (An ISO 9881:2015 Certified Company)

Office & Laboratory : 32/41, South Side of G. T. Road, UPSIDC Industrial Area, Ghazlabad - 201 009 (Delbi-NCR) INDIA. Contact No. 9711159210, 9711159427, SMS/Whatsapp No. : 9711163422. E-mail: ersall@ekopro.in, ekoproangineers@gmail.com, website: www.chopro.in.

## TEST REPORT

## **Noise Monitoring**

Test Report No.: EKO/157/270220

Issued To

: HINDUSTAN ZINC LIMITED.

Plot No. 2 Sec-14

IIE, Sidcul Pantnagar

Rudrapur - Uttrakhand

Sample Description

: Ambient Noise

Sample Drawn on

: 26/02/2020

Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020

Sampling Location

: Near Main Gate

Sampling Plan & Procedure

: SOP-N/01

Weather Condition

: Normal

Analysis Duration Remark (if any)

27/02/2020 To 28/02/2020

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	EKO/CHEM/SOP/S/N-01	64.9	dB (A)	75.0
2	Leq (Night Time)	EKO/CHEM/SOP/S/N-01	56.8	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.
- 2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
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\*\*End of Report\*\*

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Page 1 of 1



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## TEST REPORT

## **Noise Monitoring**

Test Report No.: EKO/158/270220

issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sec-14 IIE, Sidcul Pantnagar Rudrapur - Uttrakhand

Sample Description

: Ambient Noise

Sample Drawn on

: 26/02/2020

Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020

Sampling Location Sampling Plan & Procedure : East Side Of Canteen in New Plant

Weather Condition

: SOP-N/01 : Normal

Analysis Duration

: 27/02/2020 To 28/02/2020

Remark (if any)

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	EKO/CHEM/SOP/S/N-01	63.5	dB (A)	75.0
2	Leq (Night Time)	EKO/CHEM/SOP/S/N-01	52.4	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.
- 2. This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
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"End of Report"

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## EKO PRO ENGINEERS PVT. LTD.

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Office & Laboratory : 32/41, South Side of G. T. Road, UPSIDC Industrial Area. Ghaziebad - 201 009 (Delh-NCR) INDIA. Contact No. 9711159210, 9711159427. SMS/Whatsapp No. 9711159422. E-mail: email@ekopro.in, ekoproengineers@gmail.com, website: www.nkopro.in

## TEST REPORT

## **Noise Monitoring**

Test Report No.: EKO/155/270220

Issued To

: HINDUSTAN ZINC LIMITED.

Plot No. 2 Sec-14

IIE, Sidoul Pantnagar Rudrapur - Uttrakhand

Sample Description

: Ambient Noise : 26/02/2020 Sample Drawn on

Sample Drawn by

: EPEPL (Mr. Rahul Kashyap)

Sample Received on

: 27/02/2020

Sampling Location

: Near Compressor Area

Sampling Plan & Procedure

: SOP-N/01 : Normal

Weather Condition

27/02/2020 To 28/02/2020

Analysis Duration Remark (if any)

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per "The Noise Pollution (Regulation & Control) Rules, 2000"
1	Leq (Day Time)	EKO/CHEM/SOP/S/N-01	72.6	dB (A)	75.0
2	Leq (Night Time)	EKO/CHEM/SOP/S/N-01	66.4	dB (A)	70.0

- 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.
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"End of Report"

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

Office & Laboratory 32/41, South Side of G. T. Rond, UPSIDC Industrial Area, Ghaziabad - 201 009 (Delhi-NCR) INDIA Contact No. 9711159210, 9711159427, SMS-Whatsapp No. 9711163422. E-mail: email@ekopro.in, ekoproengineers@gmail.com, websile. www.nxpom.in

## **TEST REPORT**

## Effluent Sample Analysis

Test Report No.: EKO/167/270220

issued To

: HINDUSTAN ZINC LIMITED

Plot No. 2 Sec-14

IIE, Sidcul Pantnagar

Sample Description

Sample Drawn on

Sample Drawn by

Sample Received on

Sampling Location

Sampling Plan & Procedure Sample Quantity

Environmental Condition

Analysis Duration Remark (if any)

Rudrapur - Uttrakhand

STP Outlet (After Ultrafiltration)

26/02/2020

EPEPL (Mr. Rahul Kashyap) 27/02/2020

From STP Plant : SOP-W/66

: 2.0 Litre : Normal

27/02/2020 To 03/03/2020

### RESULTS

S. No.	Parameters	Test Method	Results	Units	Limits as per CPCB (EPR-1986 Schedule VI Part-A)
1	pH	IS: 3025 (P-11)	6.89		5.5-9.0
	Total Suspended Solids	IS: 3025 (P-17)	42.0	mg/L	100.0
	COD (as O2)	IS: 3025 (P-58)	90.2	mg/L	250.0
4	BOD (@27°C for 3 days)	IS: 3025 (P-44)	24.0	mg/L	The second secon
5	Total Nitrogen (as N)	APHA 4500 N	5.26		30.0
	Phosphate (as P)	IS: 3025 (P-31)	0.98	mg/L	100.0
	Ammonical Nitrogen (as N)	APHA 4500 NH3	The state of the s	mg/L	5.0
	Faecal Coliform		6.28	mg/L	50.0
lotee		APHA 9221 E	210	MPN/100ml	1000.0

- 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.
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- 4. The test samples will be disposed off after 15 days from the date of reporting of result, 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 ENGINEED SPYT LTD. SHIVANGI SINGH RAIZADA SECTION INCHARGE MICROSIOLOGY

Authorised Signatury

FOR EKO PRO ENGINEERS RVT. LTD.

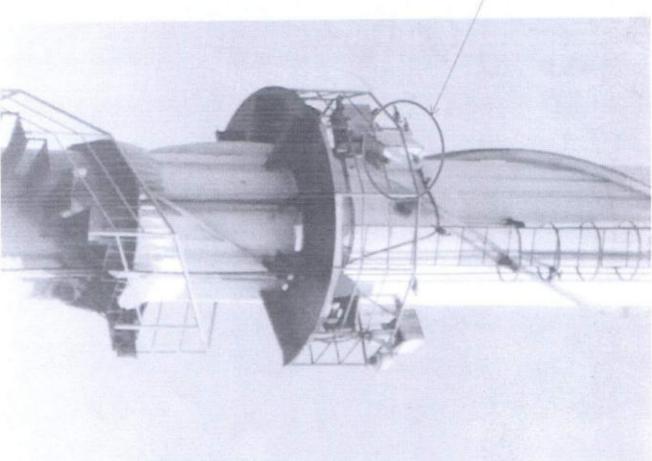
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Page 1 of 1

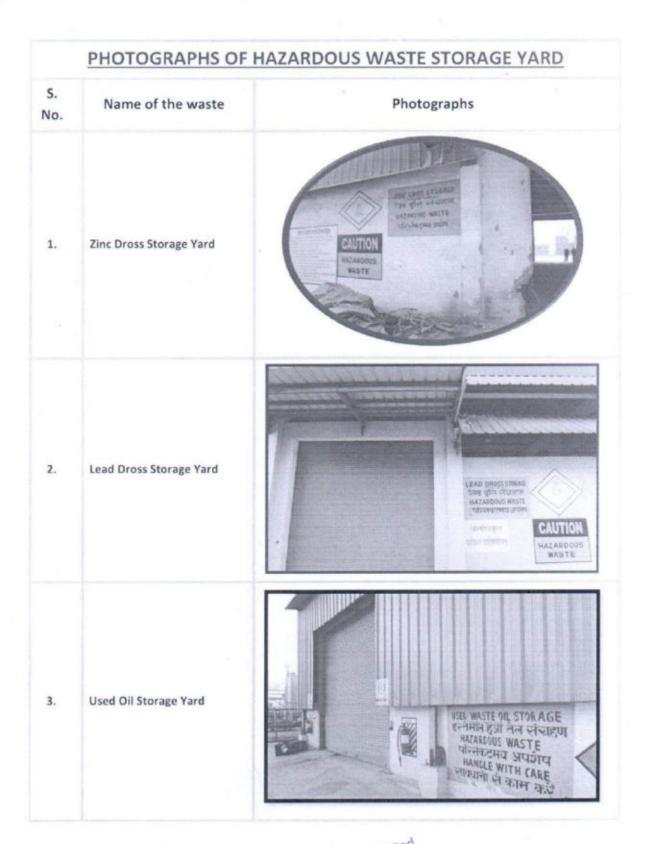
PM analyzer

PM analyzer Installed at Stack

DNNEXURE-2



Hindustan Zinc Limited
Pantnagar Metal Plant
Pantnagar Metal Plant
Plot No 283



Hindustan Zinc Limited

Hindustan Zinc Limited

Pamnager Metal Ptant

Pamnager Metal Ptant

Plot No 283, Sector 14, IIE. SIDCUL,

Plot No 283, Sector 14, IIE. SIDCUL,

Rudrapur — 283153, Uttarakhand.

Rudrapur — 283153, Uttarakhand.

## STP PLANT



ETP PLANT



Rain water Storage Ponds

Hindustan Zinc Limited
Pantnagar Metal Plant
Piot No.2&3, Sector 14, IIE, SIDCUL,
Rudrapur – 263153, Uttarakhand,

## Annexure-14

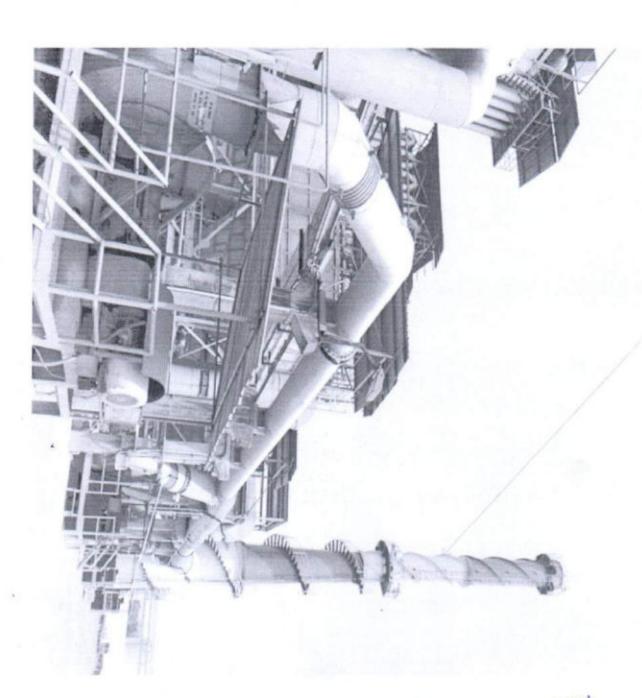
Month	Ground Water Withdrawal	MOU	Rain water utilization
Apr-19	7311	Cu.m	. 0
May-19	7913	Cu.m	0
Jun-19	7694	Cu.m	0
Jul-19	6719	Cu.m	1547
Aug-19	1901	Cu.m	4675
Sep-19	3602	Cu.m	1814
Oct-19	5150	Cu.m	580
Nov-19	6089	Cu.m	337
Dec-19	4699	Cu.m	745
Jan-20	1955	Cu.m	3581
Feb-20	4087	Cu.m	359
Mar-20	4601	Cu.m	0
Total	61721	Cu.m	13638

All reading recorded in cubic meter.

Water Withdrawal Point - Borewell

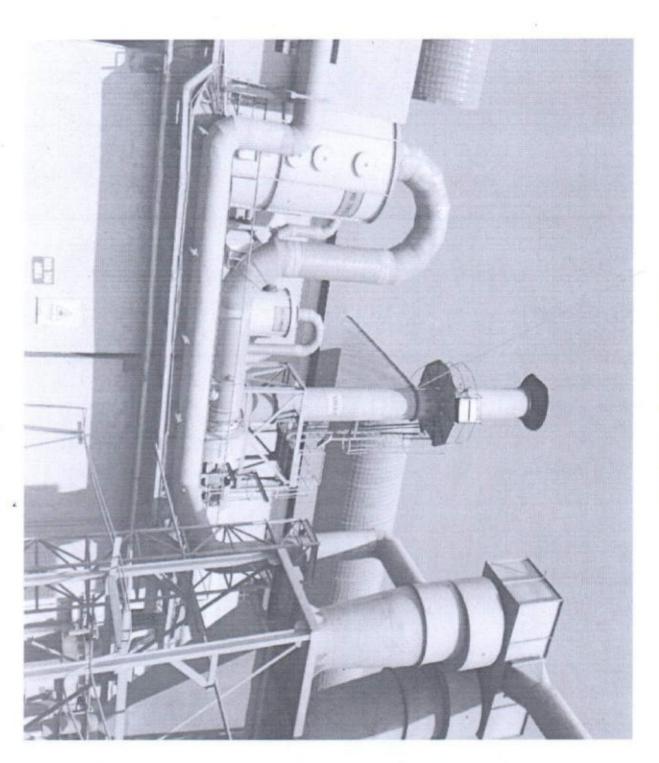






Hindustan Zinc Limited

Pantnagar Metal Plant
Plot No. 283, Sector 14, IIE, SIDCUL.



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

## CSR & CER Activities at PMP



1. Empowerment of women and strengthening of Self Help Group through Sakhi Project through Saheli Samiti & Manjari Foundation.



2. Sending students for Summer camp organized at Udaipur under Shiksha shambhal Project for across HZL units. Total 30 students were benefitted.



3. An Education Initiative – Learning through Technology for Class 1 to 8<sup>th</sup> class students in two schools of Rudrapur. Covering in two schools, 382 students were benefitted.



3. Extending primary and Preventive cure facilities through Health check up camps and distribution of medicines through Mobile Health Clinic Project with Jimmedhari Foundation.

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

## CSR & CER Activities at PMP



Unchi Udaan Project (coaching for IIT entrance exam) at Udaipur. Presently total 20 students are studying under this program.

Hindustan Zinc Limited

Hindustan Zinc Limited

Pantnagar Metal Plant
Pantnagar Metal IIE. SIDCUL
Pantnagar Metal III. SIDCUL
Pantnagar Metal